



South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

A G E N D A

MEETING, NOVEMBER 2, 2018

A meeting of the South Coast Air Quality Management District Board will be held at 9:00 a.m., in the Auditorium at SCAQMD Headquarters, 21865 Copley Drive, Diamond Bar, California.

Questions About an Agenda Item

- The name and telephone number of the appropriate staff person to call for additional information or to resolve concerns is listed for each agenda item.
- In preparation for the meeting, you are encouraged to obtain whatever clarifying information may be needed to allow the Board to move expeditiously in its deliberations.

Meeting Procedures

- The public meeting of the SCAQMD Governing Board begins at 9:00 a.m. The Governing Board generally will consider items in the order listed on the agenda. However, any item may be considered in any order.
- After taking action on any agenda item not requiring a public hearing, the Board may reconsider or amend the item at any time during the meeting.

Questions About Progress of the Meeting

- During the meeting, the public may call the Clerk of the Board's Office at (909) 396-2500 for the number of the agenda item the Board is currently discussing.

The agenda and documents in the agenda packet will be made available upon request in appropriate alternative formats to assist persons with a disability. Disability-related accommodations will also be made available to allow participation in the Board meeting. Any accommodations must be requested as soon as practicable. Requests will be accommodated to the extent feasible. Please telephone the Clerk of the Boards Office at (909) 396-2500 from 7:00 a.m. to 5:30 p.m. Tuesday through Friday.

All documents (i) constituting non-exempt public records, (ii) relating to an item on the agenda, and (iii) having been distributed to at least a majority of the Governing Board after the agenda is posted, are available prior to the meeting for public review at the South Coast Air Quality Management District Clerk of the Board's Office, 21865 Copley Drive, Diamond Bar, CA 91765.

The Agenda is subject to revisions. For the latest version of agenda items herein or missing agenda items, check the District's web page (www.aqmd.gov) or contact the Clerk of the Board, (909) 396-2500. Copies of revised agendas will also be available at the Board meeting.

CALL TO ORDER

- Pledge of Allegiance
- Opening Comments: William A. Burke, Ed.D., Chair
Other Board Members
Wayne Nastri, Executive Officer

Staff/Phone (909) 396-

CONSENT CALENDAR (Items 1 through 19)

Note: Consent Calendar items held for discussion will be moved to Item No. 20

- | | | |
|----|--|----------------------|
| 1. | Approve Minutes of October 5, 2018 Board Meeting | Garzaro/2500 |
| 2. | Set Public Hearings December 7, 2018 to Consider Adoption of and/or Amendments to SCAQMD Rules and Regulations | Nastri/3131 |
| A. | Certify the Final Environmental Assessment and Adopt Rule 1118.1 - Control of Emissions from Non-Refinery Flares | Nakamura/3105 |

Proposed Rule 1118.1 applies to RECLAIM and non-RECLAIM facilities that operate non-refinery flares located at landfills, wastewater treatment plants, oil and gas production facilities, organic liquid loading stations, and tank farms. The proposed rule will implement, in part, the 2016 Air Quality Management Plan Control Measure CMB-03 - Emission Reductions from Non-Refinery Flares and facilitate the transition of the NOx RECLAIM program to a command-and-control regulatory structure. Proposed requirements include NOx and VOC emission limits that reflect BARCT standards and a capacity threshold. Additionally, Proposed Rule 1118.1 establishes provisions for source testing, monitoring, reporting, recordkeeping, and provides exemptions for low-use and low-emitting flares. This action is to adopt the Resolution: 1) Certifying the Final Environmental Assessment for Proposed Rule 1118.1 - Control of Emissions from Non-Refinery Flares, and 2) Adopting Proposed Rule 1118.1 - Control of Emissions from Non-Refinery Flares. (Reviewed: Stationary Source Committee, October 19, 2018)

B. Certify Final Subsequent Environmental Assessment and Amend Rules 1146, 1146.1, 1146.2 and Adopt Rule 1100 **Fine/2239**

The adoption Resolution of the 2016 AQMP directed staff to achieve additional NOx emission reductions and to transition the RECLAIM program to a command-and-control regulatory structure as soon as practicable. Proposed Amended Rules 1146, 1146.1 and 1146.2 updates NOx emission limits for boilers, heaters, and steam generators applicable to these rules. The revised NOx emission limits represent BARCT and apply to RECLAIM and non-RECLAIM facilities. Proposed Rule 1100 establishes the compliance schedule for equipment at RECLAIM facilities that are subject to Proposed Amended Rules 1146 and 1146.1. PAR 1146.2 includes the compliance schedule for equipment regulated under this rule. This action is to adopt the Resolution: 1) Certifying the Final Subsequent Environmental Assessment for Proposed Amended Rules 1146 - Emissions of Oxides of Nitrogen from Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters; 1146.1 - Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; 1146.2 - Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters; and Proposed Rule 1100 - Implementation Schedule for NOx Facilities; 2) Amending Rules 1146, 1146.1, and 1146.2; and 3) Adopting Rule 1100. (Reviewed: Stationary Source Committee, April 20 and October 19, 2018)

Budget/Fiscal Impact

3. Execute Contract for Expansion of Hydrogen Fueling Station **Miyasato/3249**

The University of California Irvine (UCI) has requested cofunding for the expansion of its hydrogen fueling station to add additional capacity including more fueling positions to serve the increasing number of fuel cell cars and buses utilizing the station. The MSRC has approved \$1 million in cost-share and the CEC is considering providing \$400,000 in cost-share for this \$1.8 million project. This action is to execute a contract with UCI for expansion of their hydrogen fueling station in an amount not to exceed \$400,000 from the Clean Fuels Program Fund (31). (Reviewed: Technology Committee, October 19, 2018; Recommended for Approval)

4. Develop and Demonstrate Zero Emissions Heavy-Duty Trucks, Freight Handling Equipment, EV Infrastructure and Renewable Energy

Miyasato/3249

SCAQMD received an award of \$44,839,686 to develop and demonstrate zero emissions heavy-duty trucks, freight handling equipment, EV infrastructure and renewable energy under CARB's Low Carbon Transportation Greenhouse Gas Reduction Fund Investments. Volvo Group North America and its project partners are providing \$41,855,308. These actions are to recognize \$44,839,686 and transfer \$14,000,000 (\$4,000,000 for SCAQMD's project cost-share and \$10,000,000 for temporary advance of funds) from the Clean Fuels Program Fund (31) into the GHG Reduction Projects Special Revenue Fund (67). This action is to also execute contracts in an amount not to exceed \$46,688,250 to implement this project. Out of the \$2,151,436 allocated in CARB's grant for administrative expenses, these actions are to reimburse the General Fund up to \$1,972,936 from Fund 67 for administrative costs and transfer \$178,500 from Fund 67 to Fund 31 to execute a contract modification for administrative project implementation support. Finally, these actions are to authorize the Executive Officer to execute a contract modification and redistribute administrative funds to augment project funds on an as-needed basis. (Reviewed: Technology Committee, October 19, 2018; Recommended for Approval)

5. Approve Awards for Heavy-Duty Diesel Drayage Truck Replacement Projects

Miyasato/3249

On November 3, 2017, the Board recognized \$1,050,000 from U.S. EPA's 2017 Diesel Emissions Reduction Act (DERA) and issued a Program Announcement to solicit applications for the replacement of heavy-duty diesel drayage trucks with natural gas trucks as well as the transfer of the replaced diesel trucks to Washington State to replace older dirtier diesel trucks, which would then be scrapped. This action is to approve awards to replace 2012 or newer heavy-duty diesel drayage trucks with near-zero NOx emissions natural gas trucks in an amount not to exceed \$1,000,000 from U.S. EPA's 2017 DERA Grant in the Advanced Technology, Outreach and Education Fund (17). (Reviewed: Technology Committee, October 19, 2018; Recommended for Approval)

6. **Establish Special Revenue Fund, Recognize Revenue, Execute Agreements for Volkswagen Environmental Mitigation Program and Transfer Funds** **Minassian/2641**

On May 25, 2018, CARB approved the Beneficiary Mitigation Plan for the Volkswagen (VW) Environmental Mitigation Trust. This plan identifies five funding categories for the State's \$423 million allocation of the VW Environmental Mitigation Trust. The funded projects are intended to mitigate the excess NOx emissions caused by the VW vehicles. SCAQMD has been identified by CARB as the administrator of two project funding categories—the Zero Emissions Class 8 Freight and Port Drayage Trucks and the Combustion Freight and Marine Projects. These actions are to establish the VW Mitigation Special Revenue Fund (79), recognize revenue up to \$150 million into this special revenue fund, execute an agreement with CARB to administer and implement the two project funding categories, execute a Memorandum(s) of Agreement with other air districts, as needed, to assist in administering this program, and transfer funds from the VW Mitigation Special Revenue Fund (79) to the General Fund to reimburse administrative costs associated with the program. (Reviewed: Technology Committee, October 19, 2018; Recommended for Approval)

7. **Adopt Resolution Recognizing Funds for FY 2017-18 Carl Moyer State Reserve Program, Execute Contracts for FY 2017-18 "Year 20" Carl Moyer Program, SOON Provision and Community Air Protection AB 134 Program, Amend Awards and Transfer Funds** **Minassian/2641**

In June 2018, Program Announcements for the "Year 20" Carl Moyer Program and SOON Provision closed. This year, in addition to the traditional sources of Carl Moyer SB 1107 and AB 923 funds, funding from the Community Air Protection AB 134, State Reserve, FARMER and Voluntary NOx Remediation Measure Programs can also be used to fund Carl Moyer and SOON Provision projects. This action is to adopt a Resolution recognizing up to \$3.1 million in Carl Moyer State Reserve funds from CARB with its terms and conditions for FY 2017-18. These actions are to also execute contracts for the "Year 20" Carl Moyer, SOON Provision and Community Air Protection AB 134 Programs totaling \$63,541,435, comprising \$35,559,645 from the Carl Moyer Program Fund (32) and \$27,981,790 from the Community Air Protection AB 134 Fund (77). These actions are to also amend two "Year 19" Carl Moyer awards, adding \$117,754 from the Carl Moyer Program SB 1107 Fund (32), and transfer \$2 million from the Carl Moyer Program AB 923 Fund (80) to the Voucher Incentive Program Fund (59) for truck replacements. (Reviewed: Technology Committee, October 19, 2018; Less than a quorum was present; the Committee Members concurred that this item be approved by the Board.)

8. Issue RFP for Health Study of Impacts of Well Rupture at Aliso Canyon **Ghosh/2582**

In 2017, the settlement agreement between SCAQMD and Southern California Gas Company allocated \$1 million toward a health study of the impacts associated with the gas leak at the Aliso Canyon storage facility. This action is to release an RFP to solicit bids for potential projects to conduct data integration and exposure modeling, in an amount not to exceed \$1 million. Results of this work will include information about the concentrations, timing of exposures and spatial patterns of pollutants from the Aliso Canyon gas leak in the community before, during and after the incident. The RFP was developed in close coordination with SCAQMD's Health Study Technical Advisory Group. This work will provide essential information on exposures and health data that will help inform the health study to be conducted by the Los Angeles County Department of Public Health. (Reviewed: Administrative Committee, October 12, 2018; Recommended for Approval)

9. Issue RFP to Evaluate Meteorological Factors and Trends Contributing to Recent Poor Air Quality in South Coast Air Basin **Rees/2856**

Despite significant air quality improvements achieved over the last several decades, the South Coast Air Basin (SCAB) has experienced high ozone levels in recent years. Recent high temperatures and increased air stagnation have contributed to increased ozone levels despite continuing reductions in emissions. To assess these recent trends, staff is proposing to conduct a comprehensive study to evaluate trends in meteorological factors that can adversely impact air quality in the SCAB. The study will assist staff to better understand whether recent weather trends are expected to continue and the relationship to a changing climate, thus informing the development of more effective strategies for improving air quality in the future. This action is to issue an RFP to solicit bids to perform a comprehensive meteorological study to evaluate various factors and trends conducive to recent poor air quality in the SCAB. (Reviewed: Mobile Source Committee, October 19, 2018; Recommended for Approval)

10. Amend Contracts for Legislative Representation in Sacramento, California **Alatorre/3122**

The current contracts for legislative representation in Sacramento expire on December 31, 2018 for The Quintana Cruz Company, Joe A. Gonsalves & Son, and California Advisors, LLC. Based upon the firms' effective performance during the first year of their current contracts, this action is to approve the first one-year extension of the contract with The Quintana Cruz Company in the amount of \$103,500; Joe A. Gonsalves & Son in the amount of \$143,000; and California Advisors, LLC in the amount of \$103,500 for legislative lobbying services in Sacramento for Calendar Year 2019. Sufficient funding is available in the Legislative, Public Affairs & Media FY 2018-19 Budget. (Reviewed: Administrative Committee, October 12, 2018; Recommended for Approval)

11. Recognize Revenue and Execute Agreements for Installation and Maintenance of Air Filtration Systems **Gilchrist/3459**

SCAQMD has executed a settlement agreement with Rainbow Transfer/Recycling, Inc., to install and maintain air filtration systems at schools. This action is to recognize up to \$250,000 into the Air Filtration Fund (75). These actions are to also execute a contract to install and maintain air filtration systems at schools in an amount not to exceed \$250,000 from the Air Filtration Fund (75) and execute an agreement with the local school district in Huntington Beach near the transfer facility. (Reviewed: Technology Committee, October 19, 2018; Recommended for Approval)

12. Approve Contract Awards and Modifications Approved by MSRC **McCallon**

As part of their FYs 2016-18 Work Program, the MSRC approved new contracts under the Local Government Partnership Program. The MSRC also approved modifications to contracts under the Near-Zero Engine Incentive Program and for programmatic outreach services as part of their FYs 2014-16 Work Program, and a modified award under the Natural Gas Infrastructure Program as part of their FYs 2016-18 Work Program. At this time the MSRC seeks Board approval of the contract awards and modifications as part of the FYs 2014-16 and 2016-18 Work Programs. (Reviewed: Mobile Source Air Pollution Reduction Review Committee, October 23, 2018; Recommended for Approval)

Action Item/No Fiscal Impact

13. Establish Board Meeting Schedule for Calendar Year 2019 **Nastri/3131**

The proposed Board Meeting Schedule for Calendar Year 2019 is submitted for Board consideration. The Administrative Committee meeting schedule (second Friday of the month), as well as the other standing committee meetings, is included for information only. (Reviewed: Administrative Committee, October 12, 2018; Recommended for Approval)

Items 14 through 19 - Information Only/Receive and File

14. Legislative, Public Affairs, and Media Report **Alatorre/3122**

This report highlights the September 2018 outreach activities of the Legislative, Public Affairs and Media Office, which includes: Major Events, Community Events/Public Meetings, Environmental Justice Update, Speakers Bureau/Visitor Services, Communications Center, Public Information Center, Business Assistance, Media Relations and Outreach to Business and Federal, State, and Local Government. (No Committee Review)

15. Hearing Board Report **Prussack/2500**

This reports the actions taken by the Hearing Board during the period of September 1 through September 30, 2018. (No Committee Review)

16. **Civil Filings and Civil Penalties Report** **Gilchrist/3459**
This reports the monthly penalties from September 1, 2018 through September 30, 2018, and legal actions filed by the General Counsel's Office from September 1, 2018 through September 30, 2018. An Index of District Rules is attached with the penalty report. (Reviewed: Stationary Source Committee, October 19, 2018)
17. **Lead Agency Projects and Environmental Documents Received by SCAQMD** **Nakamura/3105**
This report provides, for the Board's consideration, a listing of CEQA documents received by the SCAQMD between September 1, 2018 and September 30, 2018, and those projects for which the SCAQMD is acting as lead agency pursuant to CEQA. (Reviewed: Mobile Source Committee, October 19, 2018)
18. **Rule and Control Measure Forecast** **Fine/2239**
This report highlights SCAQMD rulemaking activities and public workshops potentially scheduled for 2018 and portions of 2019. (No Committee Review)
19. **Status Report on Major Ongoing and Upcoming Projects for Information Management** **Moskowitz/3329**
Information Management is responsible for data systems management services in support of all SCAQMD operations. This action is to provide the monthly status report on major automation contracts and planned projects. (Reviewed: Administrative Committee, October 12, 2018)
20. **Items Deferred from Consent Calendar**

BOARD CALENDAR

Note: The October meeting of the Legislative Committee was canceled. The next meeting of the Legislative Committee is scheduled for November 9, 2018.

21. **Administrative Committee (Receive & File)** **Chair: Burke** **Nastri/3131**
22. **Mobile Source Committee (Receive & File)** **Chair: Parker** **Fine/2239**
23. **Stationary Source Committee (Receive & File)** **Chair: Benoit** **Tisopulos/3123**
24. **Technology Committee (Receive & File)** **Chair: Buscaino** **Miyasato/3249**

25. Mobile Source Air Pollution Reduction Review Committee (Receive & File) Board Liaison: Benoit Minassian/2641

26. California Air Resources Board Monthly Report (Receive & File) Board Rep: Mitchell Garzaro/2500

PUBLIC HEARINGS

27. Certify Final Mitigated Subsequent Environmental Assessment and Amend Rule 1135 - Emissions of Oxides of Nitrogen from Electricity Generating Facilities Nakamura/3105

The adoption Resolution of the 2016 AQMP directed staff to achieve additional NOx emission reductions and to transition the RECLAIM program to a command-and-control regulatory structure as soon as practicable. Proposed Amended Rule 1135 applies to RECLAIM and non-RECLAIM electricity generating facilities and is being amended to update NOx emission limits to reflect current BARCT, establish an ammonia emission limit, and provide implementation timeframes to facilitate the transition of the NOx RECLAIM program to a command-and-control regulatory structure. The provisions in the proposed amended rule apply to RECLAIM and non-RECLAIM electricity generating facilities. Other provisions are incorporated to remove obsolete provisions, update provisions for monitoring, reporting, and recordkeeping, and provide clarifications. This action is to adopt the Resolution: 1) Certifying the Final Mitigated Subsequent Environmental Assessment for Proposed Amended Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities, and 2) Amending Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities. (Reviewed: Stationary Source Committee, August 17, 2018)

28. Determine that Proposed Rule 1407.1 – Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations Is Exempt from CEQA and Adopt Rule 1407.1 Nakamura/3105

Proposed Rule 1407.1 is an information gathering rule that will require a one-time source test and submittal of information to quantify arsenic, cadmium, chromium, hexavalent chromium and nickel emissions from chromium alloy melting operations. Information obtained will be used to establish emission standards and other provisions. Proposed Rule 1407.1 also includes requirements for metals composition testing, recordkeeping, and reporting. This action is to adopt the Resolution: 1) Determining that Proposed Rule 1407.1 – Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations is exempt from the requirements of the California Environmental Quality Act; and 2) Adopting Rule 1407.1 – Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations. (Reviewed: Stationary Source Committee, September 21, 2018)

29. **Certify Revised Final Environmental Assessment and Amend Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations** **Nakamura/3105**

Proposed Amended Rule (PAR) 1469 proposes new requirements to control hexavalent chromium-containing tanks that are currently not regulated. In addition, PAR 1469 establishes requirements for building enclosures, housekeeping and best management practices, periodic source testing, and parameter monitoring of pollution control equipment. PAR 1469 includes provisions for a revised chemical fume suppressant certification process that further considers toxicity and exposure, provisions to encourage the elimination of hexavalent chromium in Rule 1469 processes, and revisions to align Rule 1469 with the U.S. EPA National Emission Standards for Hazardous Air Pollutant for Chromium Electroplating. This action is to adopt the Resolution: 1) Certifying the Revised Final Environmental Assessment for Proposed Amended Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations; and 2) Amending Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations. (Reviewed: Stationary Source Committee, November 17, 2017, February 16, March 16, April 20, July 20, and October 19, 2018)

30. **Determine that Updated 1-Hour Ozone Standard Attainment Demonstration Is Exempt from CEQA and Approve Updated 1-Hour Ozone Standard Attainment Demonstration** **Fine/2239**

Staff has updated the attainment demonstration of the federal 1979 1-hour ozone standard that was presented in the 2016 AQMP. The attainment demonstration has been updated to reflect a revised emission inventory, revised air quality modeling, and an updated attainment strategy. The emissions inventory in the updated attainment demonstration is now consistent with the final emissions inventory in the 2016 AQMP that was used for the 8-hour ozone and PM2.5 standards attainment demonstrations. The attainment strategy relies only on SCAQMD's proposed control measures in the 2016 AQMP, and does not include emission reductions from CARB's State Implementation Plan strategies including CARB's further deployment of advanced technology measures. No new control measures are being proposed, and all control measures in the 2016 AQMP remain in place for the 8-hour ozone standards. This action is to: 1) Determine that the updated 1-hour ozone standard attainment demonstration is exempt from the requirements of the California Environmental Quality Act; and 2) Approve the updated 1-hour ozone standard attainment demonstration. (Reviewed: Mobile Source Committee, October 19, 2018)

PUBLIC COMMENT PERIOD – (Public Comment on Non-Agenda Items, Pursuant to Government Code Section 54954.3)

BOARD MEMBER TRAVEL – (No Written Material)

Board member travel reports have been filed with the Clerk of the Boards, and copies are available upon request.

CONFLICT OF INTEREST DISCLOSURES – (No Written Material)

Under the approval authority of the Executive Officer the District will enter into a contract modification with Today's Fresh Start Charter School (Contract No. G18063A). Governing Board Member Dr. Clark Parker has advised that his wife is a non-compensated superintendent of this non-profit corporation. Although there is no perceived financial benefit, out of an abundance of caution Dr. Parker abstained from any participation in the making of the contract modification.

Under the approval authority of the Executive Officer the District will enter into contract modifications with Transportation Power, Inc. (Contract No. 160462), University of California, Riverside (UCR) (Contract Nos. C156074 & C172861), and IQAir North America, Inc. (IQAir) (Contract Nos. C180891 & C180971), as well as a License Agreement with Los Angeles Department of Water and Power (LADWP) (Contract No. 19148). Transportation Power, UCR, IQAir, and LADWP are potential sources of income for Governing Board Member Joseph Lyou which qualify for the remote interest exception of Section 1090 of the California Government Code. Dr. Lyou abstained from any participation in the making of the contract modifications and license agreement.

CLOSED SESSION - (No Written Material)

Gilchrist/3459

CONFERENCE WITH LEGAL COUNSEL – EXISTING LITIGATION

It is necessary for the Board to recess to closed session pursuant to Government Code sections 54956.9(a) and 54956.9(d)(1) to confer with its counsel regarding pending litigation which has been initiated formally and to which the SCAQMD is a party. The actions are:

- In the Matter of SCAQMD v. Aerocraft Heat Treating Co., Inc. and Anaplex Corp., SCAQMD Hearing Board Case No. 6066-1 (Order for Abatement);
- SCAQMD v. Anaplex, Los Angeles Superior Court Case No. BC608322 (Paramount Hexavalent Chromium);
- In the Matter of SCAQMD v. Browning-Ferris Industries of California, Inc. dba Sunshine Canyon Landfill, SCAQMD Hearing Board Case No. 3448-14;
- Communities for a Better Environment v. SCAQMD, Los Angeles Superior Court Case No. BS161399 (RECLAIM);
- Communities for a Better Environment v. South Coast Air Quality Management District, Los Angeles Superior Court Case No. BS169841; Safe Fuel and Energy Resources California, et al. v. South Coast Air Quality Management District, Los Angeles Superior Court Case No. BS169923 (Tesoro);
- People of the State of California, ex rel. SCAQMD v. Exide Technologies, Inc., Los Angeles Superior Court Case No. BC533528;

- In re: Exide Technologies, Inc., U.S. Bankruptcy Court, District of Delaware, Case No. 13-11482 (KJC) (Bankruptcy Case);
- Fast Lane Transportation, Inc., et al. v. City of Los Angeles, et al., Court of Appeal, First Appellate District, Case No. A148993 (formerly Contra Costa County Superior Court Case No. MSN14-0300) (SCIG);
- In the Matter of SCAQMD v. Southern California Gas Company, Aliso Canyon Storage Facility, SCAQMD Hearing Board Case No. 137-76 (Order for Abatement); People of the State of California, ex rel SCAQMD v. Southern California Gas Company, Los Angeles Superior Court Case No. BC608322; Judicial Council Coordinated Proceeding No. 4861;
- South Coast Air Quality Management District v. Top Shelf Consulting LLC, Los Angeles Superior Court, Case No. BC676606; In re: Top Shelf Consulting, LLC, U.S. Bankruptcy Court, Central District of California (Los Angeles), Case No. 2:18-bk-11975-ER (Bankruptcy case);
- In the Matter of SCAQMD v. Torrance Refining Company, LLC, SCAQMD Hearing Board Case No. 6060-5 (Order for Abatement); and
- State of California, et al. v. U.S. EPA, et al., U.S. Court of Appeals, D.C. Circuit, Case No. 18-1114 (mid-term evaluation for light-duty vehicles).

CONFERENCE WITH LEGAL COUNSEL – INITIATING LITIGATION

It is also necessary for the Board to recess to closed session pursuant to Government Code section 54956.9(a) and 54956.9(d)(4) to consider initiation of litigation (four cases).

CONFERENCE WITH LEGAL COUNSEL – ANTICIPATED LITIGATION

Also, it is necessary for the Board to recess to closed session pursuant to Government Code section 54956.9(d)(2) to confer with its counsel because there is a significant exposure to litigation against the SCAQMD (one case)—Letter from Steven J. Olson, O'Melveny & Myers LLP, on behalf of ExxonMobil Corporation, dated August 22, 2018.

ADJOURNMENT

*****PUBLIC COMMENTS*****

Members of the public are afforded an opportunity to speak on any agenda item before consideration of that item. Please notify the Clerk of the Board, (909) 396-2500, if you wish to do so. All agendas are posted at SCAQMD Headquarters, 21865 Copley Drive, Diamond Bar, California, at least 72 hours in advance of the meeting. At the end of the agenda, an opportunity is also provided for the public to speak on any subject within the SCAQMD's authority. Speakers will be limited to a total of three (3) minutes for the Consent Calendar and Board Calendar and three (3) minutes or less for other agenda items.

Note that on items listed on the Consent Calendar and the balance of the agenda any motion, including action, can be taken (consideration is not limited to listed recommended actions). Additional matters can be added and action taken by two-thirds vote, or in the case of an emergency, by a majority vote. Matters raised under the Public Comment Period may not be acted upon at that meeting other than as provided above.

Written comments will be accepted by the Board and made part of the record, provided 25 copies are presented to the Clerk of the Board. Electronic submittals to cob@agmd.gov of 10 pages or less including attachment, in MS WORD, PDF, plain or HTML format will also be accepted by the Board and made part of the record if received no later than 5:00 p.m., on the Tuesday prior to the Board meeting.

ACRONYMS

AQ-SPEC = Air Quality Sensor Performance
Evaluation Center

AQIP = Air Quality Investment Program

AQMP = Air Quality Management Plan

AVR = Average Vehicle Ridership

BACT = Best Available Control Technology

BARCT = Best Available Retrofit Control Technology

Cal/EPA = California Environmental Protection Agency

CARB = California Air Resources Board

CEMS = Continuous Emissions Monitoring Systems

CEC = California Energy Commission

CEQA = California Environmental Quality Act

CE-CERT =College of Engineering-Center for Environmental
Research and Technology

CNG = Compressed Natural Gas

CO = Carbon Monoxide

DOE = Department of Energy

EV = Electric Vehicle

FY = Fiscal Year

GHG = Greenhouse Gas

HRA = Health Risk Assessment

LEV = Low Emission Vehicle

LNG = Liquefied Natural Gas

MATES = Multiple Air Toxics Exposure Study

MOU = Memorandum of Understanding

MSERCs = Mobile Source Emission Reduction Credits

MSRC = Mobile Source (Air Pollution Reduction) Review
Committee

NATTS =National Air Toxics Trends Station

NESHAPS = National Emission Standards for
Hazardous Air Pollutants

NGV = Natural Gas Vehicle

NOx = Oxides of Nitrogen

NSPS = New Source Performance Standards

NSR = New Source Review

OEHA = Office of Environmental Health Hazard
Assessment

PAMS = Photochemical Assessment Monitoring
Stations

PEV = Plug-In Electric Vehicle

PHEV = Plug-In Hybrid Electric Vehicle

PM10 = Particulate Matter \leq 10 microns

PM2.5 = Particulate Matter \leq 2.5 microns

RECLAIM=Regional Clean Air Incentives Market

RFP = Request for Proposals

RFQ = Request for Quotations

SCAG = Southern California Association of Governments

SIP = State Implementation Plan

SOx = Oxides of Sulfur

SOON = Surplus Off-Road Opt-In for NOx

SULEV = Super Ultra Low Emission Vehicle

TCM = Transportation Control Measure

ULEV = Ultra Low Emission Vehicle

U.S. EPA = United States Environmental Protection
Agency

VOC = Volatile Organic Compound

ZEV = Zero Emission Vehicle

[↑ Back to Agenda](#)

BOARD MEETING DATE: November 2, 2018

AGENDA NO. 1

MINUTES: Governing Board Monthly Meeting

SYNOPSIS: Attached are the Minutes of the October 5, 2018 meeting.

RECOMMENDED ACTION:

Approve Minutes of the October 5, 2018 Board Meeting.

Denise Garzaro
Clerk of the Boards

DG

FRIDAY, OCTOBER 5, 2018

Notice having been duly given, the regular meeting of the South Coast Air Quality Management District Board was held in the Pacific Ballroom at The L.A. Grand Hotel Downtown, 333 S. Figueroa Street, Los Angeles, California. Members present:

William A. Burke, Ed.D., Chairman
Speaker of the Assembly Appointee

Dr. Clark E. Parker, Sr., Vice Chairman
Senate Rules Committee Appointee

Mayor Ben Benoit
Cities of Riverside County

Council Member Joe Buscaino
City of Los Angeles

Council Member Michael A. Cacciotti
Cities of Los Angeles County – Eastern Region

Dr. Joseph K. Lyou
Governor's Appointee

Mayor Larry McCallon
Cities of San Bernardino County

Supervisor Shawn Nelson
County of Orange

Supervisor V. Manuel Perez
County of Riverside

Council Member Dwight Robinson
Cities of Orange County

Supervisor Janice Rutherford
County of San Bernardino

Supervisor Hilda L. Solis
County of Los Angeles

Member absent:

Mayor Pro Tem Judith Mitchell
Cities of Los Angeles County – Western Region

CALL TO ORDER: Chairman Burke called the meeting to order at 9:05 a.m.

- Pledge of Allegiance: Led by Supervisor Nelson.
- Opening Comments

Dr. Parker announced that he attended the 4th Annual Environmental Justice Conference held September 26, 2018 in Los Angeles. He noted that the speakers were insightful and provided valuable information to the community on efforts to clean the air. He added that the updated “The Right to Breathe” video was shown at the event and was well received.

Council Member Buscaino extended a welcome to the City of Los Angeles and highlighted the numerous items on the agenda that promote green technology.

Dr. Lyou announced that he and Supervisor Rutherford recently toured a UPS warehouse in Ontario and shared a photo of the visit. He commented on the efforts by UPS to utilize a clean fleet and improve warehouse efficiency. UPS mentioned they are limited by the difficulty to procure charging infrastructure for heavy-duty electric trucks.

Supervisor Rutherford commented on how impressive the warehouse was and how eager UPS is to invest in cleaner trucks and noted the importance of seeking additional funding for the infrastructure needed to support these vehicles.

Council Member Cacciotti commented on notices of violation that were issued by the District to idling tour buses in Hollywood. He expressed concern about the emissions from idling vehicles at schools and asked staff if a fact sheet could be produced and distributed to schools and community members to provide information about this issue.

Mr. Nastri explained that staff is engaging in anti-idling enforcement at a number of locations including the Ports and industrial areas in San Bernardino. He added that staff will create outreach materials related to idling.

Supervisor Solis welcomed attendees to Los Angeles and encouraged use of Metro or bike rentals to navigate the area.

Chairman Burke reported that a meeting of the Refinery Committee was held on September 22, 2018 in Wilmington on the topic of hydrogen fluoride storage and use at petroleum facilities. He noted that a public hearing on Proposed Rule 1410 is scheduled to be held at the May 2019 Board meeting, after the item goes to the Stationary Source Committee.

CONSENT CALENDAR

1. Approve Minutes of September 7, 2018 Board Meeting
2. Set Public Hearings November 2, 2018 to Consider Adoption of and/or Amendments to SCAQMD Rules and Regulations
 - A. Certify Final Mitigated Subsequent Environmental Assessment and Amend Rule 1135 - Emissions Of Oxides Of Nitrogen From Electricity Generating Facilities
 - B. Determine that Proposed Rule 1407.1 – Control of Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations Is Exempt from CEQA and Adopt Rule 1407.1
 - C. Certify Revised Final Environmental Assessment and Amend Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations
 - D. Determine that Updated 1-Hour Ozone Attainment Demonstration Is Exempt from CEQA and Adopt Updated 1-Hour Ozone Attainment Demonstration

Budget/Fiscal Impact

3. Execute Agreements to Accept Donation and Disburse Electric Vehicle Chargers
4. Approve Assignment of and Execute Contract for CNG Station at SCAQMD
5. Develop and Demonstrate Zero Emissions Battery-Operated Switcher Locomotive
6. Amend Agreements and Transfer Funds to Develop and Demonstrate Zero Emission Capable Drayage Trucks
7. Amend Contract to Implement DC Fast Charging Network
8. Approve Endowment to University of California Irvine to Support Graduate Student Scholarship Fund and Execute Contract to Develop Fuel Cell-Gas Turbine Hybrid Technology

9. Recognize Revenue and Appropriate Funds for U.S. EPA PAMS and NASA Citizen Science Programs, Transfer Funds for AQ-SPEC, Issue Solicitations and Purchase Orders and/or Contracts for Services, Air Monitoring and Analysis Equipment and One Vehicle
10. Recognize Revenue and Execute Contracts and MOUs to Replace Heavy-Duty Diesel Trucks
11. Transfer and Appropriate Funds and Authorize Purchase of Microsoft Office 365
12. Transfer and Appropriate Funds and Amend Contracts to Provide Short- and Long-Term Systems Development, Maintenance and Support Services
13. Execute Contract for Security Guard Services at Diamond Bar Headquarters
14. Adopt New Class Specification and Amend Salary Resolution for Information Technology Manager and Reclassify Two Existing Manager Positions in Information Management
15. Approve Contract Awards as Approved by MSRC

Action Item/No Fiscal Impact

16. Approve Test Method Guidance Document for Rule 1168 – Adhesive and Sealant Applications

Dr. Lyou announced his abstention on Item Nos. 5 and 15 because the City of Los Angeles is a potential source of income to him; on Item No. 6 because BYD Motors and Volvo North America are a potential source of income to him, and on Item No. 10 because Port of Long Beach is a potential source of income to him.

Council Member Buscaino noted that he is a Council Member for the City of Los Angeles which is involved with Item Nos. 5 and 15.

Supervisor Rutherford noted that she is a Supervisor for San Bernardino County which is involved with Item No. 15. Council Member Robinson noted that he is a Council Member for the City of Lake Forest which is involved with Item No. 15. Mayor Benoit noted that he is Council Member for the City of Wildomar and a member of the Riverside County Transportation Commission which is involved with Item No. 15. Supervisor Perez noted that he is a member of the Riverside County Transportation Commission which is involved with Item No. 15.

Agenda Items 1, 2, 4, 6, 8, 10 and 15 were withheld for comment and discussion.

MOVED BY NELSON, SECONDED BY ROBINSON, AGENDA ITEMS 3, 5, 7, 9, 11 THROUGH 14 AND 16 APPROVED AS RECOMMENDED, AND ADOPTING RESOLUTION NO. 18-14 AMENDING SCAQMD'S SALARY RESOLUTION TO ESTABLISH THE NEW CLASSIFICATION OF INFORMATION TECHNOLOGY MANAGER AT AN ANNUAL SALARY RANGE OF \$115,401 - \$152,230, BY THE FOLLOWING VOTE:

AYES: Benoit, Buscaino, Burke, Cacciotti, Lyou (*except Item #5*), McCallon, Nelson, Parker, Perez, Robinson, Rutherford and Solis

NOES: None

ABSTAIN: Lyou (*Item #5 only*)

ABSENT: Mitchell

24. Items Deferred from Consent Calendar

1. Approve Minutes of September 7, 2018 Board Meeting

Dr. Lyou noted that there was a typographical error on Page 5 of the minutes of the September 7, 2018 meeting.

MOVED BY LYOU, SECONDED BY CACCIOTTI, AGENDA ITEM 1 APPROVED WITH THE MODIFICATION TO THE MINUTES AS SET FORTH BELOW, BY THE FOLLOWING VOTE:

AYES: Benoit, Burke, Buscaino, Cacciotti, Lyou, McCallon, Nelson, Parker, Perez, Robinson, Rutherford and Solis

NOES: None

ABSENT: Mitchell

Amend Minutes of September 7, 2018 Board meeting as follows:

Page 5, second paragraph:

Supervisor Rutherford recused ~~himself~~ **herself** on Item No. 5 because of campaign contributions from Bogh Engineering.

2. Set Public Hearings November 2, 2018 to Consider Adoption of and/or Amendments to SCAQMD Rules and Regulations
 - A. Certify Final Mitigated Subsequent Environmental Assessment and Amend Rule 1135 - Emissions Of Oxides Of Nitrogen From Electricity Generating Facilities
 - B. Determine that Proposed Rule 1407.1 – Control of Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations Is Exempt from CEQA and Adopt Rule 1407.1
 - C. Certify Revised Final Environmental Assessment and Amend Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations
 - D. Determine that Updated 1-Hour Ozone Attainment Demonstration Is Exempt from CEQA and Adopt Updated 1-Hour Ozone Attainment Demonstration

Dr. Lyou asked staff for clarification on whether Board action would be necessary to reopen the public hearing for Rule 1469. Bayron Gilchrist, General Counsel, explained that a new public hearing notice was distributed for the November 2, 2018 Board meeting and it is considered a new hearing.

Dr. Lyou left the room during the discussion of Item Nos. 2, 4, 6, 10 and 15.

The following individuals addressed the Board on Agenda Item 2C.

Brian Ward, Metal Finishing Association of Southern California (MFASC)

Wesley Turnbow, MFASC

Asked that the set hearing for Rule 1469 be delayed to allow further discussions with staff and the Stationary Source Committee regarding the proposed tier structure and economic impacts to industry. They expressed concern regarding the short turnaround between the Stationary Source Committee meeting and the November Board meeting.

Mayor Benoit asked staff about the concerns expressed regarding the short time period between the Stationary Source Committee meeting and the Board meeting and if additional changes to the rule could be incorporated during that time.

Mr. Nastri explained that it would be at the discretion of the Stationary Source Committee to determine if additional time is needed to incorporate any warranted changes.

MOVED BY CACCIOTTI, SECONDED BY NELSON, AGENDA ITEM 2 APPROVED AS RECOMMENDED, BY THE FOLLOWING VOTE:

AYES: Benoit, Burke, Buscaino, Cacciotti, McCallon, Nelson, Parker, Perez, Robinson, Rutherford and Solis

NOES: None

ABSENT: Lyou and Mitchell

4. Approve Assignment of and Execute Contract for CNG Station at SCAQMD

Harvey Eder, Public Solar Power Coalition, encouraged the installation of a solar-electric station instead of a CNG station.

6. Amend Agreements and Transfer Funds to Develop and Demonstrate Zero Emission Capable Drayage Trucks

Mr. Eder noted that drayage trucks are not zero emission because they still use fossil fuels and recommended funding for solar-powered vehicles. He added that SB 100 supports complete solar-electric renewables by 2045.

MOVED BY ROBINSON, SECONDED BY CACCIOTTI, AGENDA ITEMS 4 AND 6 APPROVED AS RECOMMENDED, BY THE FOLLOWING VOTE:

AYES: Benoit, Burke, Buscaino, Cacciotti, McCallon, Nelson, Parker, Perez, Robinson, Rutherford and Solis

NOES: None

ABSTAIN: Lyou (*Item #6 only*)

ABSENT: Lyou (*Item #4 only*) and Mitchell

10. Recognize Revenue and Execute Contracts and MOUs to Replace Heavy-Duty Diesel Trucks

Mr. Eder expressed opposition to issuing contracts for natural gas heavy-duty trucks and expressed concerns regarding global warming due to fracking.

15. Approve Contract Awards as Approved by MSRC

Mr. Eder expressed support for Community Choice Aggregation and their efforts to provide greener and cost-effective energy choices to consumers.

MOVED BY BENOIT, SECONDED BY NELSON, AGENDA ITEMS 10 AND 15 APPROVED AS RECOMMENDED, BY THE FOLLOWING VOTE:

AYES: Benoit, Burke, Buscaino, Cacciotti, McCallon, Nelson, Parker, Perez, Robinson, Rutherford and Solis

NOES: None

ABSTAIN: Lyou

ABSENT: Mitchell

8. Approve Endowment to University of California Irvine to Support Graduate Student Scholarship Fund and Execute Contract to Develop Fuel Cell-Gas Turbine Hybrid Technology

Dr. Lyou noted support for the \$200,000 contract to develop fuel cell gas turbine hybrid technology and suggested that staff's recommendation regarding the \$1 million scholarship endowment be replaced with language to solicit proposals from universities through a competitive process.

Council Member Cacciotti concurred with Dr. Lyou and asked whether two scholarship endowments of \$500,000 would be possible rather than a single award of \$1 million.

Dr. Matt Miyasato, DEO/Science and Technology Advancement, explained that the University of California Irvine (UCI) proposed to create a \$1 million energy visionary scholarship and noted that staff is open to researching other options through a proposal process.

Supervisor Solis expressed support for the amendment to solicit proposals from other universities.

Council Member Buscaino commented on the long-term relationship the District has had with UCI and how well the University aligns with the vision and goals of the District. He added support for partnering with other institutions in the future.

Dr. Lyou inquired if there are funds available for endowments at other universities.

Mr. Nastri noted that additional funding could be awarded to other universities and the Board could move forward to award UCI the currently proposed funds. Staff could bring additional proposals to the Board in the future. The District has been working closely with UCI for a number of years and have hired a number of their graduates as staff.

Dr. Parker asked about the selection criteria for the student recipients and goals for the endowments, and Council Member Robinson asked about the previous award process with University of California Riverside (UCR) and suggested the development of a policy to address future requests.

Dr. Miyasato responded that the student awardees would be selected by the District and other co-funding partners and the intent is to select those who most closely align with District goals. He noted that the UCR endowment was also an unsolicited proposal and since CARB had selected Riverside as the location of their new laboratory there was an additional incentive to provide the endowment to UCR at that time.

Council Member Cacciotti recommended that solicitations for endowments be advertised in each county within the District.

MOVED BY LYOU, SECONDED BY CACCIOTTI, AGENDA ITEM 8 APPROVED AUTHORIZING THE EXECUTION OF \$200,000 CONTRACT WITH UCI FOR DEVELOPMENT OF SOFC-GT HYBRID TECHNOLOGY AND DIRECTING STAFF TO SOLICIT PROPOSALS FROM LOCAL UNIVERSITIES TO AWARD A \$1 MILLION ENDOWMENT(S) OF SUPPORT TO A GRADUATE STUDENT SCHOLARSHIP FUND(S), BY THE FOLLOWING VOTE:

AYES: Benoit, Burke, Buscaino, Cacciotti, Lyou, McCallon, Nelson, Parker, Perez, Robinson, Rutherford and Solis

NOES: None

ABSENT: Mitchell

The Chairman announced that a request to address the Board was received on Item 16. Dr. Lyou moved to reopen Item 16 to allow public comment; Councilmember Cacciotti seconded the motion. There being no opposition, Item 16 was reopened for consideration.

16. Approve Test Method Guidance Document for Rule 1168 – Adhesive and Sealant Applications

Rita Loof, RadTech International, expressed concern that the ASTM test method for thin-film products, which are low VOC products, could not be used for enforcement. Staff recognizes the ASTM method in estimating VOC but not for compliance verification, and would work on a method determination in the future when known products become available. She expressed concern that the guidance document did not include the cost of method development and that lack of an allowable test method for enforcement of thin-film products could lead to potential confusion and enforcement actions.

Dr. Parker commented that it was his understanding that flexibility was provided in the rule to allow thin-film industry to present scientific methods that could accurately measure VOCs.

Ms. Loof responded that during the development of the technical guidance document staff concluded that an approved alternative test method did not exist. In the interim, staff would allow product formulation data for enforcement purposes if products were commercially available. However, the SCAQMD could not use the test method for enforcement purposes. She expressed concern about the lack of certainty because the technical guidance document does not specify what testing method will be used for enforcement purposes for thin-film products.

Dr. Lyou asked staff to address the concerns expressed by the speaker.

Dr. Philip Fine, DEO/Planning, Rule Development and Area Sources, explained that the guidance document recognizes that no test method currently exists and that staff is committed to work on a test method for enforcement purposes.

MOVED BY BENOIT, SECONDED BY LYOU,
AGENDA ITEM 16 APPROVED AS
RECOMMENDED, BY THE FOLLOWING
VOTE:

AYES: Benoit, Burke, Buscaino, Cacciotti,
Lyou, McCallon, Nelson, Parker,
Perez, Robinson, Rutherford and
Solis

NOES: None

ABSENT: Mitchell

Items 17 through 23 – Information Only/Receive and File

17. Legislative, Public Affairs and Media Report
18. Hearing Board Report
19. Civil Filings and Civil Penalties Report
20. Lead Agency Projects and Environmental Documents Received by SCAQMD
21. RFPs/RFQs Scheduled for Release in October

- 22. Rule and Control Measure Forecast
- 23. Status Report on Major Ongoing and Upcoming Projects for Information Management

BOARD CALENDAR

- 25. Administrative Committee
- 26. Legislative Committee
- 27. Mobile Source Committee
- 28. Stationary Source Committee
- 29. Technology Committee
- 30. Mobile Source Air Pollution Reduction Review Committee
- 31. California Air Resources Board Monthly Report

Item 31 was pulled from consideration by staff.

MOVED BY LYOU, SECONDED BY ROBINSON, AGENDA ITEMS 17 THROUGH 30, APPROVED AS RECOMMENDED, RECEIVING AND FILING THE COMMITTEE, AND MSRC REPORTS, BY THE FOLLOWING VOTE:

AYES: Benoit, Burke, Buscaino, Cacciotti, Lyou, McCallon, Nelson, Parker, Perez, Robinson, Rutherford and Solis

NOES: None

ABSENT: Mitchell

PUBLIC HEARINGS

32. Certify Final Subsequent Environmental Assessment and Amend Rule 2001 – Applicability and Rule 2002 – Allocations for Oxides of Nitrogen (NOx) and Oxides of Sulfur (SOx)

Tracy Goss, Planning and Rules Manager, gave the staff presentation on Item No. 32.

Council Member Robinson asked how many facilities could exit without New Source Review (NSR) issues. Mr. Goss responded that about 9 or 10 facilities would currently be able to do so.

The public hearing was opened and the following individuals addressed the Board on Item 32.

Frances Keeler, Clyde & Company, on behalf of Valero, expressed concerns about the approach being taken to transition RECLAIM rule by rule results in an over-layering of BARCT that results in disproportionate impacts on RECLAIM facilities compared to other sources. She added that the amendments are a significant change to the RECLAIM program and a programmatic analysis should be conducted prior to adopting any rules. (Submitted Written Comments)

Bridget McCann, Western States Petroleum Association, expressed concerns that Rules 2001 and 2002 are not ready for amendment due to unresolved issues with NSR and the lack of a programmatic CEQA analysis. (Submitted Written Comments)

Janet Whittick, California Council for Environmental and Economic Balance, expressed concerns about moving forward on rule development for RECLAIM without first resolving NSR issues and addressing RTCs for facilities exiting RECLAIM. She suggested bundling rules together for Board approval after the NSR issues have been resolved.

Mr. Eder expressed support for solar power plants and thermal storage technology and expressed concerns about premature deaths due to climate change.

There being no further public testimony on this item, the public hearing was closed.

Dr. Lyou asked about the ability of RECLAIM facilities who are already at BARCT to exit the RECLAIM program and asked staff to respond to the public comments.

Dr. Fine explained that the proposed amendments to the rules will allow facilities to exit the RECLAIM program once BARCT rules are adopted, which provide regulatory certainty and an optional flexible path to remain in RECLAIM until the issues with NSR are resolved. The RECLAIM transition is complex and bundling rule amendments could prove difficult because many of the rules will be controversial with inherent complexities. Staff has been working diligently to address the issues and bring rule amendments to the Board by mid-2019.

Supervisor Nelson suggested that staff provide a monthly update on NSR progress at the Stationary Source Committee meeting. Chairman Burke concurred.

Supervisor Rutherford expressed concerns about the lack of a programmatic analysis and the need for a socioeconomic impact report for the RECLAIM transition.

Barbara Baird, Chief Deputy Counsel, explained that a programmatic CEQA and socioeconomic analysis of the RECLAIM control measure was completed for the 2016 AQMP. The sunseting of RECLAIM was addressed in the October version, which was the version analyzed in the final EIR. The amendments under consideration would allow facilities to exit RECLAIM on a voluntary basis. In the months ahead, staff will continue rule development of the specific BARCT rules that will not change based on what happens with NSR or other aspects of the RECLAIM program.

MOVED BY LYOU, SECONDED BY CACCIOTTI, AGENDA ITEM NO. 32 APPROVED AS RECOMMENDED, ADOPTING RESOLUTION NO. 18-15 CERTIFYING THE FINAL SUBSEQUENT ENVIRONMENTAL ASSESSMENT FOR PROPOSED AMENDED RULE 2001 — APPLICABILITY, AND PROPOSED AMENDED RULE 2002 — ALLOCATIONS FOR OXIDES OF NITROGEN (NO_x) AND OXIDES OF SULFUR (SO_x) AND AMENDING RULE 2001 APPLICABILITY, AND RULE 2002 — ALLOCATIONS FOR OXIDES OF NITROGEN (NO_x) AND OXIDES OF SULFUR (SO_x) AND DIRECTING STAFF TO PROVIDE STATUS REPORTS AT EACH REGULAR MEETING OF THE STATIONARY SOURCE COMMITTEE ON THE PROGRESS OF RESOLVING THE NEW SOURCE REVIEW ISSUES FOR THE TRANSITION OF RECLAIM TO A COMMAND-AND-CONTROL REGULATORY STRUCTURE, BY THE FOLLOWING VOTE:

AYES: Benoit, Burke, Buscaino, Cacciotti,
Lyou, Nelson, Parker, Perez,
and Solis

NOES: McCallon, Rutherford and
Robinson,

ABSENT: Mitchell

PUBLIC COMMENT PERIOD – (Public Comment on Non-Agenda Items, Pursuant to
Government Code Section 54954.3)

Bill LaMarr, California Small Business Alliance, expressed concerns about the representation of small business owners on the steering committees for AB 617. He encouraged inclusion of trade associations on the committee noting that many small business owners join trade associations because they need to run their businesses and lack the time to participate in meetings.

Thomas Jelenic, Pacific Merchant Shipping Association (PMSA), stated that he attended the AB 617 kickoff meeting in Wilmington and was surprised to learn that organizations such as PMSA were not considered sufficiently local to serve on the Steering Committee but the Natural Resources Defense Council, a national organization, would be able to serve on the committee. He noted that PMSA and its members work in the communities of Wilmington, Long Beach and San Pedro and can positively contribute to the work of the Steering Committee. He suggested that staff work with CARB to include industry organizations on the committee.

Council Member Buscaino commented on the importance of including local residents and local businesses on the committees in order to ensure adequate representation. He asked if the filing deadline of October 12 could be extended to allow more individuals to apply.

Mr. Nastri explained that the guidance from CARB is that representation on the steering committees be predominantly local residents. He noted that the guidelines are still under review and that representation from local planning agencies and elected officials is important as well. Local businesses and industry representatives are welcome to apply and all parties will be able to provide input regardless if they are committee members. Based on the timeline set by the Legislature, the October 12 deadline is necessary to keep the projects on track. He added this first deadline pertained to the communities of Wilmington/West Long Beach/Carson. San Bernardino/Muscoy and East Los Angeles Neighborhoods/Boyle Heights have their own timelines.

In response to Supervisor Rutherford's inquiry regarding the committee selections, Mr. Nastri explained that staff would review the applications and determine the committee members.

Mayor McCallon noted the importance of allowing trade associations to participate since small business owners are operating their businesses and may not be able to attend committee meetings.

Mr. Eder commented on the recent developments with Tesla and expressed concerns regarding drug-resistant antibiotics from natural gas. He also stated that premature deaths from air pollution are underestimated.

CLOSED SESSION

The Board recessed to closed session at 10:50 a.m., pursuant to Government Code sections:

CONFERENCE WITH LEGAL COUNSEL – EXISTING LITIGATION

- 54956.9(a) and 54956.9(d)(1) to confer with its counsel regarding pending litigation which has been initiated formally and to which the SCAQMD is a party. The actions are:

Communities for a Better Environment v. South Coast Air Quality Management District, Los Angeles Superior Court Case No. BS169841; Safe Fuel and Energy Resources California, et al. v. South Coast Air Quality Management District, Los Angeles Superior Court Case No. BS169923 (Tesoro);

Fast Lane Transportation, Inc., et al. v. City of Los Angeles, et al., Court of Appeal, First Appellate District, Case No. A148993 (formerly Contra Costa County Superior Court Case No. MSN14-0300) (SCIG) (published name: City of Long Beach v. City of Los Angeles, 19 Cal.App.5th 465 (2018); and

Evelyn Miramontez v. SCAQMD, Electronic Adjudication Management System Case No. #ADJ302655 (Workers' Comp. Case);

CONFERENCE WITH LEGAL COUNSEL – ANTICIPATED LITIGATION

- 54956.9(d)(2) to confer with its counsel because there is a significant exposure to litigation against the SCAQMD (one case)—Letter from Steven J. Olson, O'Melveny & Myers LLP, on behalf of ExxonMobil Corporation, dated August 22, 2018.

CONFERENCE WITH NEGOTIATORS

- 54957.6 to confer regarding upcoming labor negotiations with designated representatives regarding represented employee salaries and benefits or other mandatory subjects within the scope of representation [Negotiator: A. John Olvera; Represented Employees: SCAQMD Professional Employees Association].

Following closed session, Mr. Gilchrist announced that a report of any reportable actions taken in closed session will be filed with the Clerk of the Board's office and made available to the public upon request.

ADJOURNMENT

There being no further business, the meeting was adjourned by Mr. Gilchrist at 11:55 a.m.

The foregoing is a true statement of the proceedings held by the South Coast Air Quality Management District Board on October 5, 2018.

Respectfully Submitted,

Denise Garzaro
Clerk of the Boards

Date Minutes Approved: _____

Dr. William A. Burke, Chairman

ACRONYMS

AQMP = Air Quality Management Plan
BARCT = Best Available Retrofit Control Technology
CARB = California Air Resources Board
CEQA = California Environmental Quality Act
CNG = Compressed Natural Gas
DEO = Deputy Executive Officer
EIR = Environmental Impact Report
FY = Fiscal Year
MOU = Memorandum of Understanding
MSRC = Mobile Source (Air Pollution Reduction) Review Committee
NOx = Oxides of Nitrogen
NSR = New Source Review
RECLAIM = Regional Clean Air Incentives Market
RFP = Request for Proposals
RFQ = Request for Quotations
RTC = RECLAIM Trading Credit
SOx = Oxides of Sulfur
SDFC-GT = Solid Oxide Fuel Cell-Gas Turbine
U.S. EPA = United States Environmental Protection Agency
VOC = Volatile Organic Compound

BOARD MEETING DATE: November 2, 2018

AGENDA NO. 2

PROPOSAL: Set Public Hearings December 7, 2018 to Consider Adoption of and/or Amendments to SCAQMD Rules and Regulations

A. Certify the Final Environmental Assessment and Adopt Rule 1118.1 - Control of Emissions from Non-Refinery Flares
Proposed Rule 1118.1 applies to RECLAIM and non-RECLAIM facilities that operate non-refinery flares located at landfills, wastewater treatment plants, oil and gas production facilities, organic liquid loading stations, and tank farms. The proposed rule will implement, in part, the 2016 AQMP Control Measure CMB-03 - Emission Reductions from Non-Refinery Flares and facilitate the transition of the NO_x RECLAIM program to a command-and-control regulatory structure. Proposed requirements include NO_x and VOC emission limits that reflect BARCT standards and a capacity threshold. Additionally, Proposed Rule 1118.1 establishes provisions for source testing, monitoring, reporting, recordkeeping, and provides exemptions for low-use and low-emitting flares. This action is to adopt the Resolution: 1) Certifying the Final Environmental Assessment for Proposed Rule 1118.1 - Control of Emissions from Non-Refinery Flares, and 2) Adopting Proposed Rule 1118.1 - Control of Emissions from Non-Refinery Flares. (Reviewed: Stationary Source Committee, October 19, 2018)

B. Certify the Final Subsequent Environmental Assessment and Amend Rules 1146, 1146.1, 1146.2 and Adopt Rule 1100
The adoption Resolution of the 2016 AQMP directed staff to achieve additional NO_x emission reductions and transition the RECLAIM program to a command-and-control regulatory structure as soon as practicable. Proposed Amended Rules 1146, 1146.1 and 1146.2 update NO_x emission limits for boilers, heaters, and steam generators applicable to these rules. The revised NO_x emission limits represent BARCT and apply to RECLAIM and non-RECLAIM facilities. Proposed Rule 1100 establishes the compliance schedule for equipment at RECLAIM facilities that are subject to Proposed Amended Rules 1146 and

1146.1. PAR 1146.2 includes the compliance schedule for equipment regulated under this rule. This action is to adopt the Resolution: 1) Certifying the Final Subsequent Environmental Assessment for Proposed Amended Rules 1146 - Emissions of Oxides of Nitrogen from Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters; 1146.1 - Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; 1146.2 - Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters; and Proposed Rule 1100 - Implementation Schedule for NO_x Facilities; 2) Amending Rules 1146, 1146.1, and 1146.2; and 3) Adopting Rule 1100. (Reviewed: Stationary Source Committee, April 20 and October 19, 2018)

The complete text of the proposed rules and amendments, staff reports and other supporting documents will be available from the SCAQMD's Public Information Center, (909) 396-2001 and on the Internet (www.aqmd.gov) as of November 7, 2018.

RECOMMENDED ACTION:

Set Public Hearings December 7, 2018 to Adopt Rules 1100 and 1118.1 and Amend Rules 1146, 1146.1 and 1146.2.

Wayne Natri
Executive Officer

dg

BOARD MEETING DATE: November 2, 2018

AGENDA NO. 3

PROPOSAL: Execute Contract for Expansion of Hydrogen Fueling Station

SYNOPSIS: The University of California Irvine (UCI) has requested cofunding for the expansion of its hydrogen fueling station to add additional capacity including more fueling positions to serve the increasing number of fuel cell cars and buses utilizing the station. The MSRC has approved \$1 million in cost-share and the CEC is considering providing \$400,000 in cost-share for this \$1.8 million project. This action is to execute a contract with UCI for expansion of their hydrogen fueling station in an amount not to exceed \$400,000 from the Clean Fuels Program Fund (31).

COMMITTEE: Technology, October 19, 2018; Recommended for Approval

RECOMMENDED ACTION:

Authorize the Chairman to execute a contract with UCI to cost-share construction and operation of the expansion of their hydrogen vehicle fueling station to support fueling fuel cell cars and buses in an amount not to exceed \$400,000 from the Clean Fuels Program Fund (31).

Wayne Natri
Executive Officer

MMM:FM:NB:LHM

Background

The University of California Irvine (UCI) has been and continues to be instrumental in hydrogen related research for more than two decades. The National Fuel Cell Research Center (NFCRC), located at UCI, was dedicated in 1998 by DOE and CEC to: 1) accelerate the development and deployment of fuel cell technology; 2) enable the stationary and mobile fuel cell market; 3) address market hurdles; 4) convene government agencies, businesses and academia to develop effective public-private alliances, and 5) provide leadership in the preparation of educational materials and programs to help develop the national work force in fuel cell technology. The NFCRC focuses on both mobile and stationary fuel cells, the development of a hydrogen fueling

infrastructure, and the interface between stationary fuel cell technology, transportation and the emerging hydrogen economy.

The UCI station has been in operation since January 2003, supporting research and fuel cell vehicle development. In 2007, it became the first dual-pressure station operating in the U.S. with public access for fuel cell vehicle fueling. The station has been upgraded over the years, opening as a retail station for fueling passenger cars in November 2015 and refueling buses at night, including fleet buses for the Orange County Transit Authority (OCTA). For the past year, the station has operated at its design throughput capacity, while customer demand continues to increase, resulting in an urgent need for expansion of capacity and fueling positions. Shifting to liquid hydrogen deliveries will strengthen supply chains, potentially reducing the price of dispensed hydrogen.

On April 6, 2018, the MSRC released Program Opportunity Notice #PON2018-02, "Hydrogen Infrastructure Partnership Program." At its September 20, 2018 meeting, the MSRC approved UCI's funding request for its station expansion project in the amount of \$1,000,000. CEC staff is working with UCI on a revenue agreement to fund the project in the amount of \$400,000, which the CEC will consider on November 8, 2018. The UCI hydrogen station expansion project provides a unique public-private partnership opportunity to enable ongoing research on a larger capacity retail hydrogen station serving retail and transit customers.

Proposal

This action is to execute a contract with UCI for expansion of their hydrogen fueling station from the current capacity of 180 kilograms per day (kg/day) of delivered gaseous hydrogen to in excess of 800 kg/day of delivered liquid hydrogen and from one to four fueling positions, with both 350 bar and 700 bar hydrogen. On-site storage will also increase, further strengthening the hydrogen supply chain, and limiting impacts to the consumers. Delivered hydrogen is expected to be at least 33 percent renewable, in compliance with SB 1505 requirements.

In addition to serving more light-duty vehicles, buses will continue to be scheduled for fueling at night to minimize impact on light-duty customers. Expansion of the station will enable UCI to increase the number of fuel cell buses serving the campus, as well as provide support, if needed, for the increased number of fuel cell buses planned for deployment by OCTA, leading to a more robust hydrogen fueling network.

UCI will solicit competitive bids and plans to construct the station expansion in 2019. As stations grow in size, continued public research is needed to evaluate multiple aspects. Fueling protocols, dispenser design and station throughput and reliability are just some examples that can be evaluated by UCI. UCI intends to report at least three years of operating data through the National Renewable Energy Laboratory.

Sole Source Justification

Section VIII.B.2. of the Procurement Policy and Procedure identifies provisions under which a sole source award may be justified. This request for sole source award is made under provision B.2.d.: Other circumstances exist which in the determination of the Executive Officer require such waiver in the best interest of the SCAQMD. Specifically, these circumstances are B.2.d.(8): Research and development efforts with educational institutions or nonprofit organizations.

Benefits to SCAQMD

SCAQMD supports hydrogen and fuel cell technologies and recognizes that light-, medium- and heavy-duty vehicles must achieve zero or near-zero emissions for the region to meet state and federal air quality attainment standards. Projects to support implementation of various clean fuel vehicle and infrastructure programs are included in the *Technology Advancement Office Clean Fuels Program 2018 Plan Update* under the category of “Hydrogen and Fuel Cell Technologies and Infrastructure.” This project will help ensure that sufficient hydrogen infrastructure is available to support early-market introduction of zero emissions fuel cell vehicles and further study issues related to co-locating hydrogen fueling for light-, medium- and heavy-duty vehicles and larger volume stations supported by gaseous and liquid hydrogen storage.

Resource Impacts

SCAQMD’s support of the UCI Hydrogen Station Expansion Project will not exceed \$400,000 from the Clean Fuels Program Fund (31). Project partners and proposed funding are as follows:

Project Partner	Proposed Funding	Percent
MSRC	\$1,000,000	56
CEC*	\$400,000	22
SCAQMD (<i>requested</i>)	\$400,000	22
Project Total	\$1,800,000	100

*pending approval at CEC’s 11/8/18 Business Meeting

Sufficient funds are available from the Clean Fuels Program Fund, established as a special revenue fund resulting from the state-mandated Clean Fuels Program. The Clean Fuels Program, under Health and Safety Code Sections 40448.5 and 40512 and Vehicle Code Section 9250.11, establishes mechanisms to collect revenues from mobile sources to support projects to increase the utilization of clean fuels, including the development of the necessary advanced enabling technologies. Funds collected from motor vehicles are restricted, by statute, to be used for projects and program activities related to mobile sources that support the objectives of the Clean Fuels Program.

BOARD MEETING DATE: November 2, 2018

AGENDA NO. 4

PROPOSAL: Develop and Demonstrate Zero Emissions Heavy-Duty Trucks, Freight Handling Equipment, EV Infrastructure and Renewable Energy

SYNOPSIS: SCAQMD received an award of \$44,839,686 to develop and demonstrate zero emissions heavy-duty trucks, freight handling equipment, EV infrastructure and renewable energy under CARB's Low Carbon Transportation Greenhouse Gas Reduction Fund (GGRF) Investments. Volvo Group North America and its project partners are providing \$41,855,308. These actions are to recognize \$44,839,686 and transfer \$14,000,000 (\$4,000,000 for SCAQMD's project cost-share and \$10,000,000 for temporary advance of funds) from the Clean Fuels Program Fund (31) into the GHG Reduction Projects Special Revenue Fund (67). This action is to also execute contracts in an amount not to exceed \$46,688,250 to implement this project. Out of the \$2,151,436 allocated in CARB's grant for administrative expenses, these actions are to reimburse the General Fund up to \$1,972,936 from Fund 67 for administrative costs and transfer \$178,500 from Fund 67 to Fund 31 to execute a contract modification for administrative project implementation support. Finally, these actions are to authorize the Executive Officer to execute a contract modification and redistribute administrative funds to augment project funds on an as-needed basis.

COMMITTEE: Technology, October 19, 2018; Recommend for Approval

RECOMMENDED ACTIONS:

1. Recognize revenue, upon receipt, from CARB up to \$44,839,686 (\$42,688,250 for project costs and \$2,151,436 for administrative costs) into the GHG Reduction Projects Special Revenue Fund (67) for a zero and near-zero emissions freight facilities (ZANZEFF) project to develop and demonstrate zero emissions heavy-duty trucks, freight handling equipment, EV infrastructure and renewable energy.
2. Transfer \$4,000,000 from the Clean Fuels Program Fund (31) into the GHG Reduction Projects Special Revenue Fund (67) for SCAQMD's project cost-share.

3. Authorize the Chairman to execute contracts from the GHG Reduction Projects Special Revenue Fund (67) with the following entities:
 - a. Volvo Group North America, LLC, to develop and demonstrate zero emissions trucks, freight handling equipment, EV infrastructure and renewable energy in an amount not to exceed \$45,591,592; and
 - b. University of California, Riverside (UCR) CE-CERT to perform data collection, analysis and reporting in an amount not to exceed \$1,096,658.
4. Transfer up to \$10,000,000 as a temporary advance of funds, as needed, subject to availability of funds, from the Clean Fuels Program Fund (31) to the GHG Reduction Projects Special Revenue Fund (67).
5. Reimburse the General Fund up to \$1,972,936 from the GHG Reduction Projects Special Revenue Fund (67) for administrative costs necessary to implement the above-referenced project.
6. Authorize the Executive Officer to amend a Clean Fuels Connection, Inc., contract in an amount not to exceed \$178,500 from the GHG Reduction Projects Special Revenue Fund (67) for administrative project implementation support necessary to carry out the above-referenced project.
7. Authorize the Executive Officer to redistribute administrative funds to augment project funds with Volvo Group North America, on an as-needed basis, to meet project goals, contingent upon CARB approval if necessary.

Wayne Nasti
Executive Officer

MMM:FM:NB:JI

Background

On July 19, 2018, SCAQMD submitted a proposal in response to CARB's solicitation under the Low Carbon Transportation Greenhouse Gas Reduction Fund (GGRF) Investments for zero and near-zero emissions freight facilities (ZANZEFF) projects. On September 6, 2018, CARB advised that SCAQMD had received a \$44,839,686 ZANZEFF award. SCAQMD has partnered with Volvo Group North America, LLC, (Volvo) to conduct a freight facility project that will realize commercialization and market penetration of heavy-duty battery electric vehicles (HDBEVs) in California and throughout North America. Volvo, a major heavy-duty original equipment manufacturer, will be partnering with some of the top fleet and industry leaders to reduce emissions at warehouses and freight facilities in some of the state's most disadvantaged communities using zero emissions on- and off-road equipment and warehouse energy efficiency improvements. This project is scalable and replicable to reduce emissions throughout the goods movement system. The project seeks to achieve emissions reductions and deploys both pre-commercial and commercial zero emissions technologies, including Volvo's North American market introduction of Class 8 battery electric trucks.

Proposal

These actions are to recognize revenue from CARB up to \$44,839,686 (\$42,688,250 for project costs and \$2,151,436 for administrative costs) for a ZANZEFF award and to transfer \$4,000,000 for SCAQMD's project cost-share from the Clean Fuels Program Fund (31) into the GHG Reduction Projects Special Revenue Fund (67) to develop and demonstrate zero emissions heavy-duty trucks, freight handling equipment, EV infrastructure and renewable energy. This action is to also execute contracts with Volvo and UCR CE-CERT for the following:

Volvo Zero Emissions Truck and Facilities Project

The project described below is based on Volvo's proposal and the specifications as outlined below may change as the designs are finalized. The Volvo Low Impact Green Heavy Transport Solutions (LIGHTS) project will develop and demonstrate the following for deployment at up to five sites, currently being considered within the cities of Chino, Fontana, La Mirada, Ontario and Placentia:

- Up to 23 on-road pre-commercial and commercial HDBEVs operating in and around disadvantaged communities;
- Up to 29 off-road BEVs used to load and unload containers and freight at warehouses and freight facilities;
- Up to 58 nonproprietary chargers both DC fast charging and Level 2 electric vehicle supply equipment (EVSE) with SAE approved connectors; and
- Approximately 1,860,462 watts of solar power.

The LIGHTS project includes a total of up to 23 HDBEVs and will begin with up to 8 multiple-configuration, pre-commercial truck deployments. The first three demonstration trucks will not be fully approved for U.S. operation and will therefore operate under CARB exemption waivers. The subsequent 5 demonstration units as well as up to 15 commercial/pre-commercial vehicles, will be approved for the U.S. market. Volvo will begin commercial introduction of the HDBEV rigid trucks and use mobile fast charging for fleets throughout the state to gain freight experience with battery electric trucks.

Based on Volvo's proposal, the three electric truck configurations delivered are anticipated to be equipped with the following driveline items:

- Two electric motors with 370 kW max power (260 kW continuous power) with a Volvo two-speed transmission.
- Average electric range is 170 miles depending on drive cycle. Throughout the course of this project, vehicles will be able to go 150-350 miles.
- Lithium-ion batteries for energy storage will have a minimum capacity of 200 kWh for the first two demonstrators, later increasing to four and then six battery pack configurations for a capacity of 320 kWh.

Volvo will deliver new lithium-ion battery chemistries for increased electrical energy densities at reduced cost; self-learning control algorithms which optimize energy usage in EVs; smart technologies to improve vehicle uptime and deployment of long-term rentals of HDBEVs to fleets throughout the state to accelerate adoption. Additionally, Volvo will coordinate the development of energy management systems to optimize vehicle charging by balancing the requirements of the vehicle, facility and grid. Vehicle charging will use SAE J1772 connectors for Level 2 charging and SAE J3068 or SAE CCS connectors for fast charging. Charging infrastructure includes 150 kW DC or 22 kW AC for the first two demonstration units and 250kW DC or 44 kW AC for subsequent and commercialized units. The freight facility sites will each feature standards-based, open architecture and interoperable charging infrastructure for off-road electric equipment, on-road electric trucks and employee workplace charging. Two standards-based, open architecture and interoperable charging stations along a key freight corridor for use by project fleets and the public will also be deployed. Up to 58 chargers will be installed ranging from 7.2 kW up to 150 kW.

UCR CE-CERT Data Collection Project

UCR CE-CERT will deploy a multiple-method approach to ensure all project data collection, which includes mobile logging, stationary logging, emissions testing and innovation analysis, is performed to CARB requirements. This will be done via hand recording and photos, data loggers, fleet and vehicle data records, testing results and interviews with end users. UCR CE-CERT will enhance its HDBEV guidance document to include tests targeted for Class 8, 60,000 pound gross vehicle weight rating and heavy-duty trucks utilized for warehouse operations. Performance testing will utilize UCR CE-CERT's heavy-duty chassis dynamometer for evaluation of two test vehicles (Class 8, rigid and tractor). To set a baseline and establish the benefit of the new vehicles, UCR CE-CERT will also collect emissions data from three conventional Volvo heavy-duty diesel trucks during normal in-service operation for up to three months using data loggers and the portable emissions measurement system (PEMS). Similarly, using the heavy-duty Hioki power meter system, UCR CE-CERT will verify power measurement system performance. Other responsibilities include quality assurance and control, secure and sanitize vehicle data, and conduct independent evaluations of truck electric range and battery degradation. UCR CE-CERT will oversee data collection of all other equipment, including off-road equipment, charging infrastructure and solar arrays.

Contract Amendment

Science & Technology Advancement occasionally contracts with experts and in-the field practitioners for technical and project implementation support. One contractor chosen through a competitive process is Clean Fuel Connection, Inc. (CFCI). This action is to authorize the Executive Officer to amend a contract with CFCI for \$178,500 from the GHG Reduction Projects Special Revenue Fund (67) for technical and project implementation support necessary to implement the above-referenced project.

Finally, these actions are to transfer up to \$10 million as a temporary advance of funds from the Clean Fuels Program Fund (31) to the GHG Reduction Projects Special Revenue Fund (67) to provide cash flow for contractor payments given CARB's cost-reimbursement process; to reimburse the General Fund up to \$1,972,936 from the GHG Reduction Projects Special Revenue Fund (67) for administrative costs necessary to implement the above-referenced projects; and to authorize the Executive Officer to redistribute administrative funds to augment project funds with Volvo Group North America, on an as-needed basis, to meet project goals, contingent upon CARB approval if necessary.

Sole Source Justification

Section VIII.B.2. of the Procurement Policy and Procedure identifies four major provisions under which a sole source award may be justified. The request for sole source awards for the Volvo contract is made under the provisions B.2.c.(1): The unique experience and capabilities of the proposed contractor or contractor team; B.2.c.(2): The project involves the use of proprietary technology; and B.2.d.(1): Projects involving cost-sharing by multiple sponsors. Volvo has extensive knowledge and experience in advanced EV technologies that are needed to successfully complete this project. The manufacturer will utilize their proprietary technologies in the development of pre-commercial and commercial heavy-duty trucks to improve system reliability, efficiency and costs over previous generations. This demonstration project will be cost-shared by Volvo and other project partners as discussed in the Resource Impacts section. The request for sole source award for the UCR CE-CERT contract is made under the provisions B.2.d.(6): Projects requiring compatibility with existing specialized equipment; and B.2.d.(8): Research and development efforts with educational institutions or nonprofit organizations. UCR CE-CERT, an educational institution, will utilize its heavy-duty chassis dynamometer for evaluation of test vehicles.

Benefits to SCAQMD

Projects to support development and demonstration of various electric container and freight transport technologies are included in the *Technology Advancement Office Clean Fuels Program 2018 Plan Update* under the categories of "Develop and Demonstrate Electric and Hybrid Vehicles" and "Develop and Demonstrate Electric Container Transport Technologies". This project is to develop and demonstrate zero emissions heavy-duty trucks, freight handling equipment, EV infrastructure and renewable energy. Successful demonstration of such projects will contribute to the attainment of national ambient air quality standards in the South Coast Air Basin by eliminating PM and NOx emissions from replaced diesel heavy-duty trucks, off road freight handling equipment and EV infrastructure powered by renewable energy.

Resource Impacts

CARB’s GGRF award to SCAQMD in the amount of \$44,839,686 is broken down into \$42,688,250 for project expenses and \$2,151,436 for administrative expenses. SCAQMD’s project cost-share will not exceed \$4,000,000. Further, SCAQMD’s contract with Volvo will not exceed \$45,591,592 and the contract with UCR CE-CERT will not exceed \$1,096,658 from the GHG Reduction Projects Special Revenue Fund (67). Reimbursement of the General Fund for administrative costs will not exceed \$1,972,936. The contract amendment with CFCI will not exceed \$178,500 from Fund 67 and will be taken from the \$2,151,436 for administrative expenses provided under the ZANZEFF Grant.

The funding sources and amounts for each project are detailed in the following table:

Proposed Volvo Project Costs

Source	Amount	Percent
CARB	\$41,591,592	49%
Volvo and partners (cash & in-kind)	\$41,655,308	46%
SCAQMD (<i>requested</i>)*	\$4,000,000	5%
Total	\$87,246,900	100%

*If SCE’s Make Ready Project funds are approved by the CPUC, this amount may be reduced.

Proposed UCR CE-CERT Project Costs

Source	Amount	Percent
CARB	\$1,096,658	85%
UCR CE-CERT	\$200,000	15%
Total	\$1,296,658	100%

Sufficient funds are available in the Clean Fuels Program Fund (31). The Clean Fuels Program Fund was established as a special revenue fund resulting from the state-mandated Clean Fuels Program. The Clean Fuels Program, under Health and Safety Code Sections 40448.5 and 40512 and Vehicle Code Section 9250.11, establishes mechanisms to collect revenues from mobile sources to support projects to increase the utilization of clean fuels, including the development of the necessary advanced enabling technologies. Funds collected from motor vehicles are restricted, by statute, to be used for projects and program activities related to mobile sources that support the objectives of the Clean Fuels Program.

Sufficient funds will be available in GHG Reduction Projects Special Revenue Fund (67) to execute the Volvo and UCR CE-CERT contracts once the CARB funds in the amount of \$44,839,686 are recognized into Fund 67, along with the transfer of \$4,000,000 from the Clean Fuels Program Fund (31) for SCAQMD’s project cost-share. The transfer of up to \$10,000,000 as a temporary advance of funds from the Clean Fuels Program Fund (31) to the GHG Reduction Projects Special Revenue Fund (67) is to provide cash flow due to CARB’s cost-reimbursement process.

BOARD MEETING DATE: November 2, 2018

AGENDA NO. 5

PROPOSAL: Approve Awards for Heavy-Duty Diesel Drayage Truck Replacement Projects

SYNOPSIS: On November 3, 2017, the Board recognized \$1,050,000 from U.S. EPA's 2017 Diesel Emissions Reduction Act (DERA) and issued a Program Announcement to solicit applications for the replacement of heavy-duty diesel drayage trucks with natural gas trucks as well as the transfer of the replaced diesel trucks to Washington State to replace older dirtier diesel trucks, which would then be scrapped. This action is to approve awards to replace 2012 or newer heavy-duty diesel drayage trucks with near-zero NOx emissions natural gas trucks in an amount not to exceed \$1,000,000 from U.S. EPA's 2017 DERA Grant in the Advanced Technology, Outreach and Education Fund (17).

COMMITTEE: Technology, October 19, 2018; Recommended for Approval

RECOMMENDED ACTION:

Authorize the Executive Officer to execute contracts with one or more of the following entities to replace up to ten 2012 or newer on-road heavy-duty diesel drayage trucks with near-zero heavy-duty natural gas drayage trucks in an amount not to exceed \$100,000 for each truck replaced for a total of up to \$1,000,000 from U.S. EPA's 2017 DERA Grant in the Advanced Technology, Outreach and Education Program Fund (17): (a) National Freight Industries LLC; (b) MDB Transportation Inc.; and (c) Westcoast Warehousing & Trucking Inc.

Wayne Natri
Executive Officer

MMM:FM:NB:AAO

Background

SCAQMD needs mass introduction of near-zero and zero emissions truck technologies in the South Coast Air Basin (Basin) to achieve significant progress towards the Basin's air quality goals. The Puget Sound Clean Air Agency (PSCAA) also needs to continue to aggressively reduce diesel particulate emissions from heavy-duty diesel trucks (HDDTs) operating in its region. Consequently, both agencies as well as CARB, U.S.

EPA, the Clean Cities Coalition and other stakeholders established a diesel emissions reduction strategy to accelerate truck turnover by providing incentives and encouraging the Basin and Washington fleets to replace their older and dirtier HDDTs with newer and cleaner trucks across each other's geographical locations.

On November 3, 2017, the Board recognized \$1,050,000 from U.S. EPA's 2017 Diesel Emissions Reduction Act (DERA) into the Advanced Technology, Outreach and Education Fund (17) and issued a Program Announcement (PA) to solicit applications for the replacement of 2012 or newer HDDTs in the Basin with new near-zero NOx emission natural gas heavy-duty trucks as well as to transfer the replaced 2012 or newer HDDTs to Washington State to displace Model Year 1995-2006 HDDTs, which would then be scrapped.

Outreach

In accordance with SCAQMD's Procurement Policy and Procedure, a public notice advertising the PA and inviting bids was published in the Los Angeles Times, the Orange County Register, the San Bernardino Sun, and the Riverside County's Press Enterprises newspapers to leverage the most cost-effective method of outreach to the entire South Coast Basin.

Additionally, potential bidders may have been notified utilizing SCAQMD's own electronic listing of certified minority vendors. Notice of the PA was emailed to the Black and Latino Legislative Caucuses and various minority chambers of commerce and business associations, and placed on the Internet at SCAQMD's website (<http://www.aqmd.gov>).

Proposal

This project is a two-step HDDT replacement project involving two public agencies--the SCAQMD and PSCAA--and fleets in both agencies' respective geographic boundaries. The first step involves replacement of 2012 or newer HDDTs operating in the Basin with 2017 or newer near-zero NOx emission natural gas trucks. In the final step, the replaced 2012 or newer HDDTs will be transferred and sold to fleets in Washington State to replace 1995-2006 HDDTs, which would then be scrapped. As part of the condition of sale and as an incentive for Washington fleets to participate, the purchase price of each replaced 2012 or newer HDDT will not exceed \$30,000 per truck.

Three applications with a total of twenty 2012 or newer HDDTs were received from three Basin fleets in response to the PA. Staff reviewed the applications and sent a list of thirteen 2012 or newer HDDTs to PSCAA to locate potential buyers in Washington State. The remaining seven trucks were excluded from the list because of high maintenance and operating costs and market values less than \$30,000.

This action is to execute contracts with one or more of the following fleet contractors-- National Freight Industries LLC, MDB Transportation Inc. and Westcoast Warehousing & Trucking Inc.¹--for the replacement of up to ten 2012 or newer HDDTs with near-zero NOx emissions natural gas trucks in an amount not to exceed \$100,000 per replaced truck. A maximum of \$1,000,000 from U.S. EPA's 2017 DERA Grant in the Advanced Technology, Outreach and Education Program Fund (17) will be awarded for truck replacements.

SCAQMD will reimburse Basin fleets a total of \$100,000 per each near-zero NOx emissions natural gas truck as each new near-zero emissions natural gas truck is purchased and placed into service, as well as confirmation by PSCAA that the replaced 2012 or newer HDDT has been received by a Washington fleet and each replaced 1995–2006 HDDT with its engine has been destroyed or rendered useless. Additionally, Washington fleets will pay Basin fleets up to \$30,000 for the sale of the 2012 or newer HDDT. The Basin and Washington fleets will execute an agreement with each other delineating, at a minimum, terms of bill of sale and purchase price, transfer of ownership, truck conditions, maintenance records and insurance as well as a signed statement that the replaced 2012 HDDTs will never re-enter the SCAQMD's jurisdiction.

Benefits to SCAQMD

Successful implementation of the HDDT replacement project will provide reductions of NOx, PM and GHG emissions. The HDDTs funded under this program are expected to operate for many years providing long-term emissions reduction benefits. In addition, the replaced 2012 HDDTs will never re-enter the SCAQMD's jurisdiction.

The proposed project is included in the *Technology Advancement Office Clean Fuels Program 2018 Plan Update* under the category "Fueling Infrastructure and Deployment (NG/RNG)".

Resource Impacts

Total funding for the recommended truck replacement awards will not exceed \$1,000,000 from U.S. EPA's 2017 DERA Grant in the Advanced Technology, Outreach and Education Program Fund (17). Of the remaining \$50,000 from the DERA Grant, the Board previously awarded \$25,000 to PSCAA to implement the replacement projects in Washington State and approved reimbursement of the General Fund up to \$25,000 for administrative costs.

¹ National Freight Industry, which has bought Cal Cartage (which is alleged to have used lease-to-own contracts), has confirmed that all their trucks are company-owned and they do not do lease-to-own contracts. It is our understanding that the other two companies do not have recent truck-driver related adjudications against them, and do not do lease-to-own contracts.

BOARD MEETING DATE: November 2, 2018

AGENDA NO. 6

PROPOSAL: Establish Special Revenue Fund, Recognize Revenue, Execute Agreements for Volkswagen Environmental Mitigation Program and Transfer Funds

SYNOPSIS: On May 25, 2018, CARB approved the Beneficiary Mitigation Plan for the Volkswagen (VW) Environmental Mitigation Trust. This plan identifies five funding categories for the State's \$423 million allocation of the VW Environmental Mitigation Trust. The funded projects are intended to mitigate the excess NOx emissions caused by the VW vehicles. SCAQMD has been identified by CARB as the administrator of two project funding categories—the Zero Emissions Class 8 Freight and Port Drayage Trucks and the Combustion Freight and Marine Projects. These actions are to establish the VW Mitigation Special Revenue Fund (79), recognize revenue up to \$150 million into this special revenue fund, execute an agreement with CARB to administer and implement the two project funding categories, execute a Memorandum(s) of Agreement with other air districts, as needed, to assist in administering this program, and transfer funds from the VW Mitigation Special Revenue Fund (79) to the General Fund to reimburse administrative costs associated with the program.

COMMITTEE: Technology, October 19, 2018; Recommended for Approval

RECOMMENDED ACTIONS:

1. Establish the VW Mitigation Special Revenue Fund (79) and recognize revenue, upon receipt, up to \$150 million into this fund to administer and implement two project funding categories identified in CARB's Beneficiary Mitigation Plan for the VW Environmental Mitigation Trust.
2. Transfer up to 10 percent of the total cost of the eligible mitigation actions from the VW Mitigation Special Revenue Fund (79) to the General Fund (01) to reimburse administrative costs associated with implementing the program.

3. Authorize the Executive Officer to execute the following:
 - a. An agreement with CARB to administer and implement the Zero Emissions Class 8 Freight and Port Drayage Trucks and the Combustion Freight and Marine Projects funding categories for the VW Environmental Mitigation Program; and
 - b. A Memorandum(s) of Agreement with other air districts, as needed, to assist in administering and implementing the Program.

Wayne Nastri
Executive Officer

MMM:FM:VW

Background

On May 25, 2018, CARB approved the Beneficiary Mitigation Plan for the Volkswagen (VW) Environmental Mitigation Trust. This plan identifies five funding categories for the State's \$423 million allocation of the VW Environmental Mitigation Trust. The funded projects are intended to mitigate the excess NOx emissions caused by the VW vehicles. SCAQMD has been identified by CARB as the administrator of two project funding categories—the Zero Emissions Class 8 Freight and Port Drayage Trucks and the Combustion Freight and Marine Projects. The Beneficiary Mitigation Plan allocates \$90 million and \$60 million, respectively, for these two categories for a total of \$150 million. The other three project funding categories in the Beneficiary Mitigation Plan will be administered by the San Joaquin Valley APCD and Bay Area AQMD. Staff has been coordinating with CARB and the other air districts to implement the Program including identifying statewide tasks that are needed to conduct effective outreach throughout the state of California.

Funding through the VW Mitigation Program will be available for mostly “scrap and replace” projects in the heavy-duty sector, including on-road freight trucks, transit and shuttle buses, school buses, forklifts, port cargo handling equipment, commercial marine vessels and freight switcher locomotives.

Proposal

These actions are to establish the VW Mitigation Special Revenue Fund (79) and recognize revenue up to \$150 million into this fund to administer and implement two project funding categories--the Zero Emissions Class 8 Freight and Port Drayage Trucks and the Combustion Freight and Marine Projects. This action is to also authorize the Executive Officer to execute an agreement with CARB to administer and implement these two funding categories for the VW Mitigation Program. This is a ten-year grant program with the first installment of funding anticipated in 2019. For the first installment, staff plans to release two solicitations, including a first-come, first-served

announcement for the Zero Emissions Class 8 Freight and Port Drayage Trucks category and a competitive solicitation for the Combustion Freight and Marine Projects category.

SCAQMD will assist the other two air districts in implementing their assigned project funding categories, including but not limited to: program development, outreach, project evaluations, inspections and other tasks necessary to implement this program statewide. It is anticipated that SCAQMD will also need to seek assistance from other air districts to conduct outreach and perform inspections in locations that are outside SCAQMD's jurisdiction. This will require significant collaboration and shared administrative costs with the other air districts. Therefore, this action is to also authorize the Executive Officer to execute a Memorandum(s) of Agreement with other air districts, as needed, to assist in administering and implementing this statewide program. Finally, this action is to transfer up to 10 percent of the total cost of the eligible mitigation actions from the VW Mitigation Special Revenue Fund (79) to the General Fund (01) to reimburse administrative costs associated with implementing the program.

Benefits to SCAQMD

The successful implementation of this program will provide direct reductions in NOx emissions from vehicles and equipment, which are intended to fully mitigate the excess NOx emissions caused by the VW vehicles. Over the ten-year life of this program, CARB estimates a reduction of 10,000 tons of NOx emissions. The projects funded through this program will also reduce emissions of other criteria air pollutants, toxic air contaminants and greenhouse gases. At least 50% of the projects will benefit disadvantaged and low-income communities by reducing NOx emissions and other air pollutants in these communities, as specified in the Beneficiary Mitigation Plan for the VW Environmental Mitigation Trust. This program will also accelerate the deployment of new commercially available near-zero emissions heavy-duty natural gas trucks, which is a key strategy to reducing NOx emissions identified in the 2016 AQMP.

Resource Impacts

Revenue up to \$150 million will be recognized into the VW Mitigation Special Revenue Fund (79) to administer and implement two project funding categories identified in CARB's Beneficiary Mitigation Plan for the VW Environmental Mitigation Trust. Ten percent of revenue received will be transmitted into the General Fund (01) to reimburse administrative costs.

BOARD MEETING DATE: November 2, 2018

AGENDA NO. 7

PROPOSAL: Adopt Resolution Recognizing Funds for FY 2017-18 Carl Moyer State Reserve Program, Execute Contracts for FY 2017-18 “Year 20” Carl Moyer Program, SOON Provision and Community Air Protection AB 134 Program, Amend Awards and Transfer Funds

SYNOPSIS: In June 2018, Program Announcements for the “Year 20” Carl Moyer Program and SOON Provision closed. This year, in addition to the traditional sources of Carl Moyer SB 1107 and AB 923 funds, funding from the Community Air Protection AB 134, State Reserve, FARMER and Voluntary NO_x Remediation Measure Programs can also be used to fund Carl Moyer and SOON Provision projects. This action is to adopt a Resolution recognizing up to \$3.1 million in Carl Moyer State Reserve funds from CARB with its terms and conditions for FY 2017-18. These actions are to also execute contracts for the “Year 20” Carl Moyer, SOON Provision and Community Air Protection AB 134 Programs totaling \$63,541,435, comprising \$35,559,645 from the Carl Moyer Program Fund (32) and \$27,981,790 from the Community Air Protection AB 134 Fund (77). These actions are to also amend two “Year 19” Carl Moyer awards, adding \$117,754 from the Carl Moyer Program SB 1107 Fund (32), and transfer \$2 million from the Carl Moyer Program AB 923 Fund (80) to the Voucher Incentive Program Fund (59) for truck replacements.

COMMITTEE: Technology, October 19, 2018; Less than a quorum was present; the Committee Members concurred that this item be approved by the Board.

RECOMMENDED ACTIONS:

1. Adopt the attached Resolution recognizing, upon receipt, up to \$3.1 million in State Reserve funds from CARB into the Carl Moyer Program State Reserve Fund (32), and authorize the Executive Officer to accept the terms and conditions of the 2017-18 State Reserve grant award.

2. Authorize the Chairman to execute the Carl Moyer Program contracts as listed in Table 2A, in an amount not to exceed \$36,939,058, comprised of \$22,066,578 from the Carl Moyer Program SB 1107 Fund (32), \$494,006 from interest funds accrued in the Carl Moyer Program Fund (32), and \$14,378,474 from the Community Air Protection AB 134 Fund (77).
3. Authorize the Chairman to execute contracts for infrastructure projects as listed in Table 2B, in an amount not to exceed \$13,603,316 from the Community Air Protection AB 134 Fund (77).
4. Authorize the Chairman to execute the SOON Provision contracts as listed in Table 3, in an amount not to exceed \$5,904,504 from the Carl Moyer Program SB 1107 Fund (32).
5. Authorize the Chairman to execute the off-road project contracts as listed in Table 4, in an amount not to exceed \$7,094,557, comprised of \$2,819,261 from the Carl Moyer State Reserve Fund (32), \$1,761,375 from the Carl Moyer Program FARMER Fund (32) and \$2,513,921 from the Carl Moyer Program NRM Fund (32).
6. Authorize the Executive Officer to redistribute the source of funds between the Carl Moyer Program Fund (32) and the Community Air Protection AB 134 Fund (77), in order to expeditiously meet the program encumbrance and expenditure targets to the extent not in conflict with any applicable guidance or direction from CARB.
7. Authorize the Chairman to execute contracts from the backup projects as listed in Table 5, should any returned funds become available from any of the funding sources approved for projects in this Board letter, or should any additional funds become available under the Community Air Protection AB 134 Program (Fund 77).
8. Amend the following Carl Moyer Program awards:
 1. Pastime Lakes Holdings, LLC, by adding \$117,754 to the \$30,129 previously awarded for replacement of one off-road equipment from the Carl Moyer Program SB 1107 Fund (32); and
 2. Los Angeles County Sheriff's Department to include the repower of two main engines of a marine vessel instead of one engine at no additional cost.

9. Approve the transfer of \$2 million from the Carl Moyer Program AB 923 Fund (80) to the Voucher Incentive Program (VIP) Fund (59) to continue funding truck replacement projects on a first-come, first-served basis under the Carl Moyer VIP.

Wayne Natri
Executive Officer

MMM:FM:VAW

Background

This is the 20th year of the original Carl Moyer Program and the 14th year of the Carl Moyer Program with a long-term source of funding generated under SB 1107 and AB 923. For FY 2017-18, CARB has allocated \$26,332,517 in SB 1107 funds to the SCAQMD, comprised of \$24,686,735 in project funds and \$1,645,782 in administrative funds. In addition, \$3,949,878 is required from SCAQMD as its local match. This year, in addition to these funding sources, other sources of funds are available that can be used to fund projects under the Carl Moyer Program and the SOON Provision. They are the Community Air Protection AB 134, State Reserve, the FARMER, and the Voluntary NOx Remediation Measure (NRM) funds. Except for the State Reserve funds that are being recognized in this Board letter, all the other funds have been recognized by the Board in earlier actions. Table 1 shows a summary of the total available funds including accumulated interest and returned funds.

On June 5, 2018, proposals were received in response to the Program Announcements (PAs) issued for the “Year 20” Carl Moyer Program and SOON Provision. The Program was oversubscribed by more than four times the available funding.

Outreach

In accordance with SCAQMD’s Procurement Policy and Procedure, a public notice advertising the PAs and inviting bids was published in the Los Angeles Times, the Orange County Register, the San Bernardino Sun, and Riverside County’s Press Enterprise newspapers to leverage the most cost-effective method of outreach to the South Coast Basin.

Additionally, potential bidders may have been notified utilizing SCAQMD’s own electronic listing of certified minority vendors. Notice of the PAs was emailed to the Black and Latino Legislative Caucuses and various minority chambers of commerce and business associations, and placed on the Internet at SCAQMD’s website (<http://www.aqmd.gov>).

Proposal

This action is to adopt the attached Resolution recognizing up to \$3.1 million in State Reserve funds from CARB into the Carl Moyer Program State Reserve Fund (32), and authorize the Executive Officer to accept the terms and conditions of the 2017-18 State Reserve grant award.

This action is to also execute contracts for the Carl Moyer Program vehicular and infrastructure projects as listed in Tables 2A and 2B, respectively, and for SOON Provision projects as listed in Table 3, in an amount not to exceed \$56,446,878, comprised of \$27,971,082 from the Carl Moyer Program SB 1107 Fund (32), \$494,006 from interest funds accrued in the Carl Moyer Program Fund (32) and \$27,981,790 from the Community Air Protection AB 134 Fund (77).

Additionally, this action is to execute off-road project contracts as listed in Table 4, in an amount not to exceed \$7,094,557, comprised of \$2,819,261 from the Carl Moyer State Reserve Fund (32), \$1,761,375 from the Carl Moyer Program FARMER Fund (32), and \$2,513,921 from the Carl Moyer Program NRM Fund (32).

Furthermore, in order to meet the State's expenditure deadlines and targets effectively, these actions are to allow the redistribution of the source of funds between the Carl Moyer Program Fund (32) and the Community Air Protection AB 134 Fund (77), to the extent not in conflict with any applicable guidance or direction from CARB, and to execute contracts from the backup projects as listed in Table 5, should any returned funds become available from any of the funding sources approved for projects in this Board letter or should any additional funds become available under the Community Air Protection AB 134 Program. The projects from the backup list will be selected based on cost-effectiveness and the amount of NOx reductions.

All the applications have been evaluated and recommended for funding according to CARB's Carl Moyer Program Guidelines approved in April 2017. For some projects, final CARB approval will be required before contracts can be executed. Due to the overwhelming oversubscription of the Program this year, combined with the funding opportunity for new project categories, staff recommends not funding marine vessel projects during this round of awards. For more than ten years, the marine vessels have been a major funding category for this program, and since the majority of the vessels are fishing vessels, monitoring their operation areas are more complicated than other equipment categories. There will also soon be new funding opportunities for marine vessel projects under the Volkswagen Settlement Program and next year's Carl Moyer Program, under which these projects may be considered. All the other equipment categories have been considered for funding. Since on-road diesel trucks are considered a major category of emissions in the AQMP and they are only at their second year of funding eligibility, all the near-zero emissions natural gas on-road trucks qualifying for incentive funding levels of at least \$10,000 have been recommended for funding.

Infrastructure projects are also a new funding category under this year's program. Staff has recommended funding all the battery electric charging and renewable natural gas fueling station projects, in addition to those natural gas fueling stations that are in close proximity to sensitive receptors, such as schools and hospitals. In all the remaining categories of SOON Provision, off-road, off-road agriculture and locomotive projects, the most cost effective projects of up to \$23,000 per ton have been recommended for funding.

Finally, these actions are to amend two Carl Moyer Program awards previously approved in November 2017--one with no additional cost but to allow the repower of 2 (not 1) main marine vessel engines and one to add an additional \$117,754 from the Carl Moyer Program SB 1107 Fund (32)--and to transfer \$2 million from the Carl Moyer Program AB 923 Fund (80) to the VIP Fund (59) to continue funding truck replacement projects on a first-come, first-served basis under the Carl Moyer VIP.

Disadvantaged and Low-Income Communities

Under the Carl Moyer Program and pursuant to AB 1390, there is a goal that at least 50 percent of the selected projects be located in disadvantaged and low-income communities. For the Community Air Protection AB 134 Program, there is a requirement that at least 80 percent of the selected projects be domiciled or in case of drayage trucks provide service in disadvantaged and low-income communities, based on CARB Board decision in April 2018. The status of the projects are determined by using the CalEnviroScreen version 3.0 and the requirements of SB 535 for disadvantaged communities and AB 1550 for low-income communities and those within half a mile of disadvantaged communities.

Since the Program was significantly oversubscribed this year, staff decided to only evaluate those projects that qualified in disadvantaged and low-income communities. Even by doing that, the Program was oversubscribed by twice as much as available funds. Thus, 100 percent of all the projects recommended for funding under the Carl Moyer and the Community Air Protection AB 134 Programs as well as all the recommended projects listed as backup are in disadvantaged and low-income communities. This by far surpasses the requirements of the programs.

Funding Distribution

Funding for projects has been recommended based on the priorities of the "Carl Moyer Program Guideline under SB 1107 & AB 923" adopted by the Board on July 8, 2005. The priorities in the Guideline are:

- Goods Movement (no less than 40%)
- Disadvantaged and low-income communities (no less than 50%)
- Cost-Effectiveness
- Low-Emission Engine/Vehicle Preference

- Early Commercialization of Advanced Technologies/Fuels
- Fleet Rules
- School Buses

Benefits to SCAQMD

The successful implementation of the Carl Moyer Program and SOON Provision will provide direct emissions reductions of both NOx and PM as required by the programs. Total annual NOx and PM emissions reductions for the Carl Moyer Program projects are approximately 239 tons and 7.8 tons, respectively. Total annual NOx emissions reductions from the recommended SOON Provision projects are approximately 118 tons. Since the vehicles and equipment funded under these programs will operate for the life of the contract and beyond, the emissions reductions will provide long-term benefits.

Resource Impacts

Total funding for projects under the “Year 20” Carl Moyer Program, the SOON Provision and the Community Air Protection AB 134 Program will not exceed \$63,541,435, comprised of the following funds:

- \$27,971,082 Carl Moyer Program SB 1107 Fund (32);
- \$494,006 Carl Moyer Program accrued interests funds in Fund (32);
- \$2,819,261 Carl Moyer Program State Reserve Fund (32);
- \$1,761,375 Carl Moyer Program FARMER Fund (32);
- \$2,513,921 Carl Moyer Program NRM Fund (32); and
- \$27,981,790 Community Air Protection AB 134 Fund (77).

The contract amendment from the November 2017 Carl Moyer Program award will not exceed \$117,754 from the Carl Moyer Program SB 1107 Fund (32), and the transfer from the Carl Moyer Program AB 923 Fund (80) to the VIP Fund (59) will not exceed \$2 million.

Attachments

1. Resolution
2. Funding Tables (Tables 1 - 5)

ATTACHMENT 1

RESOLUTION NO. 18-_____

A Resolution of the South Coast Air Quality Management District Board Recognizing Funds and Accepting the Terms and Conditions of the FY 2017-18 Carl Moyer State Reserve Grant Award

WHEREAS, under Health & Safety Code §40400 et seq., the South Coast Air Quality Management District (SCAQMD) is the local agency with the primary responsibility for the development, implementation, monitoring and enforcement of air pollution control strategies, clean fuels programs and motor vehicle use reduction measures; and

WHEREAS, the SCAQMD is authorized by Health & Safety Code §§40402, 40440, and 40448.5 as well as the Carl Moyer Memorial Air Quality Standards Attainment Program (§44275, et seq.) to implement programs to reduce transportation emissions, including programs to encourage the use of alternative fuels and low-emission vehicles; to develop and implement other strategies and measures to reduce air contaminants and achieve the state and federal air quality standards; and

WHEREAS, the Governing Board has adopted several programs to reduce emissions from on-road and off-road vehicles, as well as emissions from other equipment, including the Carl Moyer Program; and

WHEREAS, the SCAQMD is designated as an extreme non-attainment area for ozone and as such is required to utilize all feasible means to meet national ambient air quality standards.

THEREFORE, BE IT RESOLVED that the Governing Board, in regular session assembled on November 2, 2018, does hereby authorize the Executive Officer to accept the terms and conditions of the FY 2017-18 Carl Moyer State Reserve grant award and recognize up to \$3.1 million from CARB in Carl Moyer State Reserve funds.

BE IT FURTHER RESOLVED that the Executive Officer is authorized and directed to take all steps necessary to carry out this Resolution.

Date

Clerk of the Boards

ATTACHMENT 2

Table 1: Total Amount of Available Funds

Funding Source	Funds Required to be Encumbered	Comment
SB 1107	\$27,971,082	From \$26,332,517 “Year 20” funds allocated by CARB: less \$1,645,782 in administration funds; plus \$3,284,347 in returned projects.
Carl Moyer Fund Interest	\$494,006	Total unobligated interest funds in Fund 32 as of 6/30/18.
Match Funds	0	The amount of \$3,949,878 is the required match amount for “Year 20”, less 15% as SCAQMD’s in-kind contribution allowed under the Program. However, the SCAQMD has already met its local match requirement through funding of eligible projects.
AB 134	\$27,981,790	From \$107.5 million allocated by CARB: less \$6,718,750 in administrative funds; less \$72,799,460 obligated in earlier Board actions.
State Reserve	\$2,819,261	From \$3,007,212 allocated by CARB: less \$187,951 in administrative funds.
FARMER	\$1,761,375	From \$1,878,800 allocated by CARB: less \$117,425 in administrative funds.
NRM	\$2,513,921	From \$2,674,384 allocated by CARB: less \$160,463 in administrative funds.
Total	\$63,541,435	

**Table 2A: Recommended Carl Moyer Program Awards with
SB 1107, AB 134 and Carl Moyer Accrued Interest Funds**

Applicant	Category	Project Type	No. of Engines	Recommended Award Amount
Airport Mobile, Inc.	On-Road	Optional Low NOx Replacement	4	\$154,607
American Pacific Forwarders Inc.	On-Road	Optional Low NOx Replacement	2	\$200,000***
Calmet Services Inc.	On-Road	Optional Low NOx Replacement	9	\$586,402
Carolina Trucking, Inc.	On-Road	Optional Low NOx Replacement	23	\$2,300,000
City of Arcadia	On-Road	Optional Low NOx Replacement	1	\$11,263
Coachwest Transportation, Inc.	On-Road	Optional Low NOx Replacement	5	\$224,462
CSC Logistics Inc.	On-Road	Optional Low NOx Replacement	1	\$77,535
Fred Martinez	On-Road	Optional Low NOx Replacement	1	\$62,612
Green Fleet Systems, LLC	On-Road	Optional Low NOx Replacement	19	\$1,854,647***
Jose Adan Flores	On-Road	Optional Low NOx Replacement	1	\$53,575
Joshua Rodriguez	On-Road	Optional Low NOx Replacement	1	\$56,173
JPA Construction Clean Up Services Inc.	On-Road	Optional Low NOx Replacement	3	\$237,905
Juan Norio DBA Norio Trucking	On-Road	Optional Low NOx Replacement	1	\$75,552
Luis Manuel Calderon Perez	On-Road	Optional Low NOx Replacement	1	\$66,373

Applicant	Category	Project Type	No. of Engines	Recommended Award Amount
Martin H. Karam	On-Road	Optional Low NOx Replacement	1	\$73,647
MC EXPRESS TRUCKING LLC	On-Road	Optional Low NOx Replacement	10	\$551,497
MLI Leasing, LLC	On-Road	Optional Low NOx Replacement	7	\$181,595
National Ready Mix Concrete Company	On-Road	Optional Low NOx Replacement	29	\$1,664,528
Nestle Waters North America	On-Road	Optional Low NOx Replacement	18	\$236,637
Omnitrans	On-Road	Optional Low NOx Repower	21	\$301,412
Pacifica Trucks, LLC	On-Road	Optional Low NOx Replacement	11	\$693,384
Plain Leasing, Inc., dba. Ktrans Inc.	On-Road	Optional Low NOx Replacement	9	\$422,860
Ralphs Grocery Company	On-Road	Zero-Emission Replacement	5	\$726,767
Moris Musharbash I, Inc., dba San Gabriel Valley Towing	On-Road	Optional Low NOx Replacement	1	\$46,729
Southern Counties Express, Inc.	On-Road	Optional Low NOx Replacement	1	\$35,292
Supra National Express Inc.	On-Road	Optional Low NOx Replacement	11	\$812,447
TKS Leasing, LLC	On-Road	Optional Low NOx Replacement	1	\$100,000***
Toll Global Forwarding SCS (USA), Inc.	On-Road	Optional Low NOx Replacement	45	\$1,580,473***
Tricon Transportation, Inc.	On-Road	Optional Low NOx Replacement	2	\$114,195***
Ventura Transfer Company	On-Road	Optional Low NOx Replacement	4	\$375,122
Willian A. De Leon dba Willian A. De Leon Trucking	On-Road	Optional Low NOx Replacement	1	\$100,000

Applicant	Category	Project Type	No. of Engines	Recommended Award Amount
AAA Farm, Inc.	Off-Road Ag	Replacement	3	\$173,457
Alexandra Dates, Inc.	Off-Road Ag	Replacement	1	\$111,797
Anthony Vineyards, Inc.	Off-Road Ag	Replacement	2	\$230,160
Conejo Dates, Inc.	Off-Road Ag	Replacement	1	\$40,283
Cottonwood Dairy	Off-Road Ag	Replacement	2	\$149,268
Desert Empire Homes dba Desert Empire Palms	Off-Road Ag	Replacement	3	\$345,096
Desert Mist Farms	Off-Road Ag	Replacement	3	\$401,116
Emerald Acres LLC	Off-Road Ag	Replacement	2	\$1,950,000*
Gary McMillan dba McMillan Farm Management	Off-Road Ag	Replacement	2	\$134,616
Hollandia Farms North	Off-Road Ag	Replacement	2	\$128,428
J & L Properties	Off-Road Ag	Replacement	1	\$60,167
Jorge Fuentes Trucking	Off-Road Ag	Replacement	1	\$107,296
Long Life Farms, Inc.	Off-Road Ag	Replacement	13	\$793,178
Quality Turf, Inc.	Off-Road Ag	Replacement	6	\$353,382
Regents of the University of California, Riverside	Off-Road Ag	Replacement	2	\$81,087
Robert McGinty	Off-Road Ag	Replacement	1	\$67,669
Rocket Farm Herbs, Inc.	Off-Road Ag	Replacement	4	\$153,118
Sun World International, LLC	Off-Road Ag	Replacement	1	\$70,335
SunWest Farms	Off-Road Ag	Replacement	1	\$108,921
T & R Nurseries, Inc.	Off-Road Ag	Replacement	8	\$608,873
Van Drunen Farms/Golden State Herbs, Inc.	Off-Road Ag	Replacement	4	\$785,855
Altfillisch Contractors, Inc.	Off-Road	Repower	2	\$445,086
Bill Higgins, Inc.	Off-Road	Repower	1	\$44,528**
Cal Cartage Warehouse & Transloading LLC	Off-Road	Replacement	3	\$231,696
Ernesto Medrano dba. CM Backhoe Service	Off-Road	Replacement	2	\$185,032
James McMinn, Inc.	Off-Road	Replacement	2	\$1,559,840
RRM Properties	Off-Road	Replacement	2	\$376,993
Sharma Contractors	Off-Road	Replacement	1	\$527,370
Sukut Equipment Inc.	Off-Road	Repower	4	\$855,284***
Trench Shoring Company	Off-Road	Replacement	2	\$347,936
BNSF Railway Company	Locomotive	Replacement	6	\$11,533,500***
Total			337	\$36,939,058

*This project will be funded with \$1,828,699 in SB 1107 funds and \$121,301 in FARMER Program funds for a total amount not to exceed \$1,950,000.

**This project will be funded with \$44,528 in SB 1107 funds and \$102,579 in State Reserve funds for a total amount not to exceed \$147,107.

***This project is pending CARB case-by-case approval and/or SCAQMD qualification check.

Table 2B: Recommended Infrastructure Projects with AB 134 Funds

Applicant	Project Type	Recommended Award Amount
AJR Trucking, Inc. (2 locations)	Renewable Natural Gas	\$1,279,800
Banning Unified School District	Battery-Electric	\$122,500
City of Commerce Transportation	Renewable Natural Gas	\$866,305
City of Lawndale	Natural Gas*	\$343,218
Clean Energy Fuels	Renewable Natural Gas	\$4,042,689
CR&R Inc.	Renewable Natural Gas	\$223,901
Food Express, Inc.	Renewable Natural Gas	\$525,849
National Ready Mixed Concrete Co.	Renewable Natural Gas	\$1,113,794
Newport-Mesa Unified School District	Natural Gas*	\$198,575
Placentia-Yorba Linda Unified School District	Natural Gas*	\$695,990
RF Dickson Co., Inc.	Renewable Natural Gas	\$548,492
Superior Ready Mix (5 locations)	Renewable Natural Gas	\$3,642,203
Total	17 Stations	\$13,603,316

*These projects will operate near or sensitive receptor (i.e., school, hospital, etc.) areas.

Table 3: Recommended SOON Provision Awards with SB 1107 Funds

Applicant	Category	Project Type	No. of Engines	Recommended Award Amount
Peed Equipment Company	SOON	Repower	21	\$5,275,540
Ralph D. Mitzel, Inc.	SOON	Repower	3	\$628,964*
Total			24	\$5,904,504

*This project will also be funded with \$2,513,921 in NRM funds for a total of \$3,142,885.

Table 4: Recommended Off-Road Project Awards with State Reserve, FARMER and NRM Funds

State Reserve Funds				
Applicant	Category	Project Type	No. of Engines	Recommended Award Amount
Bill Higgins, Inc.	Off-Road	Repower	1	\$102,579*
Cal Cartage Warehouse & Transloading LLC	Off-Road	Replacement	3	\$231,696
California Waste Services LLC	Off-Road	Replacement	3	\$119,190
MBA Grading and Demolition, Inc.	Off-Road	Repower	1	\$168,206
Recycled Wood Products	Off-Road	Replacement	1	\$44,408
SA Recycling, LLC	Off-Road	Replacement	4	\$374,594
Skip Edmunson, Inc.	Off-Road	2-for-1 Replacement	4	\$1,147,254
Sukut Equipment Inc.	Off-Road	Repower	2	\$341,757
TIPCO Engineering Inc.	Off-Road	Repower	1	\$165,846
Tony R. Crisalli Inc.	Off-Road	Repower	1	\$123,731
Total			21	\$2,819,261
FARMER Program Funds				
AAA Farm, Inc.	Off-Road Ag	Replacement	1	\$32,721
Earth & Ag LLC	Off-Road Ag	Replacement	1	\$1,000,000
Emerald Acres LLC	Off-Road Ag	Replacement	1	\$121,301**
Quality Turf, Inc.	Off-Road Ag	Replacement	1	\$57,463
Robert McGinty	Off-Road Ag	Replacement	1	\$44,949
Rocket Farm Herbs, Inc.	Off-Road Ag	Replacement	1	\$23,682
Sun World International, LLC	Off-Road Ag	Replacement	2	\$140,670
SunWest Farms	Off-Road Ag	Replacement	2	\$114,926
T & R Nurseries, Inc.	Off-Road Ag	Replacement	7	\$225,663
Total			17	\$1,761,375
NRM Funds				
Ralph D. Mitzel, Inc.	SOON	Repower	13	\$2,513,921***
Total			13	\$2,513,921
Grand Total			51	\$7,094,557

*This project will be funded with \$102,579 in State Reserve funds and \$44,528 in SB 1107 funds for a total amount not to exceed \$147,107.

**This project will be funded with \$121,301 in FARMER Program funds and \$1,128,699 in SB 1107 funds for a total amount not to exceed \$1,250,000.

***This project will be funded with \$2,513,921 in NRM funds and \$628,964 in SB 1107 funds under SOON for a total amount not to exceed \$3,142,885.

Table 5: Recommended List of Backup Projects

Applicant	Category	Project Type	No. of Engines	Recommended Award Amount
Calmet Services Inc	On-Road	Optional Low NOx Replacement	1	\$2,487
Coachwest Transportation Inc.	On-Road	Optional Low NOx Replacement	3	\$24,433
MLI Leasing	On-Road	Optional Low NOx Replacement	3	\$15,272
Nestle Waters North America	On-Road	Optional Low NOx Replacement	43	\$313,492
Omnitrans	On-Road	Optional Low NOx Repower	6	\$49,274
Pacifica Trucks, LLC	On-Road	Optional Low NOx Replacement	2	\$1,927
Southern Counties Express, Inc.	On-Road	Optional Low NOx Replacement	2	\$7,131
Toll Global Forwarding SCS (USA), Inc.	On-Road	Optional Low NOx Replacement	4	\$31,300
Tricon Transportation Inc	On-Road	Optional Low NOx Replacement	1	\$5,389
Desert Empire Homes dba Desert Empire Palms	Off-Road Ag	Replacement	1	\$138,385
Hollandia Farms North	Off-Road Ag	Replacement	1	\$158,433
Long Life Farms, Inc.	Off-Road Ag	Replacement	4	\$414,350
Quality Turf, Inc.	Off-Road Ag	Replacement	1	\$120,415
Regents of the University of California, Riverside	Off-Road Ag	Replacement	1	\$78,521
Rocket Farm Herbs, Inc.	Off-Road Ag	Replacement	10	\$389,377
Stephen Wesselink Farms, Inc.	Off-Road Ag	Replacement	3	\$749,615
Calmat CO. dba Vulcan Materials Company	Off-Road (SOON)	Replacement	7	\$3,201,289
Peed Equipment Company	Off-Road (SOON)	Repower	25	\$5,118,854
Three Peaks Corp	Off-Road (SOON)	Replacement	1	\$33,995
Altfillisch Contractors, Inc.	Off-Road	Repower	6	\$1,166,587
Becker Pipeline Company	Off-Road	Replacement	2	\$175,439
Bill Higgins, Inc.	Off-Road	Repower	2	\$421,084
California Waste Services LLC	Off-Road	Replacement	2	\$448,346
City of Burbank	Off-Road	Replacement	2	\$42,053
Gateway Concrete Inc.	Off-Road	Replacement	2	\$66,036
Jacobsson Engineering Construction, Inc.	Off-Road	Replacement	3	\$135,629

Applicant	Category	Project Type	No. of Engines	Recommended Award Amount
Kirtley Construction Inc., dba TK Construction	Off-Road	Replacement	5	\$233,297
KLM Engineering	Off-Road	Replacement	3	\$493,686
Kramar's Iron & Metal, Inc.	Off-Road	Replacement	2	\$319,162
L & S Construction, Inc.	Off-Road	Replacement	4	\$698,061
L&S Development, Inc.	Off-Road	Replacement	1	\$27,071
Master Landscape	Off-Road	Replacement	1	\$1,350
MBA Grading and Demolition, Inc.	Off-Road	Repower	1	\$76,578
Peterson Pipeline, Inc.	Off-Road	Replacement	2	\$63,100
Post Bros Construction Company	Off-Road	Replacement	1	\$388,343
Powerland Equipment, Incorporated	Off-Road	Replacement	2	\$161,818
Recycled Wood Products	Off-Road	Replacement	6	\$971,512
RRM Properties	Off-Road	Replacement	42	\$6,398,878*
SA Recycling, LLC	Off-Road	Replacement	15	\$2,865,992*
Sharma Contractors	Off-Road	Replacement	4	\$490,410
Sukut Equipment Inc.	Off-Road	Replacement/Repower	93	\$27,417,819*
The J.V. Land Clearing Company, Incorporated	Off-Road	Replacement	1	\$416,155
Whittier Fertilizer Company	Off-Road	Replacement	5	\$162,341*
BNSF Railway Company	Locomotive	Replacement	3	\$5,766,750*
Metropolitan Stevedore dba Metro Ports	Locomotive	Replacement	3	\$925,041*
City of South Gate	Infrastructure	Natural Gas	NA	\$398,909
Albertsons LLC (2 locations)	Infrastructure	TRU Charger	NA	\$2,725,500
Convoy Solutions LLC dba IdleAir (2 locations)	Infrastructure	Electric Charger (TRU and TSE)	NA	\$407,721
Total			332	\$64,718,607

*This project is pending CARB case-by-case approval.

BOARD MEETING DATE: November 2, 2018

AGENDA NO. 8

PROPOSAL: Issue RFP for Health Study of Impacts of Well Rupture at Aliso Canyon

SYNOPSIS: In 2017, the settlement agreement between SCAQMD and Southern California Gas Company allocated \$1 million toward a health study of the impacts associated with the gas leak at the Aliso Canyon storage facility. This action is to release an RFP to solicit bids for potential projects to conduct data integration and exposure modeling, in an amount not to exceed \$1 million. Results of this work will include information about the concentrations, timing of exposures and spatial patterns of pollutants from the Aliso Canyon gas leak in the community before, during and after the incident. The RFP was developed in close coordination with SCAQMD's Health Study Technical Advisory Group. This work will provide essential information on exposures and health data that will help inform the health study to be conducted by the Los Angeles County Department of Public Health.

COMMITTEE: Administrative, October 12, 2018; Recommended for Approval

RECOMMENDED ACTION:

Issue RFP #2019-06 to solicit research proposals that can provide information to the public about the levels of pollutants from the Aliso Canyon incident in the community through data integration and exposure modeling, in an amount not to exceed \$1,000,000 from the SoCalGas Settlement Special Revenue Fund (76).

Wayne Natri
Executive Officer

Background

Southern California Gas Company (SoCalGas) operates the Aliso Canyon natural gas underground storage facility in Northridge. On October 23, 2015 SoCalGas discovered that Well SS25, used to inject and withdraw natural gas from the underground storage reservoir at their Aliso Canyon facility, was leaking. Nearly four months later on February 18, 2016, the California Department of Conservation, Division of Gas and Geothermal Resources (DOGGR) provided notice to the public confirming that Well SS25 at the Aliso Canyon Gas Storage Facility had been successfully sealed. In 2017, the SCAQMD reached a settlement with SoCalGas that provided \$1 million toward a health study.

In late 2017, SCAQMD staff conducted a community meeting to solicit input on the health study, and, in February 2018, provided a summary of the feedback received to the Porter Ranch Neighborhood Council (PRNC). SCAQMD established a Health Study Technical Advisory Group (HSTAG), which includes scientists from local, state and federal agencies, faculty from universities, and two community members selected by the (PRNC). The HSTAG helped to draft the scope of the health study, and assisted in integrating community comments to the draft RFP.

The HSTAG met in April 2018, where HSTAG members and other public participants provided input on the draft scope of the health study. The input from the HSTAG was integrated into a draft RFP document that was circulated to the HSTAG members on August 7, 2018.

On August 8, 2018, the California Attorney General, the County of Los Angeles, and the City of Los Angeles announced that they had reached a settlement agreement with SoCalGas that allocated \$25 million toward an extensive health study of the impacts of this incident, to be administered by the L.A. County Department of Public Health (LAC-DPH). Given this announcement, on September 10, 2018, staff polled the HSTAG members to inquire whether they would be supportive of revising the scope of the health study funded by SCAQMD to streamline efforts, and sent the HSTAG members a revised draft of the RFP. In September 2018, a majority of the HSTAG members expressed their support of the revised scope, and no members expressed disapproval.

Staff are working closely with LAC-DPH staff to ensure that the two efforts are complementary. Because data integration and exposure modeling is the necessary first step for any health study effort of this type, the \$1 million allocated through SCAQMD's settlement agreement will be used toward developing a more thorough and robust exposure model that would serve as the foundation for the LAC-DPH health study, or any other health study of this incident.

Additional Comments Received

On October 17, 2018, staff presented the draft RFP at the Northridge East Neighborhood Council meeting and asked for any additional public comments to be submitted by October 21, 2018. HSTAG members were also welcome to submit additional comments. Between October 17-21, 2018, staff received comments from 3 members of the HSTAG (including both community representatives) and 4 members of the public.

The comments included a request for additional detail in the RFP scope description, such as a breakdown of specific tasks, and clarifying language regarding the screening for possible conflicts of interest, and the calculation of the Technical Score. This clarifying language and additional detail was added to the draft RFP.

There was also a request to allow for a change in the scope if the County's settlement agreement is not approved by the Court. In that unlikely event, such a change in scope can be considered in the contracting phase of the project.

There was a request to specify the time frame of the project, and to allow for some flexibility in allocating part of the funds toward other related projects. Staff can better address these aspects through the contracting process rather than in the RFP.

There was a request to focus the scope on health symptoms rather than on air pollution exposures, and several comments stating that they do not want to see this study repeat the work that UCLA did through their contract with LAC-DPH. Staff believes that the exposure modeling is an absolutely essential part of any environmental epidemiology study of health outcomes, and that the assessment of health outcomes is better done through the LAC-DPH's health study, which will have the requisite resources. Any available results from the UCLA work through the contract with LAC-DPH would be part of the data integration portion of this RFP, and would be used as additional information to inform a more comprehensive exposure modeling that evaluates a broader range of pollutants and sources. Staff believes there is minimal overlap across these two projects.

There was also one request to extend the comment period. HSTAG members received the draft RFP on September 10, 2018, which allowed about 6 weeks to provide comments. The draft RFP was posted to the SCAQMD website on October 5, 2018, as part of the Administrative Committee agenda. Staff presented at 4 public meetings within 10 months in the community to discuss the draft scope and invite input on the RFP, so the request for an extension was not supported.

Proposal

Staff is seeking Board approval to release an RFP to solicit research proposals that can provide information to the public about the levels of exposure to pollutants from the Aliso Canyon incident in the community before, during and after the incident. Information about air pollution exposures would include information on concentrations, duration, timing, and spatial patterns.

Bid Evaluation

Proposals received will be evaluated by a panel consisting of staff members and technically qualified outside experts who have appropriate expertise. The panel will make recommendations and the final selection of the Contractors will be subject to approval by the Board.

Outreach

In accordance with SCAQMD's Procurement Policy and Procedure, a public notice advertising the RFP and inviting bids will be published in the Los Angeles Times, the Orange County Register, the San Bernardino Sun, and Riverside County's Press Enterprise newspapers to leverage the most cost-effective method of outreach within SCAQMD's jurisdiction.

Additionally, potential bidders may be notified utilizing SCAQMD's own electronic listing of certified minority vendors. Notice of the RFP will be emailed to the Black and Latino Legislative Caucuses and various minority chambers of commerce and business associations, and placed on the Internet at SCAQMD's website (<http://www.aqmd.gov>) where it can be viewed by making the selection "Grants & Bids." Staff will also contact potential qualified bidders whose work have been cited in related literature or referred to staff by other subject matter experts.

Resource Impacts

Sufficient funds are available in the SoCalGas Settlement Special Revenue Fund (76).

Attachment

RFP #2019-06



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

REQUEST FOR PROPOSALS

Research Study to Investigate Health Impacts of the Well Rupture at Aliso Canyon

P2019-06

The South Coast AQMD requests proposals for the following purpose in accordance with the following terms and conditions. In the preparation of this Request for Proposals (RFP), the words “Proposer”, “Firm”, “Institution”, “Contractor”, “Applicant” and “Consultant” are used interchangeably.

INDEX - The following are contained in this RFP:

Section I	Background
Section II	Purpose
Section III	Contact Person
Section IV	Schedule of Events
Section V	Project Scope
Section VI	Funding and Award Information
Section VII	Applicant Eligibility, Conflict(s) of Interest, and Required Qualifications
Section VIII	Proposal Submittal Requirements
Section IX	Proposal Submission Instructions
Section X	Proposal Evaluation and Selection Criteria

Attachment A - Aliso Health Study Prospective Contractor Information

Attachment B - Certifications and Representations

Attachment C - Human Subjects Information Form

Attachment D - Participation in the Procurement Process

Section 1: Background

Southern California Gas Company (SoCalGas) operates the Aliso Canyon natural gas underground storage facility at 12801 Tampa Avenue in Northridge, CA 91326. On October 23, 2015, SoCalGas discovered that Well SS25, used to inject and withdraw natural gas from the underground storage reservoir at their Aliso Canyon facility, was leaking. After months of leaking and several well-kill attempts, the well was temporarily controlled on February 11, 2016, and on February 18, 2016, the California Division of Oil, Gas and Geothermal Resources (DOGGR) announced that the well had been permanently sealed. Many public agencies and some private entities collected air pollution samples in the nearby community of Porter Ranch (a neighborhood within the City of Los Angeles) during the time that the well was actively leaking, as well as after the well had been sealed. However, the community continued to report health complaints after

re-occupying their homes. Therefore, there continue to be questions about potential long-term health impacts related to emissions from this facility.

In 2017, the South Coast AQMD reached a settlement agreement with SoCalGas that allocated \$1 million toward a health study of the impacts of the well rupture at Aliso Canyon and the resulting emissions. For these research projects, the South Coast AQMD has established a Health Study Technical Advisory Group (HSTAG), which consists of staff from local, state, and federal agencies, faculty from academic institutions, and two community representatives selected by the Porter Ranch Neighborhood Council. The purpose of the HSTAG is to provide technical scientific advice and feedback on the study scope, progress and findings, to integrate community input into the final study scope, and to provide updates to the community and researchers, as study results become available. The membership of the HSTAG is available at this link:

<http://www.aqmd.gov/docs/default-source/compliance/aliso-cyn/report/technical-advisory-group-roster.pdf?sfvrsn=8>). The contents of this RFP reflect the input of the HSTAG and community. Awardees funded through this RFP will be required to provide periodic updates to the HSTAG, and work with the HSTAG to maintain communication with the community.

In August 2018, the California Attorney General, the County of Los Angeles, and the City of Los Angeles reached a settlement agreement with SoCalGas that allocated \$25 million toward an extensive health study of the impacts of this incident, to be administered by the LA County Department of Public Health (LAC-DPH). South Coast AQMD staff are working closely with LAC-DPH staff to ensure that efforts are complementary. Because data integration and exposure modeling is the necessary first step for any health study effort of this type, the \$1 million allocated through South Coast AQMD's settlement agreement will be used toward developing a more thorough and robust exposure model that would serve as the foundation for the LAC-DPH health study, or any other health study of this incident.

Section 2: Purpose

The purpose of this Request for Proposals (RFP) is to solicit research proposals that can provide information to the public about the levels of pollutants from the Aliso Canyon incident in the community before, during and after the incident. Information about air pollution exposures would include information on concentrations, duration, timing, and spatial patterns.

Section 3: Contact Person

Questions regarding the content or intent of this RFP or on procedural matters should be addressed to:

Dr. Jo Kay Ghosh, Health Effects Officer
SCAQMD
21865 Copley Drive
Diamond Bar, CA 91765
Telephone: (909) 396-2582
Email: jghosh@aqmd.gov

Section 4: Schedule of Events

Date	Event
November 2, 2018	RFP Released
Jan 31, 2019 (no later than 5:00pm PST)	Proposals Due
February-March 2019	Proposal Evaluations
April 2019	Committee Consideration
May 2019	Governing Board Consideration
June 2019	Earliest Anticipated Contract Execution

Section 5: Project Scope

Proposals in response to this RFP are required to address the following area:

Data integration and exposure modeling of airborne emissions from the Aliso Canyon incident and from facility emissions prior to and after the incident. The overall goal of this work is to develop a thorough and robust exposure model that would serve as the foundation for a subsequent LAC-DPH health study, or any other health study of this incident. All available information, including air sampling data from public agencies, meteorological and topographical data, and information on emissions from the natural gas leak along with well-kill activities (e.g. truck emissions, aerosolized oil residue emissions from well-kill attempts, other well-kill emissions) should be considered. Additional exposure modeling of post-well-kill facility emissions would enhance the application. Proposals may include additional environmental sampling, such as air pollution sampling or meteorological sampling to enhance and validate the exposure model. The proposal should clearly indicate how the results obtained can be applied to support a subsequent health study for the affected communities.

The data integration should also include an evaluation of the data from the LAC-DPH symptom log, complaints data, and the CASPER study, as well as available results from any dispersion studies or meteorological studies sponsored by LAC-DPH regarding the Aliso Canyon incident.

The final exposure model(s) must be made public, by providing all final electronic files to the SCAQMD Project Officer at the conclusion of the research contract. The exposure model will then be made available to any researchers or members of the public. The awardee(s) may also be asked to collaborate with other parties doing related research.

Specific tasks should include (but not be limited to):

Task 1: Outreach

- a. Organize and present at a kick-off meeting with the HSTAG.
- b. Organize and present at public meetings twice a year to present study progress and findings, in coordination with the HSTAG.
- c. Additional outreach to enhance the study, as appropriate.

Task 2: Data integration

- a. Identify appropriate data sources and obtain data and associated documentation. This may include emissions data, monitoring data, and other data sources as noted above.
- b. Conduct data quality assurance.
- c. Integrate data and provide data summaries and evaluations.

Task 3: Perform additional environmental sampling, as appropriate, to enhance the exposure model.

Task 4: Develop air pollution exposure models based on existing information and any additional information generated through this project. This may include dispersion modeling or other appropriate modeling techniques. Exposure models should be developed for several key pollutants of concern, especially those that may cause health effects, and should include information about temporal and spatial distribution of pollutants.

Task 5: Quantify short-term and long-term exposure levels for specific contaminants, based on both data integration and exposure models.

Task 6: Use available scientifically valid methods to quantify effects of multiple pollutants with similar health endpoints.

Task 7: Project Reporting

- a. Prepare and submit Progress Reports every 6 months to SCAQMD Project Officer. These progress reports should roughly correspond with the public meetings described in Task 1(b).
- b. Prepare and submit Draft Final Report to SCAQMD Project Officer and HSTAG for feedback.
- c. Integrate feedback into Final Report.

Section 6: Funding and Award Information

Funds available: A total of \$1,000,000 is available through this RFP.

Award budget: Applications must not exceed \$1,000,000 in total costs (including indirect costs).

Section 7: Applicant Eligibility, Conflict(s) of Interest, and Required Qualifications

The following is the list of Eligible Applicants:

Higher Education Institutions

- Public/State Controlled Institutions of Higher Education
- Private Institutions of Higher Education

Nonprofits Other Than Institutions of Higher Education

- Nonprofits with 501(c)(3) IRS Status (Other than Institutions of Higher Education)
- Nonprofits without 501(c)(3) IRS Status (Other than Institutions of Higher Education)

For-Profit Organizations

- Small Businesses
- For-Profit Organizations (Other than Small Businesses)

Governments

- State Governments
- County Governments
- City or Township Governments
- Special District Governments
- Indian/Native American Tribal Governments (Federally Recognized)
- Indian/Native American Tribal Governments (Other than Federally Recognized)
- Eligible Agencies of the Federal Government
- U.S. Territory or Possession

Other

- Independent School Districts
- Public Housing Authorities/Indian Housing Authorities
- Native American Tribal Organizations (other than Federally recognized tribal governments)
- Faith-based or Community-based Organizations
- Regional Organizations
- Non-domestic (non-U.S.) Entities (Foreign Institutions)

Notes on Foreign Institutions

Non-domestic (non-U.S.) Entities (Foreign Institutions) **are** eligible to apply.

Non-domestic (non-U.S.) components of U.S. Organizations **are** eligible to apply.

Foreign components, as [defined in the NIH Grants Policy Statement](#), **are** allowed.

Conflict(s) of Interest

All applications must include a completed Aliso Health Study Prospective Contractor Information Form (see Technical Proposal, Section G, and Attachment A). This form must be completed by the Principal Investigator(s), Co-Investigator(s), all other named staff on the proposal, and all proposed subcontractors. Specific considerations are described in the Technical Proposal requirements, Section G.

Please note that current or former members of the Health Study Technical Advisory Group are not eligible to receive funding from this RFP.

Required Qualifications

Organization, firms, or persons proposing to bid on this RFP must be qualified and experienced in the field of work proposed, specifically, experience conducting research in environmental science, air quality, and exposure modeling to support population health studies, as well as experience working with communities. Applicants shall demonstrate a wide range of knowledge and experience implementing similar projects.

Applicant must submit the following:

1. Resumes, CV's, or similar statement of qualifications of project's Principal Investigator, Co-Investigators, and Sub-contractors. Substitution of the Principal Investigator will not be permitted without prior written approval by SCAQMD.
2. List of key personnel assigned to the project by level, and name, and qualifications. Specify the estimated time to be spent by the lead person and key persons assigned to the project.
3. List specific portions of the project to be subcontracted. Include all subcontractors and their statement of qualifications. Each subcontractor will submit a detailed statement of work, which will be included in the proposal package.
4. Summary of major similar projects during the last five years demonstrating experience in the project areas with references.
5. Summary of applicant's general qualifications to meet required qualifications and fulfill statement of work, including additional personnel and resources beyond those of the project's lead person or persons.

Section 8: Proposal Submittal Requirements

Submitted proposals must follow the format outlined below, and all requested information must be supplied. Failure to submit proposals in the required format will result in elimination from proposal evaluation. The cost for developing the

proposal is the responsibility of the Contractor, and shall not be chargeable to the South Coast AQMD.

Proposals should concisely address the information requested below in their statement of work in the format specified in this section. Applicants are encouraged to pay close attention to Section 10: **Proposal Evaluation and Selection Criteria** to assess how their bids will be evaluated. Each bid will be evaluated separately. Information provided should be specific enough for evaluation and scoring purposes, and sufficient for inclusion into a contract.

In the Statement of Work, the applicant must demonstrate that the project will result in scientific information that informs the public on air pollution exposures and/or public health impacts related to the Project Scope described above.

Each proposal must be submitted in three separate parts:

- Part I - Technical Proposal
- Part II - Cost Proposal
- Part III - Certifications and Representations, which are included in Attachment B to this RFP, and which must be completed and executed by an authorized official of the Contractor.

A separate cover letter including the name, address, and telephone number of the contractor, signed by the person or persons authorized to represent the Firm, should accompany the proposal submission. Firm contact information as follows should also be included in the cover letter:

1. Address and telephone number of office in, or nearest to, Diamond Bar, California.
2. Name and title of Firm's representative designated as contact (include address, phone number and e-mail address).

The cover letter should also include the following information:

- RFP No.
- Principal Investigator
- Type of Request
- Title of Project or Study
- Amount Requested
- Period of Support

PART I - TECHNICAL PROPOSAL

Summary (Section A) - State overall approach to meeting the objectives and satisfying the scope of work to be performed, the sequence of activities, and a description of methodology or techniques to be used.

Program Schedule (Section B) - Provide projected milestones or benchmarks for each 6 month period of the project within the total timeframe of the project.

Project Organization (Section C) - Describe the proposed management structure, program monitoring procedures, and organization of the proposed team.

Qualifications (Section D) - Describe the technical capabilities of the team. Provide references of other similar activities performed during the last five years demonstrating ability to successfully complete the project. Include contact name, title, and telephone number for any references listed. Provide a statement of your firm's background and experience in performing similar projects for other governmental organizations. Indicate whether your firm is a charitable organization under section 170(c) of the Internal Revenue Code and, if so, describe how the proposed project will further your charitable purposes. Specific areas of expertise to highlight include environmental science, air quality, and exposure modeling to support population health studies, as well as experience working with communities.

Assigned Personnel (Section E) - Provide the following information on the staff to be assigned to this project:

1. List all key personnel assigned to the project by level and name. Provide a resume or similar statement of the qualifications of the lead person and all persons assigned to the project. Substitution of project manager or lead personnel will not be permitted without prior written approval from SCAQMD.
2. Provide a spreadsheet of the labor hours proposed for each labor category at the task level.
3. Provide a statement of the education and training program provided by, or required of, the staff identified for participation in the project, particularly with reference to management consulting, governmental practices and procedures, and technical matters.
4. Provide a summary of your firm's general qualifications to meet required qualifications and fulfill statement of work, including additional firm personnel and resources beyond those who may be assigned to the project.

Subcontractors (Section F) - This project may require expertise in multiple technical areas. List any subcontractors that may be used and the work to be performed by them.

Aliso Canyon Health Study Prospective Contractor Information Form (Section G)

– Address potential conflicts of interest with other clients affected by actions performed by the applicant on behalf of SCAQMD. SCAQMD recognizes that prospective Contractors may be performing similar projects for other clients or may have involvement with Sempra Energy, Southern California Gas Company, or other parties involved in lawsuits against these entities regarding the Aliso Canyon incident. Please include a complete list of such clients for the past five (5) years with the type of work performed and the total number of years performing such tasks for each client. Please note that the SCAQMD will include in its assessment of all bids the degree of involvement by any applicants (including subcontractors) that have received payment from Southern California Gas Company, Sempra Energy, or other parties involved in lawsuits against Sempra Energy or Southern California Gas Company for work regarding the Aliso Canyon incident or related claims. SCAQMD will consider the nature and extent of such work in evaluating the proposal and reserves the right to disqualify applicants by reason of work performed for such clients that may create a potential conflict of interest. Specifically, the amount, timing, and degree of funding from or involvement with these entities will be considered in the panel's assessment. Please return the attached Aliso Health Study Prospective Contractor Information Form (Attachment A) to aide in assessment of your proposal.

Outreach Plan (Section H) - All applications must include a plan for public outreach and engagement, including outreach for the purpose of prioritizing study elements. Applicants who receive funding will be required to work with the HSTAG in reporting study progress and findings to the public twice a year.

Human Subjects Plan (Section I) - For proposals that involve NIH-defined human subjects research, a plan to protect human subjects in research is required as part of this application. Include a completed Human Subjects Information Form (Attachment C). If the project does not qualify as exempt human subjects research per NIH definitions, then the application must include a Protection of Human Subjects Plan, following NIH requirements, as defined in Section 3.1 of this website: <https://grants.nih.gov/grants/how-to-apply-application-guide/forms-e/general/g.500-phs-human-subjects-and-clinical-trials-information.htm#1.2>

Information on the most commonly used exemption categories for human subjects research is available here:

https://humansubjects.nih.gov/sites/hs/public_files/exemption_infographic_v6_hs_internet.pdf

Institutional Review Board waiver or approval is required for all funded proposals prior to the start of research activity.

Additional Data (Section J) - Provide other essential data that may assist in the evaluation of this proposal.

PART II - COST PROPOSAL

Cost information must be provided in detail, along with a justification of these costs, as listed below in order to assist in the evaluation of this proposal:

- A. Labor - List the total number of hours and the hourly billing rate for each level of professional staff. A breakdown of the proposed billing rates must identify the direct labor rate, overhead rate and amount, fringe benefit rate and amount, General and Administrative rate and amount, and proposed profit or fee. Provide a basis of estimate justifying the proposed labor hours and proposed labor mix.
- B. Subcontractor Costs - List subcontractor costs and identify subcontractors by name. Itemize subcontractor charges per hour or per day.
- C. Travel Costs - Indicate amount of travel cost and basis of estimate to include trip destination, purpose of trip, length of trip, airline fare or mileage expense, per diem costs, lodging and car rental.
- D. Other Direct Costs - This category may include such items as postage and mailing expense, printing and reproduction costs, etc. Provide a basis of estimate for these costs.

PART III – CERTIFICATIONS AND REPRESENTATIONS

Applicants must complete the Certifications and Representations provided as Attachment B, which requires disclosure of any possible conflict of interest or other matters that may affect the awarding of a grant to Proposer.

Section 9: Proposal Submission Instructions

All proposals must be submitted according to specifications set forth in the section above. Failure to adhere to these specifications may be cause for rejection of proposal.

Signature - All proposals should be signed by an authorized representative of the Applicant.

Due Date - The Applicant shall submit one original and four (4) complete copies of the proposal, and an electronic copy on a CD, in a sealed envelope, plainly marked in the upper left-hand corner with the name and address of the Applicant and the words "Request for Proposals – P2019-06." All proposals are due no later than 5:00 p.m. on January 31, 2019, and should be directed to:

Jo Kay Ghosh, Health Effects Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765-4178

Late bids/proposals will not be accepted. Any correction or resubmission done by the Applicant will not extend the submittal due date.

Grounds for Rejection - A proposal may be immediately rejected if:

- It is received at any time after the exact date and time set for receipt of proposals;
- It is not prepared in the format described; or
- It is signed by an individual not authorized to represent the applicant.

Bid Protest Procedure - The Bid Protest Procedure provides a process for a Bidder or prospective Bidder to submit a written protest in recognition of two types of protests: Protest Regarding Solicitation and Protest Regarding Award of a Contract. Copies of the Bid Protest Policy can be secured through a request to SCAQMD Procurement Department.

Disposition of Proposals – The South Coast AQMD reserves the right to reject any or all proposals. All proposals become the property of the South Coast AQMD and are subject to the California Public Records Act.

Modification - Once submitted, proposals cannot be altered without the prior written consent of the South Coast AQMD.

Section 10: Proposal Evaluation and Selection Criteria

Applications will be scored as follows:

Category	Maximum Points
Technical Score Elements:	
• Understanding the Problem (Significance)	25
• Contractor Qualifications (Investigators and Environment)	25
• Technical Approach	35
• Community/Government Support Letters	5
Cost Elements:	
• Effective Use of Funds	10
TOTAL	100

The Technical Score is the sum of the scores for the following categories:

- **Understanding the Problem (Significance)**
- **Contractor Qualifications (Investigators and Environment)**
- **Technical Approach**
- **Community/Government Support Letters**

Applications must have a minimum of 72 out of 90 maximum points for the Technical Score to be considered for funding.

The Evaluation Criteria for these score elements are provided below:

- **Understanding the Problem (Significance):** Does the project demonstrate a thorough understanding of the problem? Does the proposed work address one or more significant questions related to public health or environmental exposures in the communities most affected by this environmental incident? Is there a strong scientific premise for the project? Does the project address some of the highest priority groups and health concerns?
- **Contractor Qualifications (Investigators and Environment):** Are the PD(s)/PI(s), collaborators, and other researchers well suited to the project? Have they demonstrated an ongoing record of accomplishments that have advanced their field(s)? If the project is collaborative or multi-PD/PI, do the investigators have complementary and integrated expertise; are their leadership approach, governance and organizational structure appropriate for the project? Will the scientific environment in which the work will be done contribute to the probability of success? Are the institutional support,

equipment and other physical resources available to the investigators adequate for the project proposed? Will the project benefit from unique features of the scientific environment, subject populations, or collaborative arrangements?

- **Technical Approach:** Are the overall strategy, methodology, and analyses well-reasoned and appropriate to accomplish the specific aims of the project? Have the investigators presented strategies to ensure a robust and unbiased approach, as appropriate for the work proposed? Are potential problems, alternative strategies, and benchmarks for success presented? If the project is in the early stages of development, will the strategy establish feasibility and will particularly risky aspects be managed? Have the investigators presented adequate plans to address relevant biological variables, such as sex, for studies in vertebrate animals or human subjects? If the project involves human subjects and/or NIH-defined clinical research, are the plans to address 1) the protection of human subjects from research risks, and 2) inclusion (or exclusion) of individuals on the basis of sex/gender, race, and ethnicity, as well as the inclusion or exclusion of children, justified in terms of the scientific goals and research strategy proposed? Is the Outreach Plan adequate and appropriate?
- **Community/Government Support Letters:** Does the application demonstrate substantial broad-based community support for the proposal, e.g. through letters of support from community members, community leaders, or government officials?
- **Effective Use of Funds:** Is the proposed budget appropriate for the scope of the project? Does the project use funds effectively, and is the impact of the project proportional to the proposed budget?

Additional Points

Small Business or Small Business Joint Venture	10
DVBE or DVBE Joint Venture	10
Use of DVBE or Small Business subcontractors	7
Local Business	5
Most Favored Customer	2

Per SCAQMD policy, the cumulative points awarded for small business, DVBE, use of small business or DVBE subcontractors, and local business shall not exceed 15 points. Additional information is provided in Attachment D – Participation in the Procurement Process.

Self-Certification for Additional Points

The award of these additional points shall be contingent upon Applicant completing the Self-Certification section of Attachment B – Certifications and Representations and/or inclusion of a statement in the proposal self-certifying that Applicant qualifies for additional points as detailed above.

To receive additional points in the evaluation process for the categories of Small Business or Small Business Joint Venture, DVBE or DVBE Joint Venture or Local Business (for non-federally funded projects), the applicant must submit a self-certification or certification from the State of California Office of Small Business Certification and Resources at the time of proposal submission certifying that the applicant meets the requirements set forth in Section III. To receive points for the use of DVBE and/or Small Business subcontractors, at least 25 percent of the total contract value must be subcontracted to DVBEs and/or Small Businesses. To receive points for Most Favored Customer status, the applicant must submit, at proposal submission, certification of its commitment to provide most favored customer status to the SCAQMD.

Information on Selection Process

During the selection process the evaluation panel may wish to ask questions of some applicants for clarification purposes only. No new material will be permitted at this time. Additional information provided during the bid review process is limited to clarification by the applicant of information presented in his/her proposal, upon request by SCAQMD.

The Executive Officer or Governing Board may award the contract to an applicant other than the applicant receiving the highest rating in the event the Governing Board determines that another applicant from among those technically qualified would provide the best value to SCAQMD considering cost and technical factors. The determination shall be based solely on the Evaluation Criteria contained in the Request for Proposal (RFP), on evidence provided in the proposal and on any other evidence provided during the bid review process.

Selection will be made based on the above-described criteria and rating factors. Please note that the Conflicts of Interest section, above (Part I, Section G), makes clear that the SCAQMD reserves the right to disqualify applicants based on a number of factors, including the amount, timing, and degree of funding from or involvement with Southern California Gas Company, Sempra Energy, or other parties involved in lawsuits against Sempra Energy or Southern California Gas Company for work regarding the Aliso Canyon incident or related claims. Your proposal will not be considered complete unless it includes a completed Aliso Health Study Prospective Contractor Information Form (Attachment A) to allow

for this assessment. The selection will be made by and is subject to Executive Officer or Governing Board approval. Applicants may be notified of the results by email.

The Governing Board has approved a Bid Protest Procedure which provides a process for a Bidder or prospective Bidder to submit a written protest to SCAQMD Procurement Manager in recognition of two types of protests: Protest Regarding Solicitation and Protest Regarding Award of a Contract. Copies of the Bid Protest Policy can be secured through a request to SCAQMD Procurement Department.

The Executive Officer or Governing Board may award contracts to more than one applicant if in (his or their) sole judgment the purposes of the (contract or award) would best be served by selecting multiple applicants.

If additional funds become available, the Executive Officer or Governing Board may increase the amount awarded. The Executive Officer or Governing Board may also select additional applicants for a grant or contract if additional funds become available.

Disposition of Proposals – Pursuant to SCAQMD’s Procurement Policy and Procedure, SCAQMD reserves the right to reject any or all proposals. All proposals become the property of SCAQMD, and are subject to the California Public Records Act. One copy of the proposal shall be retained for SCAQMD files. Additional copies and materials will be returned only if requested and at the applicant’s expense.

If proposal submittal is for a Public Works project as defined by State of California Labor Code Section 1720, Applicant is required to include Contractor Registration No. in Attachment B. Proposal submittal will be deemed as non-responsive and Bidder may be disqualified if Contractor Registration No. is not included in Attachment B Applicant is alerted to changes to California Prevailing Wage compliance requirements as defined in Senate Bill 854 (Stat. 2014, Chapter 28), and California Labor Code Sections 1770, 1771 and 1725.

Attachments

ATTACHMENT A - Aliso Health Study Prospective Contractor Information Form

ATTACHMENT B - Certifications and Representations

ATTACHMENT C - Human Subjects Information Form

ATTACHMENT D - Participation in the Procurement Process

ATTACHMENT A

Aliso Canyon Health Study Prospective Contractor Information Form

Name: _____

Role on project: Principal Investigator (PI) Co-Investigator (Co-I) Staff
If Subcontractor, check here:

Title of proposal: _____

1. In the past five (5) years, did you receive payment for work done for Sempra Energy or Southern California Gas Company?

Yes No

2. In the past five (5) years, did you receive payment for work done from any party involved in lawsuits against Sempra Energy or Southern California Gas Company regarding the Aliso Canyon gas leak incident, or related claims?

Yes No

If you answered Yes to either Question 1 or Question 2, complete the following information (you may add additional pages, if necessary):

Project 1

a. Who the work was completed for: _____

b. Dates of work completed (range):

From: _____ To: _____

c. Amount of payment received by you: [Click here to enter text.](#)

d. Brief description of project: [Click here to enter text.](#)

Project 2

a. Who the work was completed for: _____

b. Dates of work completed (range):

From: _____ To: _____

c. Amount of payment received by you: \$ _____

d. Brief description of project: _____

Project 3

a. Who the work was completed for: _____

b. Dates of work completed (range):

From: _____ To: _____

c. Amount of payment received by you: \$ _____

d. Brief description of project: _____

Project 4

- a. Who the work was completed for: _____.
- b. Dates of work completed (range):
From: _____ . To: _____ .
- c. Amount of payment received by you: \$ _____.
- d. Brief description of project: _____.

I declare the foregoing disclosure to be true and correct.

Name (print): _____

Signature: _____

Title: _____

Date: _____

ATTACHMENT B



**South Coast
Air Quality Management District**

21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

Business Information Request

Dear SCAQMD Contractor/Supplier:

South Coast Air Quality Management District (SCAQMD) is committed to ensuring that our contractor/supplier records are current and accurate. If your firm is selected for award of a purchase order or contract, it is imperative that the information requested herein be supplied in a timely manner to facilitate payment of invoices. In order to process your payments, we need the enclosed information regarding your account. **Please review and complete the information identified on the following pages, remember to sign all documents for our files, and return them as soon as possible to the address below:**

**Attention: Accounts Payable, Accounting Department
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765-4178**

If you do not return this information, we will not be able to establish you as a vendor. This will delay any payments and would still necessitate your submittal of the enclosed information to our Accounting department before payment could be initiated. Completion of this document and enclosed forms would ensure that your payments are processed timely and accurately.

If you have any questions or need assistance in completing this information, please contact Accounting at (909) 396-3777. We appreciate your cooperation in completing this necessary information.

Sincerely,

Sujata Jain
Asst. Deputy Executive Officer
Finance

DH:tm

Enclosures: Business Information Request
Disadvantaged Business Certification
W-9
Form 590 Withholding Exemption Certificate
Federal Contract Debarment Certification
Campaign Contributions Disclosure
Direct Deposit Authorization



South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

BUSINESS INFORMATION REQUEST

Business Name	
Division of	
Subsidiary of	
Website Address	
Type of Business <i>Check One:</i>	<input type="checkbox"/> Individual <input type="checkbox"/> DBA, Name _____, County Filed in _____ <input type="checkbox"/> Corporation, ID No. _____ <input type="checkbox"/> LLC/LLP, ID No. _____ <input type="checkbox"/> Other _____

REMITTING ADDRESS INFORMATION

Address			
City/Town			
State/Province		Zip	
Phone	() - Ext	Fax	() -
Contact		Title	
E-mail Address			
Payment Name if Different			

All invoices must reference the corresponding Purchase Order Number(s)/Contract Number(s) if applicable and mailed to:

Attention: Accounts Payable, Accounting Department
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765-4178

BUSINESS STATUS CERTIFICATIONS

Federal guidance for utilization of disadvantaged business enterprises allows a vendor to be deemed a small business enterprise (SBE), minority business enterprise (MBE) or women business enterprise (WBE) if it meets the criteria below.

- is certified by the Small Business Administration or
- is certified by a state or federal agency or
- is an independent MBE(s) or WBE(s) business concern which is at least 51 percent owned and controlled by minority group member(s) who are citizens of the United States.

Statements of certification:

As a prime contractor to SCAQMD, (name of business) will engage in good faith efforts to achieve the fair share in accordance with 40 CFR Section 33.301, and will follow the six affirmative steps listed below **for contracts or purchase orders funded in whole or in part by federal grants and contracts.**

1. Place qualified SBEs, MBEs, and WBEs on solicitation lists.
2. Assure that SBEs, MBEs, and WBEs are solicited whenever possible.
3. When economically feasible, divide total requirements into small tasks or quantities to permit greater participation by SBEs, MBEs, and WBEs.
4. Establish delivery schedules, if possible, to encourage participation by SBEs, MBEs, and WBEs.
5. Use services of Small Business Administration, Minority Business Development Agency of the Department of Commerce, and/or any agency authorized as a clearinghouse for SBEs, MBEs, and WBEs.
6. If subcontracts are to be let, take the above affirmative steps.

Self-Certification Verification: Also for use in awarding additional points, as applicable, in accordance with SCAQMD Procurement Policy and Procedure:

Check all that apply:

- | | |
|---|--|
| <input type="checkbox"/> Small Business Enterprise/Small Business Joint Venture | <input type="checkbox"/> Women-owned Business Enterprise |
| <input type="checkbox"/> Local business Venture | <input type="checkbox"/> Disabled Veteran-owned Business Enterprise/DVBE Joint Venture |
| <input type="checkbox"/> Minority-owned Business Enterprise | <input type="checkbox"/> Most Favored Customer Pricing Certification |

Percent of ownership: _____ %

Name of Qualifying Owner(s): _____

State of California Public Works Contractor Registration No. _____ . MUST BE INCLUDED IF BID PROPOSAL IS FOR PUBLIC WORKS PROJECT.

I, the undersigned, hereby declare that to the best of my knowledge the above information is accurate. Upon penalty of perjury, I certify information submitted is factual.

NAME

TITLE

TELEPHONE NUMBER

DATE

Definitions

Disabled Veteran-Owned Business Enterprise means a business that meets all of the following criteria:

- is a sole proprietorship or partnership of which is at least 51 percent owned by one or more disabled veterans, or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more disabled veterans; a subsidiary which is wholly owned by a parent corporation but only if at least 51 percent of the voting stock of the parent corporation is owned by one or more disabled veterans; or a joint venture in which at least 51 percent of the joint venture's management and control and earnings are held by one or more disabled veterans.
- the management and control of the daily business operations are by one or more disabled veterans. The disabled veterans who exercise management and control are not required to be the same disabled veterans as the owners of the business.
- is a sole proprietorship, corporation, partnership, or joint venture with its primary headquarters office located in the United States and which is not a branch or subsidiary of a foreign corporation, firm, or other foreign-based business.

Joint Venture means that one party to the joint venture is a DVBE and owns at least 51 percent of the joint venture. In the case of a joint venture formed for a single project this means that DVBE will receive at least 51 percent of the project dollars.

Local Business means a business that meets all of the following criteria:

- has an ongoing business within the boundary of SCAQMD at the time of bid application.
- performs 90 percent of the work within SCAQMD's jurisdiction.

Minority-Owned Business Enterprise means a business that meets all of the following criteria:

- is at least 51 percent owned by one or more minority persons or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more minority persons.
- is a business whose management and daily business operations are controlled or owned by one or more minority person.
- is a business which is a sole proprietorship, corporation, partnership, joint venture, an association, or a cooperative with its primary headquarters office located in the United States, which is not a branch or subsidiary of a foreign corporation, foreign firm, or other foreign business.

"Minority" person means a Black American, Hispanic American, Native American (including American Indian, Eskimo, Aleut, and Native Hawaiian), Asian-Indian American (including a person whose origins are from India, Pakistan, or Bangladesh), Asian-Pacific American (including a person whose origins are from Japan, China, the Philippines, Vietnam, Korea, Samoa, Guam, the United States Trust Territories of the Pacific, Northern Marianas, Laos, Cambodia, or Taiwan).

Small Business Enterprise means a business that meets the following criteria:

- a. 1) an independently owned and operated business; 2) not dominant in its field of operation; 3) together with affiliates is either:
 - **A service, construction, or non-manufacturer with 100 or fewer employees, and average annual gross receipts of ten million dollars (\$10,000,000) or less over the previous three years, or**
 - A manufacturer with 100 or fewer employees.
- b. Manufacturer means a business that is both of the following:
 - 1) Primarily engaged in the chemical or mechanical transformation of raw materials or processed substances into new products.
 - 2) Classified between Codes 311000 to 339000, inclusive, of the North American Industrial Classification System (NAICS) Manual published by the United States Office of Management and Budget, 2007 edition.

Small Business Joint Venture means that one party to the joint venture is a Small Business and owns at least 51 percent of the joint venture. In the case of a joint venture formed for a single project this means that the Small Business will receive at least 51 percent of the project dollars.

Women-Owned Business Enterprise means a business that meets all of the following criteria:

- is at least 51 percent owned by one or more women or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more women.
- is a business whose management and daily business operations are controlled or owned by one or more women.
- is a business which is a sole proprietorship, corporation, partnership, or a joint venture, with its primary headquarters office located in the United States, which is not a branch or subsidiary of a foreign corporation, foreign firm, or other foreign business.

Most Favored Customer as used in this policy means that the SCAQMD will receive at least as favorable pricing, warranties, conditions, benefits and terms as other customers or clients making similar purchases or receiving similar services.

By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and
4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting*, later, for further information.

Note: If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien;
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;
- An estate (other than a foreign estate); or
- A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States.

- In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the entity;
- In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the trust; and
- In the case of a U.S. trust (other than a grantor trust), the U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

Foreign person. If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Pub. 515, *Withholding of Tax on Nonresident Aliens and Foreign Entities*).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items.

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.
2. The treaty article addressing the income.
3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.
4. The type and amount of income that qualifies for the exemption from tax.
5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

Backup Withholding

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 28% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester,
2. You do not certify your TIN when required (see the instructions for Part II for details),
3. The IRS tells the requester that you furnished an incorrect TIN,
4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or
5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt payee code*, later, and the separate Instructions for the Requester of Form W-9 for more information.

Also see *Special rules for partnerships*, earlier.

What is FATCA Reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code*, later, and the Instructions for the Requester of Form W-9 for more information.

Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account; for example, if the grantor of a grantor trust dies.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of \$50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a \$500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Line 1

You must enter one of the following on this line; **do not** leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account (other than an account maintained by a foreign financial institution (FFI)), list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9. If you are providing Form W-9 to an FFI to document a joint account, each holder of the account that is a U.S. person must provide a Form W-9.

a. **Individual.** Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

Note: ITIN applicant: Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040/1040A/1040EZ you filed with your application.

b. **Sole proprietor or single-member LLC.** Enter your individual name as shown on your 1040/1040A/1040EZ on line 1. You may enter your business, trade, or "doing business as" (DBA) name on line 2.

c. **Partnership, LLC that is not a single-member LLC, C corporation, or S corporation.** Enter the entity's name as shown on the entity's tax return on line 1 and any business, trade, or DBA name on line 2.

d. **Other entities.** Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on line 2.

e. **Disregarded entity.** For U.S. federal tax purposes, an entity that is disregarded as an entity separate from its owner is treated as a "disregarded entity." See Regulations section 301.7701-2(c)(2)(iii). Enter the owner's name on line 1. The name of the entity entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on line 2, "Business name/disregarded entity name." If the owner of the disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, you may enter it on line 2.

Line 3

Check the appropriate box on line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box on line 3.

IF the entity/person on line 1 is a(n) . . .	THEN check the box for . . .
• Corporation	Corporation
• Individual • Sole proprietorship, or • Single-member limited liability company (LLC) owned by an individual and disregarded for U.S. federal tax purposes.	Individual/sole proprietor or single-member LLC
• LLC treated as a partnership for U.S. federal tax purposes, • LLC that has filed Form 8832 or 2553 to be taxed as a corporation, or • LLC that is disregarded as an entity separate from its owner but the owner is another LLC that is not disregarded for U.S. federal tax purposes.	Limited liability company and enter the appropriate tax classification. (P= Partnership; C= C corporation; or S= S corporation)
• Partnership	Partnership
• Trust/estate	Trust/estate

Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space on line 4 any code(s) that may apply to you.

Exempt payee code.

- Generally, individuals (including sole proprietors) are not exempt from backup withholding.
- Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.
- Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.
- Corporations are not exempt from backup withholding with respect to attorneys' fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space in line 4.

- 1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)
- 2—The United States or any of its agencies or instrumentalities
- 3—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities
- 4—A foreign government or any of its political subdivisions, agencies, or instrumentalities
- 5—A corporation
- 6—A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or possession
- 7—A futures commission merchant registered with the Commodity Futures Trading Commission
- 8—A real estate investment trust
- 9—An entity registered at all times during the tax year under the Investment Company Act of 1940
- 10—A common trust fund operated by a bank under section 584(a)
- 11—A financial institution
- 12—A middleman known in the investment community as a nominee or custodian
- 13—A trust exempt from tax under section 664 or described in section 4947

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for . . .	THEN the payment is exempt for . . .
Interest and dividend payments	All exempt payees except for 7
Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
Barter exchange transactions and patronage dividends	Exempt payees 1 through 4
Payments over \$600 required to be reported and direct sales over \$5,000 ¹	Generally, exempt payees 1 through 5 ²
Payments made in settlement of payment card or third party network transactions	Exempt payees 1 through 4

¹ See Form 1099-MISC, Miscellaneous Income, and its instructions.

² However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

Exemption from FATCA reporting code. The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) written or printed on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37)

B—The United States or any of its agencies or instrumentalities

C—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i)

E—A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i)

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state

G—A real estate investment trust

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940

I—A common trust fund as defined in section 584(a)

J—A bank as defined in section 581

K—A broker

L—A trust exempt from tax under section 664 or described in section 4947(a)(1)

M—A tax exempt trust under a section 403(b) plan or section 457(g) plan

Note: You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns. If this address differs from the one the requester already has on file, write NEW at the top. If a new address is provided, there is still a chance the old address will be used until the payor changes your address in their records.

Line 6

Enter your city, state, and ZIP code.

Part I. Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN.

If you are a single-member LLC that is disregarded as an entity separate from its owner, enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

Note: See *What Name and Number To Give the Requester*, later, for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at www.SSA.gov. You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at www.irs.gov/Businesses and clicking on Employer Identification Number (EIN) under Starting a Business. Go to www.irs.gov/Forms to view, download, or print Form W-7 and/or Form SS-4. Or, you can go to www.irs.gov/OrderForms to place an order and have Form W-7 and/or SS-4 mailed to you within 10 business days.

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note: Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

Caution: A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.

Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if item 1, 4, or 5 below indicates otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see *Exempt payee code*, earlier.

Signature requirements. Complete the certification as indicated in items 1 through 5 below.

1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983. You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

3. Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), ABLE accounts (under section 529A), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account) other than an account maintained by an FFI	The actual owner of the account or, if combined funds, the first individual on the account ¹
3. Two or more U.S. persons (joint account maintained by an FFI)	Each holder of the account
4. Custodial account of a minor (Uniform Gift to Minors Act)	The minor ²
5. a. The usual revocable savings trust (grantor is also trustee) b. So-called trust account that is not a legal or valid trust under state law	The grantor-trustee ¹ The actual owner ¹
6. Sole proprietorship or disregarded entity owned by an individual	The owner ³
7. Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulations section 1.671-4(b)(2)(i)(A))	The grantor*
For this type of account:	Give name and EIN of:
8. Disregarded entity not owned by an individual	The owner
9. A valid trust, estate, or pension trust	Legal entity ⁴
10. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
11. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
12. Partnership or multi-member LLC	The partnership
13. A broker or registered nominee	The broker or nominee

For this type of account:	Give name and EIN of:
14. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
15. Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulations section 1.671-4(b)(2)(i)(B))	The trust

¹ List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

² Circle the minor's name and furnish the minor's SSN.

³ You must show your individual name and you may also enter your business or DBA name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

⁴ List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see *Special rules for partnerships*, earlier.

*Note: The grantor also must provide a Form W-9 to trustee of trust.

Note: If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

Secure Your Tax Records From Identity Theft

Identity theft occurs when someone uses your personal information such as your name, SSN, or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039.

For more information, see Pub. 5027, Identity Theft Information for Taxpayers.

Victims of identity theft who are experiencing economic harm or a systemic problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

Protect yourself from suspicious emails or phishing schemes. Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to phishing@irs.gov. You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at spam@uce.gov or report them at www.ftc.gov/complaint. You can contact the FTC at www.ftc.gov/idtheft or 877-IDTHEFT (877-438-4338). If you have been the victim of identity theft, see www.IdentityTheft.gov and Pub. 5027.

Visit www.irs.gov/IdentityTheft to learn more about identity theft and how to reduce your risk.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and possessions for use in administering their laws. The information also may be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payers must generally withhold a percentage of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to the payer. Certain penalties may also apply for providing false or fraudulent information.

2018 Withholding Exemption Certificate

590

The payee completes this form and submits it to the withholding agent. The withholding agent keeps this form with their records.

Withholding Agent Information

Name _____

Payee Information

Name _____

SSN or ITIN FEIN CA Corp no. CA SOS file no.

Address (apt./sta., room, PO box, or PMB no.) _____

City (if you have a foreign address, see instructions.) _____

State _____ ZIP code _____

Exemption Reason

Check only one box.

By checking the appropriate box below, the payee certifies the reason for the exemption from the California income tax withholding requirements on payment(s) made to the entity or individual.

- Individuals — Certification of Residency:**
I am a resident of California and I reside at the address shown above. If I become a nonresident at any time, I will promptly notify the withholding agent. See instructions for General Information D, Definitions.
- Corporations:**
The corporation has a permanent place of business in California at the address shown above or is qualified through the California Secretary of State (SOS) to do business in California. The corporation will file a California tax return. If this corporation ceases to have a permanent place of business in California or ceases to do any of the above, I will promptly notify the withholding agent. See instructions for General Information D, Definitions.
- Partnerships or Limited Liability Companies (LLCs):**
The partnership or LLC has a permanent place of business in California at the address shown above or is registered with the California SOS, and is subject to the laws of California. The partnership or LLC will file a California tax return. If the partnership or LLC ceases to do any of the above, I will promptly inform the withholding agent. For withholding purposes, a limited liability partnership (LLP) is treated like any other partnership.
- Tax-Exempt Entities:**
The entity is exempt from tax under California Revenue and Taxation Code (R&TC) Section 23701 _____ (insert letter) or Internal Revenue Code Section 501(c) _____ (insert number). If this entity ceases to be exempt from tax, I will promptly notify the withholding agent. Individuals cannot be tax-exempt entities.
- Insurance Companies, Individual Retirement Arrangements (IRAs), or Qualified Pension/Profit-Sharing Plans:**
The entity is an insurance company, IRA, or a federally qualified pension or profit-sharing plan.
- California Trusts:**
At least one trustee and one noncontingent beneficiary of the above-named trust is a California resident. The trust will file a California fiduciary tax return. If the trustee or noncontingent beneficiary becomes a nonresident at any time, I will promptly notify the withholding agent.
- Estates — Certification of Residency of Deceased Person:**
I am the executor of the above-named person's estate or trust. The decedent was a California resident at the time of death. The estate will file a California fiduciary tax return.
- Nonmilitary Spouse of a Military Servicemember:**
I am a nonmilitary spouse of a military servicemember and I meet the Military Spouse Residency Relief Act (MSRRA) requirements. See instructions for General Information E, MSRRA.

CERTIFICATE OF PAYEE: Payee must complete and sign below.

To learn about your privacy rights, how we may use your information, and the consequences for not providing the requested information, go to ftb.ca.gov/forms and search for 1131. To request this notice by mail, call 800.852.5711.

Under penalties of perjury, I declare that I have examined the information on this form, including accompanying schedules and statements, and to the best of my knowledge and belief, it is true, correct, and complete. I further declare under penalties of perjury that if the facts upon which this form are based change, I will promptly notify the withholding agent.

Type or print payee's name and title _____ Telephone (____) _____

Payee's signature ► _____ Date _____

2017 Instructions for Form 590

Withholding Exemption Certificate

References in these instructions are to the California Revenue and Taxation Code (R&TC).

General Information

Registered Domestic Partners (RDP) – For purposes of California income tax, references to a spouse, husband, or wife also refer to a Registered Domestic Partner (RDP) unless otherwise specified. For more information on RDPs, get FTB Pub. 737, Tax Information for Registered Domestic Partners.

A Purpose

Use Form 590, Withholding Exemption Certificate, to certify an exemption from nonresident withholding.

Form 590 does not apply to payments of backup withholding. For more information, go to ftb.ca.gov and search for **backup withholding**.

Form 590 does not apply to payments for wages to employees. Wage withholding is administered by the California Employment Development Department (EDD). For more information, go to edd.ca.gov or call 888.745.3886.

Do not use Form 590 to certify an exemption from withholding if you are a **Seller of California real estate**. Sellers of California real estate use Form 593-C, Real Estate Withholding Certificate, to claim an exemption from the real estate withholding requirement.

The following are excluded from withholding and completing this form:

- The United States and any of its agencies or instrumentalities.
- A state, a possession of the United States, the District of Columbia, or any of its political subdivisions or instrumentalities.
- A foreign government or any of its political subdivisions, agencies, or instrumentalities.

B Income Subject to Withholding

California Revenue and Taxation Code (R&TC) Section 18662 requires withholding of income or franchise tax on payments of California source income made to nonresidents of California.

Withholding is required on the following, but is not limited to:

- Payments to nonresidents for services rendered in California.
- Distributions of California source income made to domestic nonresident partners, members, and S corporation shareholders and allocations of California source income made to foreign partners and members.
- Payments to nonresidents for rents if the payments are made in the course of the withholding agent's business.
- Payments to nonresidents for royalties from activities sourced to California.

- Distributions of California source income to nonresident beneficiaries from an estate or trust.
- Endorsement payments received for services performed in California.
- Prizes and winnings received by nonresidents for contests in California.

However, withholding is optional if the total payments of California source income are \$1,500 or less during the calendar year.

For more information on withholding get FTB Pub. 1017, Resident and Nonresident Withholding Guidelines. To get a withholding publication, see Additional Information.

C Who Certifies this Form

Form 590 is certified by the payee. California residents or entities exempt from the withholding requirement should complete Form 590 and submit it to the withholding agent before payment is made. The withholding agent is then relieved of the withholding requirements if the agent relies in good faith on a completed and signed Form 590 unless notified by the Franchise Tax Board (FTB) that the form should not be relied upon.

An incomplete certificate is invalid and the withholding agent should not accept it. If the withholding agent receives an incomplete certificate, the withholding agent is required to withhold tax on payments made to the payee until a valid certificate is received. In lieu of a completed exemption certificate, the withholding agent may accept a letter from the payee as a substitute explaining why they are not subject to withholding. The letter must contain all the information required on the certificate in similar language, including the under penalty of perjury statement and the payee's taxpayer identification number (TIN). The withholding agent must retain a copy of the certificate or substitute for at least five years after the last payment to which the certificate applies, and provide it upon request to the FTB.

If an entertainer (or the entertainer's business entity) is paid for a performance, the entertainer's information must be provided. **Do not** submit the entertainer's agent or promoter information.

The grantor of a grantor trust shall be treated as the payee for withholding purposes. Therefore, if the payee is a grantor trust and one or more of the grantors is a nonresident, withholding is required. If all of the grantors on the trust are residents, no withholding is required. Resident grantors can check the box on Form 590 labeled "Individuals — Certification of Residency."

D Definitions

For California nonwage withholding purposes, **nonresident** includes all of the following:

- Individuals who are not residents of California.
- Corporations not qualified through the California Secretary of State (CA SOS) to do business in California or having no permanent place of business in California.
- Partnerships or limited liability companies (LLCs) with no permanent place of business in California.
- Any trust without a resident grantor, beneficiary, or trustee, or estates where the decedent was not a California resident.

Foreign refers to non-U.S.

For more information about determining resident status, get FTB Pub. 1031, Guidelines for Determining Resident Status. Military servicemembers have special rules for residency. For more information, get FTB Pub. 1032, Tax Information for Military Personnel.

Permanent Place of Business:

A corporation has a permanent place of business in California if it is organized and existing under the laws of California or it has qualified through the CA SOS to transact intrastate business. A corporation that has not qualified to transact intrastate business (e.g., a corporation engaged exclusively in interstate commerce) will be considered as having a permanent place of business in California only if it maintains a permanent office in California that is permanently staffed by its employees.

E Military Spouse Residency Relief Act (MSRRA)

Generally, for tax purposes you are considered to maintain your existing residence or domicile. If a military servicemember and nonmilitary spouse have the same state of domicile, the MSRRA provides:

- A spouse shall not be deemed to have lost a residence or domicile in any state solely by reason of being absent to be with the servicemember serving in compliance with military orders.
- A spouse shall not be deemed to have acquired a residence or domicile in any other state solely by reason of being there to be with the servicemember serving in compliance with military orders.

Domicile is defined as the one place:

- Where you maintain a true, fixed, and permanent home.
- To which you intend to return whenever you are absent.

A military servicemember's nonmilitary spouse is considered a nonresident for tax purposes if the servicemember and spouse have the same domicile outside of California and the spouse is in California solely to be with the servicemember who is serving in compliance with Permanent Change of Station orders.

California may require nonmilitary spouses of military servicemembers to provide proof that they meet the criteria for California personal income tax exemption as set forth in the MSRRA.

Income of a military servicemember's nonmilitary spouse for services performed in California is not California source income subject to state tax if the spouse is in California to be with the servicemember serving in compliance with military orders, and the servicemember and spouse have the same domicile in a state other than California.

For additional information or assistance in determining whether the applicant meets the MSRRA requirements, get FTB Pub. 1032.

Specific Instructions

Payee Instructions

Enter the withholding agent's name.

Enter the payee's information, including the TIN and check the appropriate TIN box.

You must provide a valid TIN as requested on this form. The following are acceptable TINs: social security number (SSN); individual taxpayer identification number (ITIN); federal employer identification number (FEIN); California corporation number (CA Corp no.); or CA SOS file number.

Private Mail Box (PMB) – Include the PMB in the address field. Write "PMB" first, then the box number. Example: 111 Main Street PMB 123.

Foreign Address – Follow the country's practice for entering the city, county, province, state, country, and postal code, as applicable, in the appropriate boxes. **Do not** abbreviate the country name.

Exemption Reason – Check the box that reflects the reason why the payee is exempt from the California income tax withholding requirement.

Withholding Agent Instructions

Do not send this form to the FTB. The withholding agent retains this form for a minimum of five years or until the payee's status changes, and must provide this form to the FTB upon request.

The payee must notify the withholding agent if any of the following situations occur:

- The individual payee becomes a nonresident.
- The corporation ceases to have a permanent place of business in California or ceases to be qualified to do business in California.

- The partnership ceases to have a permanent place of business in California.
- The LLC ceases to have a permanent place of business in California.
- The tax-exempt entity loses its tax-exempt status.

If any of these situations occur, then withholding may be required. For more information, get Form 592, Resident and Nonresident Withholding Statement, Form 592-B, Resident and Nonresident Withholding Tax Statement, and Form 592-V, Payment Voucher for Resident and Nonresident Withholding.

Additional Information

Website: For more information go to **ftb.ca.gov** and search for **nonwage**.
MyFTB offers secure online tax account information and services. For more information and to register, go to **ftb.ca.gov** and search for **myftb**.

Telephone: 888.792.4900 or 916.845.4900, Withholding Services and Compliance phone service

Fax: 916.845.9512

Mail: WITHHOLDING SERVICES AND COMPLIANCE MS F182
FRANCHISE TAX BOARD
PO BOX 942867
SACRAMENTO CA 94267-0651

For questions unrelated to withholding, or to download, view, and print California tax forms and publications, or to access the TTY/TDD numbers, see the information below.

Internet and Telephone Assistance

Website: **ftb.ca.gov**

Telephone: 800.852.5711 from within the United States
916.845.6500 from outside the United States

TTY/TDD: 800.822.6268 for persons with hearing or speech impairments

Asistencia Por Internet y Teléfono

Sitio web: **ftb.ca.gov**

Teléfono: 800.852.5711 dentro de los Estados Unidos
916.845.6500 fuera de los Estados Unidos

TTY/TDD: 800.822.6268 para personas con discapacidades auditivas o de habla

Certification Regarding Debarment, Suspension, and Other Responsibility Matters

The prospective participant certifies to the best of its knowledge and belief that it and the principals:

- (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- (b) Have not within a three year period preceding this proposal been convicted of or had a civil judgement rendered against them or commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction: violation of Federal or State antitrust statute or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- (c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and
- (d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 USC Sec. 1001, a false statement may result in a fine of up to \$10,000 or imprisonment for up to 5 years, or both.

Typed Name & Title of Authorized Representative

Signature of Authorized Representative Date

I am unable to certify to the above statements. My explanation is attached.



CAMPAIGN CONTRIBUTIONS DISCLOSURE

In accordance with California law, bidders and contracting parties are required to disclose, at the time the application is filed, information relating to any campaign contributions made to South Coast Air Quality Management District (SCAQMD) Board Members or members/alternates of the MSRC, including: the name of the party making the contribution (which includes any parent, subsidiary or otherwise related business entity, as defined below), the amount of the contribution, and the date the contribution was made. 2 C.C.R. §18438.8(b).

California law prohibits a party, or an agent, from making campaign contributions to SCAQMD Governing Board Members or members/alternates of the Mobile Source Air Pollution Reduction Review Committee (MSRC) of more than \$250 while their contract or permit is pending before SCAQMD; and further prohibits a campaign contribution from being made for three (3) months following the date of the final decision by the Governing Board or the MSRC on a donor’s contract or permit. Gov’t Code §84308(d). For purposes of reaching the \$250 limit, the campaign contributions of the bidder or contractor plus contributions by its parents, affiliates, and related companies of the contractor or bidder are added together. 2 C.C.R. §18438.5.

In addition, SCAQMD Board Members or members/alternates of the MSRC must abstain from voting on a contract or permit if they have received a campaign contribution from a party or participant to the proceeding, or agent, totaling more than \$250 in the 12-month period prior to the consideration of the item by the Governing Board or the MSRC. Gov’t Code §84308(c).

The list of current SCAQMD Governing Board Members can be found at SCAQMD website (www.aqmd.gov). The list of current MSRC members/alternates can be found at the MSRC website (<http://www.cleantransportationfunding.org>).

SECTION I.

Contractor (Legal Name): _____

DBA, Name _____, County Filed in _____ _____ Corporation, ID No. _____ LLC/LLP, ID No. _____

List any parent, subsidiaries, or otherwise affiliated business entities of Contractor:
(See definition below).

DEFINITIONS

Parent, Subsidiary, or Otherwise Related Business Entity (2 Cal. Code of Regs., §18703.1(d).)

- (1) Parent subsidiary. A parent subsidiary relationship exists when one corporation directly or indirectly owns shares possessing more than 50 percent of the voting power of another corporation.
- (2) Otherwise related business entity. Business entities, including corporations, partnerships, joint ventures and any other organizations and enterprises operated for profit, which do not have a parent subsidiary relationship are otherwise related if any one of the following three tests is met:
 - (A) One business entity has a controlling ownership interest in the other business entity.
 - (B) There is shared management and control between the entities. In determining whether there is shared management and control, consideration should be given to the following factors:
 - (i) The same person or substantially the same person owns and manages the two entities;
 - (ii) There are common or commingled funds or assets;
 - (iii) The business entities share the use of the same offices or employees, or otherwise share activities, resources or personnel on a regular basis;
 - (iv) There is otherwise a regular and close working relationship between the entities; or
 - (C) A controlling owner (50% or greater interest as a shareholder or as a general partner) in one entity also is a controlling owner in the other entity.



South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178

(909) 396-2000 • www.aqmd.gov

STEP 1: Please check all the appropriate boxes

- | | |
|--|--|
| <input type="checkbox"/> Individual (Employee, Governing Board Member) | <input type="checkbox"/> New Request |
| <input type="checkbox"/> Vendor/Contractor | <input type="checkbox"/> Cancel Direct Deposit |
| <input type="checkbox"/> Changed Information | |

STEP 2: Payee Information

Last Name		First Name		Middle Initial	Title
Vendor/Contractor Business Name (if applicable)					
Address				Apartment or P.O. Box Number	
City		State	Zip	Country	
Taxpayer ID Number		Telephone Number		Email Address	

Authorization

- I authorize South Coast Air Quality Management District (SCAQMD) to direct deposit funds to my account in the financial institution as indicated below. I understand that the authorization may be rejected or discontinued by SCAQMD at any time. If any of the above information changes, I will promptly complete a new authorization agreement. If the direct deposit is not stopped before closing an account, funds payable to me will be returned to SCAQMD for distribution. This will delay my payment.
- This authorization remains in effect until SCAQMD receives written notification of changes or cancellation from you.
- I hereby release and hold harmless SCAQMD for any claims or liability to pay for any losses or costs related to insufficient fund transactions that result from failure within the Automated Clearing House network to correctly and timely deposit monies into my account.

STEP 3:

You must verify that your bank is a member of an Automated Clearing House (ACH). Failure to do so could delay the processing of your payment. You must attach a voided check or have your bank complete the bank information and the account holder must sign below.

To be Completed by your Bank

Staple Voided Check Here	Name of Bank/Institution		
	Account Holder Name(s)		
	<input type="checkbox"/> Saving <input type="checkbox"/> Checking	Account Number	Routing Number
	Bank Representative Printed Name	Bank Representative Signature	Date
	ACCOUNT HOLDER SIGNATURE:		Date

For SCAQMD Use Only

Input By _____

Date _____

ATTACHMENT C

Human Subjects Information Form

Basic Information

1. Principal Investigator(s):

2. Study Title: _____
3. Does this study qualify under any of the Federal exemptions for human subjects research? Yes No
 - a. If **Yes**, Select the Exemption Number:
1 2 3 4 5 6 7
More information on Federal Exemptions can be found here:
<https://humansubjects.nih.gov/sites/hs/pdf/HS-Scenarios-for-Forms-E.pdf>

Study Population Characteristics

4. Conditions or Focus of Study:

5. Eligibility Criteria (describe):

6. Age Minimum: _____ and Maximum: _____

Protection Plan

7. Protection of Human Subjects (**Attach Plan, per instructions in Section 3.1 here:** <https://grants.nih.gov/grants/how-to-apply-application-guide/forms-e/general/g.500-phs-human-subjects-and-clinical-trials-information.htm#3.1>)

Protocol Synopsis

8. Brief summary of study protocol:

9. Study design:

10. Primary purpose of study (Check one)

- Treatment
- Prevention
- Diagnostics
- Supportive Care
- Screening
- Health Services Research
- Basic Science
- Device Feasibility
- Other, Specify: [Click here to enter text.](#)

ATTACHMENT D

PARTICIPATION IN THE PROCUREMENT PROCESS

A. It is the policy of South Coast Air Quality Management District (SCAQMD) to ensure that all businesses including minority business enterprises, women business enterprises, disabled veteran business enterprises and small businesses have a fair and equitable opportunity to compete for and participate in SCAQMD contracts.

B. Definitions:

The definition of minority, women or disadvantaged business enterprises set forth below is included for purposes of determining compliance with the affirmative steps requirement described in Paragraph G below on procurements funded in whole or in part with federal grant funds which involve the use of subcontractors. The definition provided for disabled veteran business enterprise, local business, small business enterprise, low-emission vehicle business and off-peak hours delivery business are provided for purposes of determining eligibility for point or cost considerations in the evaluation process.

1. "Women business enterprise" (WBE) as used in this policy means a business enterprise that meets all of the following criteria:
 - a. a business that is at least 51 percent owned by one or more women, or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more women.
 - b. a business whose management and daily business operations are controlled by one or more women.
 - c. a business which is a sole proprietorship, corporation, or partnership with its primary headquarters office located in the United States, which is not a branch or subsidiary of a foreign corporation, foreign firm, or other foreign-based business.
2. "Disabled veteran" as used in this policy is a United States military, naval, or air service veteran with at least 10 percent service-connected disability who is a resident of California.
3. "Disabled veteran business enterprise" (DVBE) as used in this policy means a business enterprise that meets all of the following criteria:
 - a. is a sole proprietorship or partnership of which at least 51 percent is owned by one or more disabled veterans or, in the case of a publicly owned business, at least 51 percent of its stock is owned by one or more disabled veterans; a subsidiary which is wholly owned by a parent corporation but only if at least 51 percent of the voting stock of the parent corporation is

- owned by one or more disabled veterans; or a joint venture in which at least 51 percent of the joint venture's management and control and earnings are held by one or more disabled veterans.
- b. the management and control of the daily business operations are by one or more disabled veterans. The disabled veterans who exercise management and control are not required to be the same disabled veterans as the owners of the business.
 - c. is a sole proprietorship, corporation, or partnership with its primary headquarters office located in the United States, which is not a branch or subsidiary of a foreign corporation, firm, or other foreign-based business.
4. "Local business" as used in this policy means a company that has an ongoing business within geographical boundaries of SCAQMD at the time of bid or proposal submittal and performs 90% of the work related to the contract within the geographical boundaries of SCAQMD and satisfies the requirements of subparagraph H below. Proposals for legislative representation, such as in Sacramento, California or Washington D.C. are not eligible for local business incentive points.
5. "Small business" as used in this policy means a business that meets the following criteria:
- b. 1) an independently owned and operated business; 2) not dominant in its field of operation; 3) together with affiliates is either:
 - A service, construction, or non-manufacturer with 100 or fewer employees, and average annual gross receipts of ten million dollars (\$10,000,000) or less over the previous three years, or
 - A manufacturer with 100 or fewer employees.
 - c. Manufacturer means a business that is both of the following:
 - 3) Primarily engaged in the chemical or mechanical transformation of raw materials or processed substances into new products.
 - 4) Classified between Codes 311000 and 339000, inclusive, of the North American Industrial Classification System (NAICS) Manual published by the United States Office of Management and Budget, 2007 edition.
6. "Joint ventures" as defined in this policy pertaining to certification means that one party to the joint venture is a DVBE or small business and owns at least 51 percent of the joint venture.

7. "Low-Emission Vehicle Business" as used in this policy means a company or contractor that uses low-emission vehicles in conducting deliveries to SCAQMD. Low-emission vehicles include vehicles powered by electric, compressed natural gas (CNG), liquefied natural gas (LNG), liquefied petroleum gas (LPG), ethanol, methanol, hydrogen and diesel retrofitted with particulate matter (PM) traps.
8. "Off-Peak Hours Delivery Business" as used in this policy means a company or contractor that commits to conducting deliveries to SCAQMD during off-peak traffic hours defined as between 10:00 a.m. and 3:00 p.m.
9. "Benefits Incentive Business" as used in this policy means a company or contractor that provides janitorial, security guard or landscaping services to SCAQMD and commits to providing employee health benefits (as defined below in Section VIII.D.2.d) for full time workers with affordable deductible and co-payment terms.
10. "Minority Business Enterprise" as used in this policy means a business that is at least 51 percent owned by one or more minority person(s), or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more or minority persons.
 - a. a business whose management and daily business operations are controlled by one or more minority persons.
 - b. a business which is a sole proprietorship, corporation, or partnership with its primary headquarters office located in the United States, which is not a branch or subsidiary of a foreign corporation, foreign firm, or other foreign-based business.
 - d. "Minority person" for purposes of this policy, means a Black American, Hispanic American, Native-American (including American Indian, Eskimo, Aleut, and Native Hawaiian), Asian-Indian (including a person whose origins are from India, Pakistan, and Bangladesh), Asian-Pacific-American (including a person whose origins are from Japan, China, the Philippines, Vietnam, Korea, Samoa, Guam, the United States Trust Territories of the Pacific, Northern Marianas, Laos, Cambodia, and Taiwan).
11. "Most Favored Customer" as used in this policy means that the SCAQMD will receive at least as favorable pricing, warranties, conditions, benefits and terms as other customers or clients making similar purchases or receiving similar services.
12. "Disadvantaged Business Enterprise" as used in this policy means a business that is an entity owned and/or controlled by a socially and economically disadvantaged individual(s) as described by Title X of the Clean Air Act

Amendments of 1990 (42 U.S.C. 7601 note) (10% statute), and Public Law 102-389 (42 U.S.C. 4370d)(8% statute), respectively;
a Small Business Enterprise (SBE);
a Small Business in a Rural Area (SBRA);
a Labor Surplus Area Firm (LSAF); or
a Historically Underutilized Business (HUB) Zone Small Business Concern, or a concern under a successor program.

- C. Under Request for Quotations (RFQ), DVBEs, DVBE business joint ventures, small businesses, and small business joint ventures shall be granted a preference in an amount equal to 5% of the lowest cost responsive bid. Low-Emission Vehicle Businesses shall be granted a preference in an amount equal to 5 percent of the lowest cost responsive bid. Off-Peak Hours Delivery Businesses shall be granted a preference in an amount equal to 2 percent of the lowest cost responsive bid. Local businesses (if the procurement is not funded in whole or in part by federal grant funds) shall be granted a preference in an amount equal to 2% of the lowest cost responsive bid. Businesses offering Most Favored Customer status shall be granted a preference in an amount equal to 2 percent of the lowest cost responsive bid.
- D. Under Request for Proposals, DVBEs, DVBE joint ventures, small businesses, and small business joint ventures shall be awarded ten (10) points in the evaluation process. A non-DVBE or large business shall receive seven (7) points for subcontracting at least twenty-five (25%) of the total contract value to a DVBE and/or small business. Low-Emission Vehicle Businesses shall be awarded five (5) points in the evaluation process. On procurements which are not funded in whole or in part by federal grant funds local businesses shall receive five (5) points. Off-Peak Hours Delivery Businesses shall be awarded two (2) points in the evaluation process. Businesses offering Most Favored Customer status shall be awarded two (2) points in the evaluation process.
- E. SCAQMD will ensure that discrimination in the award and performance of contracts does not occur on the basis of race, color, sex, national origin, marital status, sexual preference, creed, ancestry, medical condition, or retaliation for having filed a discrimination complaint in the performance of SCAQMD contractual obligations.
- F. SCAQMD requires Contractor to be in compliance with all state and federal laws and regulations with respect to its employees throughout the term of any awarded contract, including state minimum wage laws and OSHA requirements.
- G. When contracts are funded in whole or in part by federal funds, and if subcontracts are to be let, the Contractor must comply with the following, evidencing a good faith effort to solicit disadvantaged businesses. Contractor shall submit a certification signed by an authorized official affirming its status as a MBE or WBE, as applicable, at the time of contract execution. SCAQMD reserves the right to request documentation demonstrating compliance with the following good faith efforts prior to contract execution.
 - 1. Ensure Disadvantaged Business Enterprises (DBEs) are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities. For Indian Tribal, State and Local

Government recipients, this will include placing DBEs on solicitation lists and soliciting them whenever they are potential sources.

2. Make information on forthcoming opportunities available to DBEs and arrange time frames for contracts and establish delivery schedules, where the requirements permit, in a way that encourages and facilitates participation by DBEs in the competitive process. This includes, whenever possible, posting solicitations for bids or proposals for a minimum of 30 calendar days before the bid or proposal closing date.
 3. Consider in the contracting process whether firms competing for large contracts could subcontract with DBEs. For Indian Tribal, State and Local Government recipients, this will include dividing total requirements when economically feasible into smaller tasks or quantities to permit maximum participation by DBEs in the competitive process.
 4. Encourage contracting with a consortium of DBEs when a contract is too large for one of these firms to handle individually.
 5. Using the services and assistance of the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.
 6. If the prime contractor awards subcontracts, require the prime contractor to take the above steps.
- H. To the extent that any conflict exists between this policy and any requirements imposed by federal and state law relating to participation in a contract by a certified MBE/WBE/DVBE as a condition of receipt of federal or state funds, the federal or state requirements shall prevail.
- I. When contracts are not funded in whole or in part by federal grant funds, a local business preference will be awarded. For such contracts that involve the purchase of commercial off-the-shelf products, local business preference will be given to suppliers or distributors of commercial off-the-shelf products who maintain an ongoing business within the geographical boundaries of SCAQMD. However, if the subject matter of the RFP or RFQ calls for the fabrication or manufacture of custom products, only companies performing 90% of the manufacturing or fabrication effort within the geographical boundaries of SCAQMD shall be entitled to the local business preference. Proposals for legislative representation, such as in Sacramento, California or Washington D.C. are not eligible for local business incentive points.
- J. In compliance with federal fair share requirements set forth in 40 CFR Part 33, SCAQMD shall establish a fair share goal annually for expenditures with federal funds covered by its procurement policy.

BOARD MEETING DATE: November 2, 2018

AGENDA NO. 9

PROPOSAL: Issue RFP to Evaluate Meteorological Factors and Trends Contributing to Recent Poor Air Quality in South Coast Air Basin

SYNOPSIS: Despite significant air quality improvements achieved over the last several decades, the South Coast Air Basin (SCAB) has experienced high ozone levels in recent years. Recent high temperatures and increased air stagnation have contributed to increased ozone levels despite continuing reductions in emissions. To assess these recent trends, staff is proposing to conduct a comprehensive study to evaluate trends in meteorological factors that can adversely impact air quality in the SCAB. The study will assist staff to better understand whether recent weather trends are expected to continue and the relationship to a changing climate, thus informing the development of more effective strategies for improving air quality in the future. This action is to issue an RFP to solicit bids to perform a comprehensive meteorological study to evaluate various factors and trends conducive to recent poor air quality in the SCAB.

COMMITTEE: Mobile Source, October 19, 2018; Recommended for Approval

RECOMMENDED ACTION:

Approve the release of RFP #2019-08 to solicit bids to perform a comprehensive meteorological study to evaluate various factors and trends conducive to recent poor air quality in the South Coast Air Basin.

Wayne Natri
Executive Officer

PMF:SR:ZP:SML

Background

The South Coast Air Basin (SCAB) experiences some of the worst air quality in the nation despite having achieved significant improvement in air quality over the last several decades. However, the progress in reducing ozone and PM2.5 concentrations has slowed down or reversed in recent years. Persistent drought during the years of

2013 through 2016 hindered the District's effort to reach attainment of the PM2.5 annual standard, and 2016 through 2018 exhibited unusually high ozone concentrations. Over the past several decades, the regulatory emissions inventories included in AQMPs and State Implementation Plans show steady decreases in emissions as a result of regulatory and other actions. Measurements from ground based air monitoring stations and retrievals from satellite measurements also confirm that nitrogen oxides and carbon monoxide levels are decreasing, consistent with the expected decline based on emissions inventories. The relative stabilization of PM and ozone concentrations despite decreases in emissions highlight the significance of meteorological effects on air quality. It is therefore important to better understand how meteorological factors and trends have impacted air quality and how they have contributed to the ozone and PM2.5 trends observed in recent years.

The persistent episodes of high ozone and PM2.5 concentrations, coupled with more frequent and record-breaking high temperatures in recent years, raise the question as to whether the regional climate in the SCAB is changing in such a manner that weather conditions leading to poor air quality will become more frequent in the future. Comparing recent weather trends with predicted global climate change scenarios can assist in answering this important question, and informing the development of more effective strategies for improving air quality and protecting public health.

For example, if the study determines that increased ambient air temperatures and other meteorological variables increase the pollutant emissions profile for various combustion fuels, alternative clean burning fuels and their related technologies can be focused on to mitigate these emissions.

Proposal

To evaluate meteorological factors and trends contributing to recent adverse air quality in the SCAB, staff is seeking Board approval to release an RFP to solicit qualified contractors to conduct this meteorological study. The study will assist staff in better understanding the complex dynamics of air pollution and to develop more effective strategies in improving air quality in the future given changing climate conditions. Funds for this proposal would not exceed \$250,000 from the Clean Fuels Program Fund (31), subject to Board approval.

Benefits to SCAQMD

The project to evaluate meteorological factors and trends contributing to recent poor air quality in the SCAB is included in the *Technology Advancement Office Clean Fuels Program Draft 2019 Plan Update* under the category "Fuel/Emissions Studies".

Bid Evaluation

Proposals received will be evaluated by a diverse, technically-qualified panel in accordance with criteria contained in the attached RFP. The panel will make recommendations, and the final selection of the Contractor(s) will be subject to approval by the Board.

Outreach

In accordance with SCAQMD's Procurement Policy and Procedure, a public notice advertising the RFP and inviting bids will be published in the Los Angeles Times, the Orange County Register, the San Bernardino Sun, and Riverside County's Press Enterprise newspapers to leverage the most cost-effective method of outreach to the South Coast Basin.

Additionally, potential bidders may be notified utilizing SCAQMD's own electronic listing of certified minority vendors. Notice of the RFP will be emailed to the Black and Latino Legislative Caucuses and various minority chambers of commerce and business associations, and placed on the Internet at SCAQMD's website (<http://www.aqmd.gov>) where it can be viewed by making the selection "Grants & Bids."

Staff will additionally reach out to potential qualified bidders whose work has been cited in related literature or referred to staff by other subject experts.

Resource Impacts

Funding for a contract(s) will not exceed \$250,000 from Clean Fuels Program Fund (31), subject to Board approval. Sufficient funds are available from the Clean Fuels Fund (31), established as a special revenue fund resulting from the state-mandated Clean Fuels Program, which is established under Health and Safety Code Sections 40448.5 and 40512. Vehicle Code Section 9250.11 establishes mechanisms to collect revenues from mobile sources to support the Clean Fuels Program through projects to increase the utilization of clean fuels, including the development of the necessary advanced enabling technologies. Funds collected from motor vehicles are restricted, by statute, to be used for projects and program activities related to mobile sources. The Clean Fuels Program has been used in the past to evaluate the emissions impacts of mobile sources and the benefits of clean fuels.

Attachment

RFP #2019-08



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

REQUEST FOR PROPOSALS

Evaluate Meteorological Factors and Trends Contributing to Recent Poor Air Quality in the South Coast Air Basin

P2019-08

South Coast Air Quality Management District (SCAQMD) requests proposals for the following purpose according to terms and conditions attached. In the preparation of this Request for Proposals (RFP) the words "Proposer," "Contractor," "Consultant," "Bidder" and "Firm" are used interchangeably.

PURPOSE

The purpose of this Request for Proposals (RFP) is to solicit bids to evaluate meteorological factors contributing to high ozone and PM_{2.5} episodes occurred in the South Coast air Basin (SCAB). Despite significant air quality improvements achieved over the last several decades, the SCAB has experienced unusually high ozone levels in recent years. High temperatures and increased air stagnation following the drought years have contributed to increased ozone levels despite continuing reductions in emissions. This indicates the need of a comprehensive study to evaluate the trends of meteorological factors that can adversely impact air quality in the Basin. The study will assist staff to better understand whether recent weather trends are expected to continue and the relationship to a changing climate, thus informing the development of more effective strategies for improving air quality in the future.

The total funding for this contract will be up to \$250,000 for the fiscal year 2018-2019.

INDEX - The following are contained in this RFP:

Section I	Background/Information
Section II	Contact Person
Section III	Schedule of Events
Section IV	Participation in the Procurement Process
Section V	Statement of Work/Schedule of Deliverables
Section VI	Required Qualifications
Section VII	Proposal Submittal Requirements
Section VIII	Proposal Submission
Section IX	Proposal Evaluation/Contractor Selection Criteria
Section X	Funding
Section XI	Sample Contract

Attachment A - Participation in the Procurement Process

Attachment B - Certifications and Representations

SECTION I: BACKGROUND/INFORMATION

The SCAB experiences some of the worst air quality in the nation despite significant air quality improvements achieved over the last several decades. SCAB region covers a population of over 16 million, 10 million vehicles, the largest combined seaport in the nation, and thousands of other emission sources. In addition, there are biogenic emissions that not only contribute to adverse air quality, but also function as natural barriers over mountain ranges for the ventilation of air pollutants out of the SCAB. Finally, persistent high pressure and clear sky conditions throughout the year in the SCAB promote photochemical reactions leading to the highest ozone levels in the nation. Despite having these conditions conducive to air pollution, the District has been successful in reducing ozone and PM2.5 concentrations over the past decades as evident in the ambient monitoring data indicating significant progress.

However, the progress in ozone and PM2.5 concentrations have slowed down in recent years. Persistent drought during the years of 2013 through 2016 hindered the District’s effort to reach attainment of PM2.5 annual standard and pushed the attainment deadline further into future years. In addition, 2016 and 2017 have experienced unusually high ozone concentrations, which resulted in a plateau or slight reverse in the ozone progress trend (Figure 1).

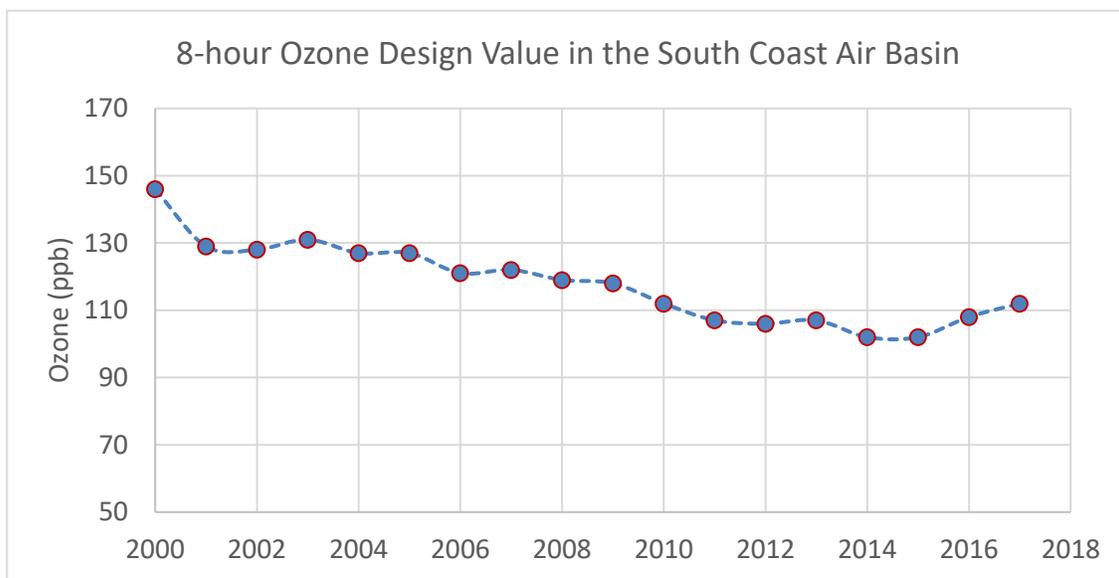


Figure 1. Trend of 8-hour ozone design value in South Coast Air Basin

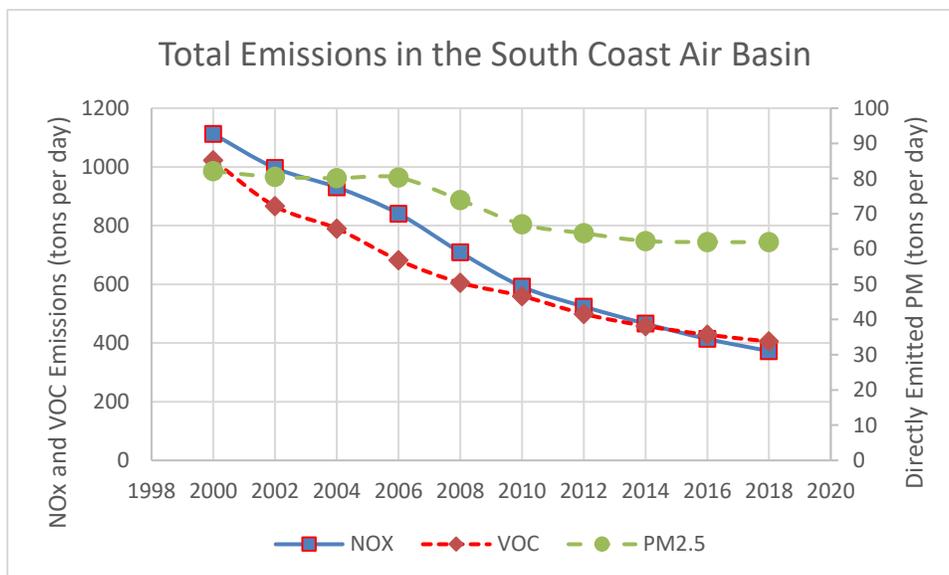


Figure 2. The total emissions of NOx, VOC and directly emitted PM in the South Coast Air Basin

As shown in Figure 2, the regulatory emissions inventory included in Air Quality Management Plans (AQMPs)/State Implementation Plans (SIPs) shows steady decrease over past decades. Measurements from ground based air monitoring stations and retrievals from satellite measurements also confirm that nitrogen oxides and carbon monoxide are in a steady decrease trend, which is consistent with regulatory emissions inventory trends. These improvements highlight the significance of meteorological effects on air quality. Meteorological variables such as stagnation, solar radiation, cloud cover, ventilation, vertical mixing, subsidence, and moisture are known to influence air quality. Yet, further evaluation is necessary on how these variables attributed to the adverse air quality observed in the past years in the SCAB. This analysis should evaluate the impact of individual variables as well as the interactions among them.

In addition, the persistent episodes of high ozone and PM2.5 concentrations, coupled with more frequent and record-breaking high temperature episodes in recent years raise the specter whether the regional climate in SCAB has shifted in such a manner that more frequent occurrence of high ozone and PM2.5 episodes would become the norm in the foreseeable future. Thus, the potential effect of climate change on the meteorological factors that are conducive to poor air quality in the SCAB need to be thoroughly analyzed. Peer-reviewed studies on regional and/or global climate model scenarios can assist in responding to this question.

This RFP is to solicit qualified contractors to determine what meteorological factors contribute to high ozone and PM2.5 episodes, to analyze the meteorological trend conducive to the recent poor air quality from a historical perspective and to project to near future years in regional climate change perspective.

SECTION II: CONTACT PERSON:

Questions regarding the content or intent of this RFP should be addressed to:

Sang-Mi Lee, Ph.D.
 Program Supervisor
 Planning, Rule Development and Area Sources
 South Coast Air Quality Management District
 21865 Copley Drive
 Diamond Bar, CA 91765-4178
 (909) 396-3169
 E-mail: slee@aqmd.gov

Questions regarding the RFP submission procedural matters should be addressed to:

Dean Hughbanks
 Procurement Manager
 South Coast Air Quality Management District
 21865 Copley Drive
 Diamond Bar, CA 91765-4178
 (909) 396-2808
 E-mail: dhughbanks@aqmd.gov

SECTION III: SCHEDULE OF EVENTS

Date	Event
Nov 2, 2018	RFP Released
Dec 14, 2018	Proposals Due to SCAQMD - No Later Than 5:00 pm
Dec 14, 2018 – Jan 11, 2019	Proposal Evaluations
January 18, 2019	Interviews, if required
March 1, 2019	Governing Board Approval
March 15, 2019	Anticipated Contract Execution

No bidders' conference will be held in connection with this RFP. At this time, it is not anticipated that interviews will be conducted, however, should this be needed, the dates above may be subject to change.

SECTION IV: PARTICIPATION IN THE PROCUREMENT PROCESS

It is the policy of SCAQMD to ensure that all businesses including minority business enterprises, women business enterprises, disabled veteran business enterprises and small businesses have a fair and equitable opportunity to compete for and participate in SCAQMD contracts. Attachment A to this RFP contains definitions and further information.

SECTION V: STATEMENT OF WORK/SCHEDULE OF DELIVERABLES

Statement of Work

The contractor shall provide a full evaluation of meteorological factors conducive to high air quality episodes in the SCAB. The contractor shall evaluate factors including, but not limited to, state-of-the science meteorological and climate models, ground based measurements, satellite retrieved data, upper air measurements, path averaged remote sensing data, and mid- to long-term climate models. The contractor's technical proposal must address the following tasks.

- 1 *Determine a set of meteorological factors which contribute to high ozone and PM2.5 episodes, respectively.*

The contractor will conduct a sound technical analysis of ozone, PM2.5 and meteorological data collected in the SCAB over the last decade or as far back as necessary. The data will include, but not limited to, surface measurements of ozone, PM2.5 and their precursors, air quality and meteorological parameters from satellite data retrievals, ground-based and upper air measurements, and path-averaged remote sensing. It is anticipated that the analysis will result in a set of factors which contribute to high ozone and PM2.5 episodes, respectively.

- 2 *Analyze the recent meteorological and air quality trends.*

Based on the results from task 1, the contractor will provide an analysis and explanation of recent trends in meteorological parameters and ozone and PM2.5 concentrations. The contractor should analyze whether the observed meteorological trends fall within the projected meteorological trends due to climate change, and if the prevalence of extreme high temperatures and other extreme conditions observed during the last years are expected to continue.

- 3 *Project directions of recent air quality trends.*

Based on results from tasks 1 and 2, the contractor will analyze available meteorological and climate modeling data pertaining to the SCAB and conduct additional meteorological and/or climate modeling. It is anticipated that the contractor will project a general direction of ozone and PM2.5 trends in the near future absent of emissions reductions or a probability estimate of occurrence of recent events in the near future.

- 4 *Transfer data.*

The contractor shall transfer all data and its derivatives used and or developed in tasks above, including relevant documentation, to the District.

- 5 *Technical Reports and Study Publication*

The contractor must submit a progress report after completion of each of tasks 1 through 3, a draft final report to the District in conjunction with task 4 and a final

report by the completion of task 5. The contractor is encouraged to publish the study results in peer-reviewed technical journals or technical conference proceedings, subjected to co-authorship, or customary acknowledgement and disclaims.

Schedule of Deliverables

The contractor shall submit progress report after completing each of tasks 1 through 3 within nine calendar months from contract signing. Tasks 4 and 5 shall be completed from one calendar year from the contract signing. Journal manuscripts are due in one year when the contract is expected to complete. All deliverables are subject to SCAQMD staff's review and approval before a task is deemed completed.

SECTION VI: REQUIRED QUALIFICATIONS

A. Persons or firms proposing to bid on this proposal must be qualified, experienced, and competent in air pollution meteorology, atmospheric chemistry and physics. This include, but not limited to, photochemistry, regional climate and meteorology of Southern California, land use modeling, vegetation and dry deposition modeling, global and synoptic scale meteorology, meso and micro scale meteorology, aerosol chemistry and dynamics, planetary boundary layer (PBL) dynamics, regulatory modeling for assessing control strategies and source impacts, and other meteorological and climatological issues. Proposals submitted to the SCAQMD must include a statement of the contractor's general qualifications demonstrating the contractor's ability to fulfill the requirements of this RFP. The proposal should demonstrate the following:

1. Demonstrated general knowledge and experience in meteorology – global, synoptic, meso and micro scale meteorology, atmospheric turbulence and air pollution dynamics and global/regional climate change
2. Demonstrated knowledge and experience in understanding the complex meteorology, climate and air quality characteristics of Southern California.
3. Extensive experience in analyzing large scale air quality and meteorological data. Past experience in analyzing air quality and meteorological data from SCAB and integrating data from different sources would be especially valuable.
4. Experience in downscaling climate models to California or SCAB
5. Extensive experience in atmospheric chemistry using measurements and numerical modeling.

To illustrate the contractor's experience regarding the qualifications listed above, the proposal should include a list of projects, publications in peer-reviewed journals, and presentations at national or international conferences that are relevant to the items listed above. The contractor should provide a list of the required qualification and be prepared to provide a copy of the work upon request.

B. Proposer must submit the following:

1. Resumes or similar statement of qualifications of person or persons who may be designated as primary investigator (PI) and all other involved staff.
2. List of related work experiences that were presented at major international or national conferences or published in leading academic journals.
3. Summary of proposer's general qualifications to meet required qualifications and fulfill statement of work, including additional personnel and resources beyond those of the PIs.
4. Short and concise summary of projects conducted by the proposer during the last five years. The projects should be relevant to the scope of this RFP.

SECTION VII: PROPOSAL SUBMITTAL REQUIREMENTS

Submitted proposals must follow the format outlined below and all requested information must be supplied. Failure to submit proposals in the required format will result in elimination from proposal evaluation. SCAQMD may modify the RFP or issue supplementary information or guidelines during the proposal preparation period prior to the due date. Please check our website for updates (<http://www.aqmd.gov/grants-bids>). The cost for developing the proposal is the responsibility of the Contractor, and shall not be chargeable to SCAQMD.

Each proposal must be submitted in three separate volumes:

- Volume I - Technical Proposal
- Volume II - Cost Proposal
- Volume III - Certifications and Representations included in Attachment B to this RFP, must be completed and executed by an authorized official of the Contractor.

A separate cover letter including the name, address, and telephone number of the contractor, and signed by the person or persons authorized to represent the Firm should accompany the proposal submission. Firm contact information as follows should also be included in the cover letter:

1. Address and telephone number of office in, or nearest to, Diamond Bar, California.
2. Name and title of Firm's representative designated as contact.

A separate Table of Contents should be provided for Volumes I and II.

VOLUME I - TECHNICAL PROPOSAL

DO NOT INCLUDE ANY COST INFORMATION IN THE TECHNICAL VOLUME

Summary (Section A) - State overall approach to meeting the objectives and satisfying the scope of work to be performed, the sequence of activities, and a description of methodology or techniques to be used.

Program Schedule (Section B) - Provide projected milestones or benchmarks for completing the project (to include reports) within the total time allowed.

Project Organization (Section C) - Describe the proposed management structure, program monitoring procedures, and organization of the proposed team. Provide a statement detailing your approach to the project, specifically address the Firm's ability and willingness to commit and maintain staffing to successfully complete the project on the proposed schedule.

Qualifications (Section D) - Describe the technical capabilities of the Firm. Provide references of other similar studies or projects performed during the last five years demonstrating ability to successfully complete the work. Include contact name, title, and telephone number for any references listed. Provide a statement of your Firm's background and related experience in performing similar services for other governmental organizations.

Assigned Personnel (Section E) - Provide the following information about the staff to be assigned to this project:

1. List all key personnel assigned to the project by level, name and location. Provide a resume or similar statement describing the background, qualifications and experience of the lead person and all persons assigned to the project. Substitution of project manager or lead personnel will not be permitted without prior written approval of SCAQMD.
2. Provide a spreadsheet of the labor hours proposed for each labor category at the task level.
3. Provide a statement indicating whether or not 90% of the work will be performed within the geographical boundaries of SCAQMD.
4. Provide a statement of education and training programs provided to, or required of, the staff identified for participation in the project, particularly with reference to management consulting, governmental practices and procedures, and technical matters.
5. Provide a summary of your Firm's general qualifications to meet required qualifications and fulfill statement of work, including additional Firm personnel and resources beyond those who may be assigned to the project.

Subcontractors (Section F) - This project may require expertise in multiple technical areas. List any subcontractors that will be used, identifying functions to be performed by them, their related qualifications and experience and the total number of hours or percentage of time they will spend on the project.

Conflict of Interest (Section G) - Address possible conflicts of interest with other clients affected by actions performed by the Firm on behalf of SCAQMD. SCAQMD recognizes that prospective Contractors may be performing similar projects for other clients. Include a complete list of such clients for the past three (3) years with the type of work performed and the total number of years performing such tasks for each client. Although the Proposer will not be automatically disqualified by reason of work performed for such clients, SCAQMD reserves the right to consider the nature and extent of such work in evaluating the proposal.

Additional Data (Section H) - Provide other essential data that may assist in the evaluation of this proposal.

VOLUME II - COST PROPOSAL

Name and Address - The Cost Proposal must list the name and complete address of the Proposer in the upper left-hand corner.

Cost Proposal – SCAQMD anticipates awarding a fixed price contract. Cost information must be provided as listed below:

1. Detail must be provided by the following categories:
 - A. Labor – The Cost Proposal must list the fully-burdened hourly rates and the total number of hours estimated for each level of professional and administrative staff to be used to perform the tasks required by this RFP. Costs should be estimated for each of the components of the work plan.
 - B. Subcontractor Costs - List subcontractor costs and identify subcontractors by name. Itemize subcontractor charges per hour or per day.
 - C. Travel Costs - Indicate amount of travel cost and basis of estimate to include trip destination, purpose of trip, length of trip, airline fare or mileage expense, per diem costs, lodging and car rental.
 - D. Other Direct Costs -This category may include such items as postage and mailing expense, printing and reproduction costs, etc. Provide a basis of estimate for these costs.
2. It is the policy of the SCAQMD to receive at least as favorable pricing, warranties, conditions, benefits and terms as other customers or clients making similar purchases or receiving similar services. SCAQMD will give preference, where appropriate, to vendors who certify that they will provide “most favored customer” status to the SCAQMD. To receive preference points, Proposer shall certify that SCAQMD is receiving “most favored customer” pricing in the Business Status Certifications page of Volume III, Attachment B – Certifications and Representations.

VOLUME III - CERTIFICATIONS AND REPRESENTATIONS (see Attachment B to this RFP)

SECTION VIII: PROPOSAL SUBMISSION

All proposals must be submitted according to specifications set forth in the section above, and this section. Failure to adhere to these specifications may be cause for rejection of the proposal.

Signature - All proposals must be signed by an authorized representative of the Proposer.

Due Date - All proposals are due no later than 5:00 p.m., December 14, 2018, and should be directed to:

Procurement Unit
 South Coast Air Quality Management District
 21865 Copley Drive
 Diamond Bar, CA 91765-4178
 (909) 396-3520

Submittal - Submit four (4) complete paper copies and an electronic copy of the proposal in a sealed envelope, plainly marked in the upper left-hand corner with the name and address of the Proposer and the words "Request for Proposals P2019-08."

Late bids/proposals will not be accepted under any circumstances.

Grounds for Rejection - A proposal may be immediately rejected if:

- It is not prepared in the format described, or
- It is signed by an individual not authorized to represent the Firm.

Modification or Withdrawal - Once submitted, proposals cannot be altered without the prior written consent of SCAQMD. All proposals shall constitute firm offers and may not be withdrawn for a period of ninety (90) days following the last day to accept proposals.

SECTION IX: PROPOSAL EVALUATION/CONTRACTOR SELECTION CRITERIA

- A. Proposals will be evaluated by a panel of three to five SCAQMD staff members and/or experts from other agencies familiar with the subject matter of the project. The panel shall be appointed by the Executive Officer or his designee. In addition, the evaluation panel may include such outside public sector or academic community expertise as deemed desirable by the Executive Officer. The panel will make a recommendation to the Executive Officer and/or the Governing Board of SCAQMD for final selection of a contractor and negotiation of a contract.
- B. Each member of the evaluation panel shall be accorded equal weight in his or her rating of proposals. The evaluation panel members shall evaluate the proposals according to the specified criteria and numerical weightings set forth below.

1. Proposal Evaluation Criteria

R&D Projects Requiring Technical or Scientific Expertise, or Special Projects Requiring Unique Knowledge or Abilities

Understanding the Problem	20
Technical/Management Approach	20
Contractor Qualifications	15
Previous Experience on Similar Projects	15
Cost	<u>30</u>
TOTAL	100

Additional Points

Small Business or Small Business Joint Venture	10
DVBE or DVBE Joint Venture	10
Use of DVBE or Small Business Subcontractors	7
Low-Emission Vehicle Business	5
Local Business (Non-Federally Funded Projects Only)	5
Off-Peak Hours Delivery Business	2
Most Favored Customer	2

The cumulative points awarded for small business, DVBE, use of small business or DVBE subcontractors, low-emission vehicle business, local business, and off-peak hours delivery business shall not exceed 15 points. Most Favored Customer status incentive points shall be added, as applicable for a total of 17 points.

Self-Certification for Additional Points

The award of these additional points shall be contingent upon Proposer completing the Self-Certification section of Attachment B – Certifications and Representations and/or inclusion of a statement in the proposal self-certifying that Proposer qualifies for additional points as detailed above.

2. To receive additional points in the evaluation process for the categories of Small Business or Small Business Joint Venture, DVBE or DVBE Joint Venture or Local Business (for non-federally funded projects), the proposer must submit a self-certification or certification from the State of California Office of Small Business Certification and Resources at the time of proposal submission certifying that the proposer meets the requirements set forth in Section III. To receive points for the use of DVBE and/or Small Business subcontractors, at least 25 percent of the total contract value must be subcontracted to DVBEs and/or Small Businesses. To receive points as a Low-Emission Vehicle Business, the proposer must demonstrate to the Executive Officer, or designee, that supplies and materials delivered to SCAQMD are delivered in vehicles that operate on either clean-fuels or if powered by diesel fuel, that the vehicles have particulate traps installed. To receive points as a Local Business, the proposer must affirm that it has an ongoing business within the South Coast AQMD at the time of bid/proposal submittal and that 90% of the work related to the contract will be performed within the South Coast AQMD. Proposals for legislative representation, such as in Sacramento, California or Washington D.C. are not eligible for local business incentive points. Federally funded projects are not eligible for local business incentive points. To receive points as an Off-Peak Hours Delivery Business, the proposer must submit, at proposal submission, certification of its commitment to delivering supplies and materials to SCAQMD between the hours of 10:00 a.m. and 3:00 p.m. To receive points for Most Favored Customer status, the proposer must submit, at proposal submission, certification of its commitment to provide most favored customer status to the SCAQMD. The cumulative points awarded

for small business, DVBE, use of Small Business or DVBE Subcontractors, Local Business, Low-Emission Vehicle Business and Off-Peak Hour Delivery Business shall not exceed 15 points.

3. For procurement of Research and Development (R & D) projects or projects requiring technical or scientific expertise or special projects requiring unique knowledge and abilities, technical factors including past experience shall be weighted at 70 points and cost shall be weighted at 30 points. A proposal must receive at least 56 out of 70 points on R & D projects and projects requiring technical or scientific expertise or special projects requiring unique knowledge and abilities, in order to be deemed qualified for award.
 4. The lowest cost proposal will be awarded the maximum cost points available and all other cost proposals will receive points on a prorated basis. For example if the lowest cost proposal is \$100,000 and the maximum points available are 30 points, this proposal would receive the full 30 points. If the next lowest cost proposal is \$110,000 it would receive 27 points reflecting the fact that it is 10% higher than the lowest cost (90% of 30 points = 27 points).
- C. During the selection process the evaluation panel may wish to interview some proposers for clarification purposes only. No new material will be permitted at this time. Additional information provided during the bid review process is limited to clarification by the Proposer of information presented in his/her proposal, upon request by SCAQMD.
- D. The Executive Officer or Governing Board may award the contract to a Proposer other than the Proposer receiving the highest rating in the event the Governing Board determines that another Proposer from among those technically qualified would provide the best value to SCAQMD considering cost and technical factors. The determination shall be based solely on the Evaluation Criteria contained in the Request for Proposal (RFP), on evidence provided in the proposal and on any other evidence provided during the bid review process.
- E. Selection will be made based on the above-described criteria and rating factors. The selection will be made by and is subject to Executive Officer or Governing Board approval. Proposers may be notified of the results by letter.
- F. The Governing Board has approved a Bid Protest Procedure which provides a process for a Bidder or prospective Bidder to submit a written protest to SCAQMD Procurement Manager in recognition of two types of protests: Protest Regarding Solicitation and Protest Regarding Award of a Contract. Copies of the Bid Protest Policy can be secured through a request to SCAQMD Procurement Department.
- G. The Executive Officer or Governing Board may award contracts to more than one proposer if in (his or their) sole judgment the purposes of the (contract or award) would best be served by selecting multiple proposers.
- H. If additional funds become available, the Executive Officer or Governing Board may increase the amount awarded. The Executive Officer or Governing Board may also select additional proposers for a grant or contract if additional funds become available.
- I. Disposition of Proposals – Pursuant to SCAQMD's Procurement Policy and Procedure, SCAQMD reserves the right to reject any or all proposals. All proposals become the

property of SCAQMD, and are subject to the California Public Records Act. One copy of the proposal shall be retained for SCAQMD files. Additional copies and materials will be returned only if requested and at the proposer's expense.

- J. If proposal submittal is for a Public Works project as defined by State of California Labor Code Section 1720, Proposer is required to include Contractor Registration No. in Attachment B. Proposal submittal will be deemed as non-responsive and Bidder may be disqualified if Contractor Registration No. is not included in Attachment B. Proposer is alerted to changes to California Prevailing Wage compliance requirements as defined in Senate Bill 854 (Stat. 2014, Chapter 28), and California Labor Code Sections 1770, 1771 and 1725.**

SECTION X: FUNDING

The total funding for the work contemplated by this RFP shall not exceed **\$250,000**.

SECTION XI: SAMPLE CONTRACT

A sample contract to carry out the work described in this RFP is available on SCAQMD's website at <http://www.aqmd.gov/grants-bids> or upon request from the RFP Contact Person (Section II).

ATTACHMENT A

PARTICIPATION IN THE PROCUREMENT PROCESS

A. It is the policy of South Coast Air Quality Management District (SCAQMD) to ensure that all businesses including minority business enterprises, women business enterprises, disabled veteran business enterprises and small businesses have a fair and equitable opportunity to compete for and participate in SCAQMD contracts.

B. Definitions:

The definition of minority, women or disadvantaged business enterprises set forth below is included for purposes of determining compliance with the affirmative steps requirement described in Paragraph G below on procurements funded in whole or in part with federal grant funds which involve the use of subcontractors. The definition provided for disabled veteran business enterprise, local business, small business enterprise, low-emission vehicle business and off-peak hours delivery business are provided for purposes of determining eligibility for point or cost considerations in the evaluation process.

1. "Women business enterprise" (WBE) as used in this policy means a business enterprise that meets all of the following criteria:
 - a. a business that is at least 51 percent owned by one or more women, or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more women.
 - b. a business whose management and daily business operations are controlled by one or more women.
 - c. a business which is a sole proprietorship, corporation, or partnership with its primary headquarters office located in the United States, which is not a branch or subsidiary of a foreign corporation, foreign firm, or other foreign-based business.
2. "Disabled veteran" as used in this policy is a United States military, naval, or air service veteran with at least 10 percent service-connected disability who is a resident of California.
3. "Disabled veteran business enterprise" (DVBE) as used in this policy means a business enterprise that meets all of the following criteria:
 - a. is a sole proprietorship or partnership of which at least 51 percent is owned by one or more disabled veterans or, in the case of a publicly owned business, at least 51 percent of its stock is owned by one or more disabled veterans; a subsidiary which is wholly owned by a parent corporation but only if at least 51 percent of the voting stock of the parent corporation is owned by one or more disabled veterans; or a joint venture in which at least 51 percent of the joint venture's management and control and earnings are held by one or more disabled veterans.
 - b. the management and control of the daily business operations are by one or more disabled veterans. The disabled veterans who exercise management and control are not required to be the same disabled veterans as the owners of the business.

- c. is a sole proprietorship, corporation, or partnership with its primary headquarters office located in the United States, which is not a branch or subsidiary of a foreign corporation, firm, or other foreign-based business.
4. "Local business" as used in this policy means a company that has an ongoing business within geographical boundaries of SCAQMD at the time of bid or proposal submittal and performs 90% of the work related to the contract within the geographical boundaries of SCAQMD and satisfies the requirements of subparagraph H below. Proposals for legislative representation, such as in Sacramento, California or Washington D.C. are not eligible for local business incentive points.
5. "Small business" as used in this policy means a business that meets the following criteria:
 - a. 1) an independently owned and operated business; 2) not dominant in its field of operation; 3) together with affiliates is either:
 - A service, construction, or non-manufacturer with 100 or fewer employees, and average annual gross receipts of ten million dollars (\$10,000,000) or less over the previous three years, or
 - A manufacturer with 100 or fewer employees.
 - b. Manufacturer means a business that is both of the following:
 - 1) Primarily engaged in the chemical or mechanical transformation of raw materials or processed substances into new products.
 - 2) Classified between Codes 311000 and 339000, inclusive, of the North American Industrial Classification System (NAICS) Manual published by the United States Office of Management and Budget, 2007 edition.
6. "Joint ventures" as defined in this policy pertaining to certification means that one party to the joint venture is a DVBE or small business and owns at least 51 percent of the joint venture.
7. "Low-Emission Vehicle Business" as used in this policy means a company or contractor that uses low-emission vehicles in conducting deliveries to SCAQMD. Low-emission vehicles include vehicles powered by electric, compressed natural gas (CNG), liquefied natural gas (LNG), liquefied petroleum gas (LPG), ethanol, methanol, hydrogen and diesel retrofitted with particulate matter (PM) traps.
8. "Off-Peak Hours Delivery Business" as used in this policy means a company or contractor that commits to conducting deliveries to SCAQMD during off-peak traffic hours defined as between 10:00 a.m. and 3:00 p.m.

9. "Benefits Incentive Business" as used in this policy means a company or contractor that provides janitorial, security guard or landscaping services to SCAQMD and commits to providing employee health benefits (as defined below in Section VIII.D.2.d) for full time workers with affordable deductible and co-payment terms.

10. "Minority Business Enterprise" as used in this policy means a business that is at least 51 percent owned by one or more minority person(s), or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more or minority persons.

a. a business whose management and daily business operations are controlled by one or more minority persons.

b. a business which is a sole proprietorship, corporation, or partnership with its primary headquarters office located in the United States, which is not a branch or subsidiary of a foreign corporation, foreign firm, or other foreign-based business.

c. "Minority person" for purposes of this policy, means a Black American, Hispanic American, Native-American (including American Indian, Eskimo, Aleut, and Native Hawaiian), Asian-Indian (including a person whose origins are from India, Pakistan, and Bangladesh), Asian-Pacific-American (including a person whose origins are from Japan, China, the Philippines, Vietnam, Korea, Samoa, Guam, the United States Trust Territories of the Pacific, Northern Marianas, Laos, Cambodia, and Taiwan).

11. "Most Favored Customer" as used in this policy means that the SCAQMD will receive at least as favorable pricing, warranties, conditions, benefits and terms as other customers or clients making similar purchases or receiving similar services.

12. "Disadvantaged Business Enterprise" as used in this policy means a business that is an entity owned and/or controlled by a socially and economically disadvantaged individual(s) as described by Title X of the Clean Air Act Amendments of 1990 (42 U.S.C. 7601 note) (10% statute), and Public Law 102-389 (42 U.S.C. 4370d)(8% statute), respectively;

a Small Business Enterprise (SBE);

a Small Business in a Rural Area (SBRA);

a Labor Surplus Area Firm (LSAF); or

a Historically Underutilized Business (HUB) Zone Small Business Concern, or a concern under a successor program.

C. Under Request for Quotations (RFQ), DVBEs, DVBE business joint ventures, small businesses, and small business joint ventures shall be granted a preference in an amount equal to 5% of the lowest cost responsive bid. Low-Emission Vehicle Businesses shall be granted a preference in an amount equal to 5 percent of the lowest cost responsive bid. Off-Peak Hours Delivery Businesses shall be granted a preference in an amount equal to 2 percent of the lowest cost responsive bid. Local businesses (if the procurement is not funded in whole or in part by federal grant funds) shall be granted a preference in an amount equal to 2% of the lowest cost responsive bid. Businesses offering Most Favored Customer

status shall be granted a preference in an amount equal to 2 percent of the lowest cost responsive bid.

- D. Under Request for Proposals, DVBEs, DVBE joint ventures, small businesses, and small business joint ventures shall be awarded ten (10) points in the evaluation process. A non-DVBE or large business shall receive seven (7) points for subcontracting at least twenty-five (25%) of the total contract value to a DVBE and/or small business. Low-Emission Vehicle Businesses shall be awarded five (5) points in the evaluation process. On procurements which are not funded in whole or in part by federal grant funds local businesses shall receive five (5) points. Off-Peak Hours Delivery Businesses shall be awarded two (2) points in the evaluation process. Businesses offering Most Favored Customer status shall be awarded two (2) points in the evaluation process.
- E. SCAQMD will ensure that discrimination in the award and performance of contracts does not occur on the basis of race, color, sex, national origin, marital status, sexual preference, creed, ancestry, medical condition, or retaliation for having filed a discrimination complaint in the performance of SCAQMD contractual obligations.
- F. SCAQMD requires Contractor to be in compliance with all state and federal laws and regulations with respect to its employees throughout the term of any awarded contract, including state minimum wage laws and OSHA requirements.
- G. When contracts are funded in whole or in part by federal funds, and if subcontracts are to be let, the Contractor must comply with the following, evidencing a good faith effort to solicit disadvantaged businesses. Contractor shall submit a certification signed by an authorized official affirming its status as a MBE or WBE, as applicable, at the time of contract execution. SCAQMD reserves the right to request documentation demonstrating compliance with the following good faith efforts prior to contract execution.
 - 1. Ensure Disadvantaged Business Enterprises (DBEs) are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities. For Indian Tribal, State and Local Government recipients, this will include placing DBEs on solicitation lists and soliciting them whenever they are potential sources.
 - 2. Make information on forthcoming opportunities available to DBEs and arrange time frames for contracts and establish delivery schedules, where the requirements permit, in a way that encourages and facilitates participation by DBEs in the competitive process. This includes, whenever possible, posting solicitations for bids or proposals for a minimum of 30 calendar days before the bid or proposal closing date.
 - 3. Consider in the contracting process whether firms competing for large contracts could subcontract with DBEs. For Indian Tribal, State and Local Government recipients, this will include dividing total requirements when economically feasible into smaller tasks or quantities to permit maximum participation by DBEs in the competitive process.
 - 4. Encourage contracting with a consortium of DBEs when a contract is too large for one of these firms to handle individually.
 - 5. Using the services and assistance of the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.

6. If the prime contractor awards subcontracts, require the prime contractor to take the above steps.
-
- H. To the extent that any conflict exists between this policy and any requirements imposed by federal and state law relating to participation in a contract by a certified MBE/WBE/DVBE as a condition of receipt of federal or state funds, the federal or state requirements shall prevail.
 - I. When contracts are not funded in whole or in part by federal grant funds, a local business preference will be awarded. For such contracts that involve the purchase of commercial off-the-shelf products, local business preference will be given to suppliers or distributors of commercial off-the-shelf products who maintain an ongoing business within the geographical boundaries of SCAQMD. However, if the subject matter of the RFP or RFQ calls for the fabrication or manufacture of custom products, only companies performing 90% of the manufacturing or fabrication effort within the geographical boundaries of SCAQMD shall be entitled to the local business preference. Proposals for legislative representation, such as in Sacramento, California or Washington D.C. are not eligible for local business incentive points.
 - J. In compliance with federal fair share requirements set forth in 40 CFR Part 33, SCAQMD shall establish a fair share goal annually for expenditures with federal funds covered by its procurement policy.

ATTACHMENT B



South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

Business Information Request

Dear SCAQMD Contractor/Supplier:

South Coast Air Quality Management District (SCAQMD) is committed to ensuring that our contractor/supplier records are current and accurate. If your firm is selected for award of a purchase order or contract, it is imperative that the information requested herein be supplied in a timely manner to facilitate payment of invoices. In order to process your payments, we need the enclosed information regarding your account. **Please review and complete the information identified on the following pages, remember to sign all documents for our files, and return them as soon as possible to the address below:**

**Attention: Accounts Payable, Accounting Department
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765-4178**

If you do not return this information, we will not be able to establish you as a vendor. This will delay any payments and would still necessitate your submittal of the enclosed information to our Accounting department before payment could be initiated. Completion of this document and enclosed forms would ensure that your payments are processed timely and accurately.

If you have any questions or need assistance in completing this information, please contact Accounting at (909) 396-3777. We appreciate your cooperation in completing this necessary information.

Sincerely,

Sujata Jain
Deputy Executive Officer
Finance

DH:tm

Enclosures: Business Information Request
Disadvantaged Business Certification
W-9
Form 590 Withholding Exemption Certificate
Federal Contract Debarment Certification
Campaign Contributions Disclosure
Direct Deposit Authorization



South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

BUSINESS INFORMATION REQUEST

Business Name	
Division of	
Subsidiary of	
Website Address	
Type of Business <i>Check One:</i>	<input type="checkbox"/> Individual <input type="checkbox"/> DBA, Name _____, County Filed in _____ <input type="checkbox"/> Corporation, ID No. _____ <input type="checkbox"/> LLC/LLP, ID No. _____ <input type="checkbox"/> Other _____

REMITTING ADDRESS INFORMATION

Address			
City/Town			
State/Province		Zip	
Phone	() - Ext	Fax	() -
Contact		Title	
E-mail Address			
Payment Name if Different			

All invoices must reference the corresponding Purchase Order Number(s)/Contract Number(s) if applicable and mailed to:

**Attention: Accounts Payable, Accounting Department
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765-4178**

BUSINESS STATUS CERTIFICATIONS

Federal guidance for utilization of disadvantaged business enterprises allows a vendor to be deemed a small business enterprise (SBE), minority business enterprise (MBE) or women business enterprise (WBE) if it meets the criteria below.

- is certified by the Small Business Administration or
- is certified by a state or federal agency or
- is an independent MBE(s) or WBE(s) business concern which is at least 51 percent owned and controlled by minority group member(s) who are citizens of the United States.

Statements of certification:

As a prime contractor to SCAQMD, (name of business) will engage in good faith efforts to achieve the fair share in accordance with 40 CFR Section 33.301, and will follow the six affirmative steps listed below **for contracts or purchase orders funded in whole or in part by federal grants and contracts.**

1. Place qualified SBEs, MBEs, and WBEs on solicitation lists.
2. Assure that SBEs, MBEs, and WBEs are solicited whenever possible.
3. When economically feasible, divide total requirements into small tasks or quantities to permit greater participation by SBEs, MBEs, and WBEs.
4. Establish delivery schedules, if possible, to encourage participation by SBEs, MBEs, and WBEs.
5. Use services of Small Business Administration, Minority Business Development Agency of the Department of Commerce, and/or any agency authorized as a clearinghouse for SBEs, MBEs, and WBEs.
6. If subcontracts are to be let, take the above affirmative steps.

Self-Certification Verification: Also for use in awarding additional points, as applicable, in accordance with SCAQMD Procurement Policy and Procedure:

Check all that apply:

- | | |
|---|--|
| <input type="checkbox"/> Small Business Enterprise/Small Business Joint Venture | <input type="checkbox"/> Women-owned Business Enterprise |
| <input type="checkbox"/> Local business | <input type="checkbox"/> Disabled Veteran-owned Business Enterprise/DVBE Joint Venture |
| <input type="checkbox"/> Minority-owned Business Enterprise | <input type="checkbox"/> Most Favored Customer Pricing Certification |

Percent of ownership: _____ %

Name of Qualifying Owner(s): _____

State of California Public Works Contractor Registration No. _____ . MUST BE INCLUDED IF BID PROPOSAL IS FOR PUBLIC WORKS PROJECT.

I, the undersigned, hereby declare that to the best of my knowledge the above information is accurate. Upon penalty of perjury, I certify information submitted is factual.

NAME

TITLE

TELEPHONE NUMBER

DATE

Definitions

Disabled Veteran-Owned Business Enterprise means a business that meets all of the following criteria:

- is a sole proprietorship or partnership of which is at least 51 percent owned by one or more disabled veterans, or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more disabled veterans; a subsidiary which is wholly owned by a parent corporation but only if at least 51 percent of the voting stock of the parent corporation is owned by one or more disabled veterans; or a joint venture in which at least 51 percent of the joint venture's management and control and earnings are held by one or more disabled veterans.
- the management and control of the daily business operations are by one or more disabled veterans. The disabled veterans who exercise management and control are not required to be the same disabled veterans as the owners of the business.
- is a sole proprietorship, corporation, partnership, or joint venture with its primary headquarters office located in the United States and which is not a branch or subsidiary of a foreign corporation, firm, or other foreign-based business.

Joint Venture means that one party to the joint venture is a DVBE and owns at least 51 percent of the joint venture. In the case of a joint venture formed for a single project this means that DVBE will receive at least 51 percent of the project dollars.

Local Business means a business that meets all of the following criteria:

- has an ongoing business within the boundary of SCAQMD at the time of bid application.
- performs 90 percent of the work within SCAQMD's jurisdiction.

Minority-Owned Business Enterprise means a business that meets all of the following criteria:

- is at least 51 percent owned by one or more minority persons or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more minority persons.
- is a business whose management and daily business operations are controlled or owned by one or more minority person.
- is a business which is a sole proprietorship, corporation, partnership, joint venture, an association, or a cooperative with its primary headquarters office located in the United States, which is not a branch or subsidiary of a foreign corporation, foreign firm, or other foreign business.

“Minority” person means a Black American, Hispanic American, Native American (including American Indian, Eskimo, Aleut, and Native Hawaiian), Asian-Indian American (including a person whose origins are from India, Pakistan, or Bangladesh), Asian-Pacific American (including a person whose origins are from Japan, China, the Philippines, Vietnam, Korea, Samoa, Guam, the United States Trust Territories of the Pacific, Northern Marianas, Laos, Cambodia, or Taiwan).

Small Business Enterprise means a business that meets the following criteria:

- a. 1) an independently owned and operated business; 2) not dominant in its field of operation; 3) together with affiliates is either:
 - **A service, construction, or non-manufacturer with 100 or fewer employees, and average annual gross receipts of ten million dollars (\$10,000,000) or less over the previous three years, or**
 - A manufacturer with 100 or fewer employees.
- b. Manufacturer means a business that is both of the following:
 - 1) Primarily engaged in the chemical or mechanical transformation of raw materials or processed substances into new products.
 - 2) Classified between Codes 311000 to 339000, inclusive, of the North American Industrial Classification System (NAICS) Manual published by the United States Office of Management and Budget, 2007 edition.

Small Business Joint Venture means that one party to the joint venture is a Small Business and owns at least 51 percent of the joint venture. In the case of a joint venture formed for a single project this means that the Small Business will receive at least 51 percent of the project dollars.

Women-Owned Business Enterprise means a business that meets all of the following criteria:

- is at least 51 percent owned by one or more women or in the case of any business whose stock is publicly held, at least 51 percent of the stock is owned by one or more women.
- is a business whose management and daily business operations are controlled or owned by one or more women.
- is a business which is a sole proprietorship, corporation, partnership, or a joint venture, with its primary headquarters office located in the United States, which is not a branch or subsidiary of a foreign corporation, foreign firm, or other foreign business.

Most Favored Customer as used in this policy means that the SCAQMD will receive at least as favorable pricing, warranties, conditions, benefits and terms as other customers or clients making similar purchases or receiving similar services.

Request for Taxpayer Identification Number and Certification

▶ Go to www.irs.gov/FormW9 for instructions and the latest information.

Give Form to the
requester. Do not
send to the IRS.

Print or type. See Specific Instructions on page 3.	<p>1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.</p> <hr/> <p>2 Business name/disregarded entity name, if different from above</p> <hr/> <p>3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only one of the following seven boxes.</p> <p> <input type="checkbox"/> Individual/sole proprietor or single-member LLC <input type="checkbox"/> C Corporation <input type="checkbox"/> S Corporation <input type="checkbox"/> Partnership <input type="checkbox"/> Trust/estate <input type="checkbox"/> Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ▶ _____ Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is not disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner. <input type="checkbox"/> Other (see instructions) ▶ _____ </p> <p>4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):</p> <p>Exempt payee code (if any) _____</p> <p>Exemption from FATCA reporting code (if any) _____</p> <p style="text-align: right;"><small>(Applies to accounts maintained outside the U.S.)</small></p>
	<p>5 Address (number, street, and apt. or suite no.) See instructions.</p> <hr/> <p>6 City, state, and ZIP code</p> <hr/> <p>7 List account number(s) here (optional)</p>
	<p>Requester's name and address (optional)</p>

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number					
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; border: 1px solid black; height: 20px;"></td> <td style="width: 5%; text-align: center;">-</td> <td style="width: 25%; border: 1px solid black; height: 20px;"></td> <td style="width: 5%; text-align: center;">-</td> <td style="width: 40%; border: 1px solid black; height: 20px;"></td> </tr> </table>		-		-	
	-		-		
OR					
Employer identification number					
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; border: 1px solid black; height: 20px;"></td> <td style="width: 5%; text-align: center;">-</td> <td style="width: 70%; border: 1px solid black; height: 20px;"></td> </tr> </table>		-			
	-				

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here	Signature of U.S. person ▶	Date ▶
------------------	----------------------------	--------

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to www.irs.gov/FormW9.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)

- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, later.

By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and
4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting*, later, for further information.

Note: If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien;
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;
- An estate (other than a foreign estate); or
- A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States.

- In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the entity;
- In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the trust; and
- In the case of a U.S. trust (other than a grantor trust), the U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

Foreign person. If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Pub. 515, *Withholding of Tax on Nonresident Aliens and Foreign Entities*).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items.

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.
2. The treaty article addressing the income.
3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.
4. The type and amount of income that qualifies for the exemption from tax.
5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

Backup Withholding

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 28% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester,
2. You do not certify your TIN when required (see the instructions for Part II for details),
3. The IRS tells the requester that you furnished an incorrect TIN,
4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or
5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt payee code*, later, and the separate Instructions for the Requester of Form W-9 for more information.

Also see *Special rules for partnerships*, earlier.

What is FATCA Reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code*, later, and the Instructions for the Requester of Form W-9 for more information.

Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account; for example, if the grantor of a grantor trust dies.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of \$50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a \$500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Line 1

You must enter one of the following on this line; **do not** leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account (other than an account maintained by a foreign financial institution (FFI)), list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9. If you are providing Form W-9 to an FFI to document a joint account, each holder of the account that is a U.S. person must provide a Form W-9.

a. **Individual.** Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

Note: ITIN applicant: Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040/1040A/1040EZ you filed with your application.

b. **Sole proprietor or single-member LLC.** Enter your individual name as shown on your 1040/1040A/1040EZ on line 1. You may enter your business, trade, or "doing business as" (DBA) name on line 2.

c. **Partnership, LLC that is not a single-member LLC, C corporation, or S corporation.** Enter the entity's name as shown on the entity's tax return on line 1 and any business, trade, or DBA name on line 2.

d. **Other entities.** Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on line 2.

e. **Disregarded entity.** For U.S. federal tax purposes, an entity that is disregarded as an entity separate from its owner is treated as a "disregarded entity." See Regulations section 301.7701-2(c)(2)(iii). Enter the owner's name on line 1. The name of the entity entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on line 2, "Business name/disregarded entity name." If the owner of the disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, you may enter it on line 2.

Line 3

Check the appropriate box on line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box on line 3.

IF the entity/person on line 1 is a(n) . . .	THEN check the box for . . .
• Corporation	Corporation
• Individual • Sole proprietorship, or • Single-member limited liability company (LLC) owned by an individual and disregarded for U.S. federal tax purposes.	Individual/sole proprietor or single-member LLC
• LLC treated as a partnership for U.S. federal tax purposes, • LLC that has filed Form 8832 or 2553 to be taxed as a corporation, or • LLC that is disregarded as an entity separate from its owner but the owner is another LLC that is not disregarded for U.S. federal tax purposes.	Limited liability company and enter the appropriate tax classification. (P= Partnership; C= C corporation; or S= S corporation)
• Partnership	Partnership
• Trust/estate	Trust/estate

Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space on line 4 any code(s) that may apply to you.

Exempt payee code.

- Generally, individuals (including sole proprietors) are not exempt from backup withholding.
- Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.
- Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.
- Corporations are not exempt from backup withholding with respect to attorneys' fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space in line 4.

1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)

2—The United States or any of its agencies or instrumentalities

3—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

4—A foreign government or any of its political subdivisions, agencies, or instrumentalities

5—A corporation

6—A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or possession

7—A futures commission merchant registered with the Commodity Futures Trading Commission

8—A real estate investment trust

9—An entity registered at all times during the tax year under the Investment Company Act of 1940

10—A common trust fund operated by a bank under section 584(a)

11—A financial institution

12—A middleman known in the investment community as a nominee or custodian

13—A trust exempt from tax under section 664 or described in section 4947

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for . . .	THEN the payment is exempt for . . .
Interest and dividend payments	All exempt payees except for 7
Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
Barter exchange transactions and patronage dividends	Exempt payees 1 through 4
Payments over \$600 required to be reported and direct sales over \$5,000 ¹	Generally, exempt payees 1 through 5 ²
Payments made in settlement of payment card or third party network transactions	Exempt payees 1 through 4

¹ See Form 1099-MISC, Miscellaneous Income, and its instructions.

² However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

Exemption from FATCA reporting code. The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) written or printed on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37)

B—The United States or any of its agencies or instrumentalities

C—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i)

E—A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i)

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state

G—A real estate investment trust

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940

I—A common trust fund as defined in section 584(a)

J—A bank as defined in section 581

K—A broker

L—A trust exempt from tax under section 664 or described in section 4947(a)(1)

M—A tax exempt trust under a section 403(b) plan or section 457(g) plan

Note: You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns. If this address differs from the one the requester already has on file, write NEW at the top. If a new address is provided, there is still a chance the old address will be used until the payor changes your address in their records.

Line 6

Enter your city, state, and ZIP code.

Part I. Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN.

If you are a single-member LLC that is disregarded as an entity separate from its owner, enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

Note: See *What Name and Number To Give the Requester*, later, for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at www.SSA.gov. You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at www.irs.gov/Businesses and clicking on Employer Identification Number (EIN) under Starting a Business. Go to www.irs.gov/Forms to view, download, or print Form W-7 and/or Form SS-4. Or, you can go to www.irs.gov/OrderForms to place an order and have Form W-7 and/or SS-4 mailed to you within 10 business days.

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note: Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

Caution: A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.

Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if item 1, 4, or 5 below indicates otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see *Exempt payee code*, earlier.

Signature requirements. Complete the certification as indicated in items 1 through 5 below.

1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983. You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

3. Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), ABLE accounts (under section 529A), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account) other than an account maintained by an FFI	The actual owner of the account or, if combined funds, the first individual on the account ¹
3. Two or more U.S. persons (joint account maintained by an FFI)	Each holder of the account
4. Custodial account of a minor (Uniform Gift to Minors Act)	The minor ²
5. a. The usual revocable savings trust (grantor is also trustee) b. So-called trust account that is not a legal or valid trust under state law	The grantor-trustee ¹ The actual owner ¹
6. Sole proprietorship or disregarded entity owned by an individual	The owner ³
7. Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulations section 1.671-4(b)(2)(i)(A))	The grantor*
For this type of account:	Give name and EIN of:
8. Disregarded entity not owned by an individual	The owner
9. A valid trust, estate, or pension trust	Legal entity ⁴
10. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
11. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
12. Partnership or multi-member LLC	The partnership
13. A broker or registered nominee	The broker or nominee

For this type of account:	Give name and EIN of:
14. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
15. Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulations section 1.671-4(b)(2)(i)(B))	The trust

¹ List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

² Circle the minor's name and furnish the minor's SSN.

³ You must show your individual name and you may also enter your business or DBA name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

⁴ List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see *Special rules for partnerships*, earlier.

*Note: The grantor also must provide a Form W-9 to trustee of trust.

Note: If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

Secure Your Tax Records From Identity Theft

Identity theft occurs when someone uses your personal information such as your name, SSN, or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039.

For more information, see Pub. 5027, Identity Theft Information for Taxpayers.

Victims of identity theft who are experiencing economic harm or a systemic problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

Protect yourself from suspicious emails or phishing schemes. Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to phishing@irs.gov. You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at spam@uce.gov or report them at www.ftc.gov/complaint. You can contact the FTC at www.ftc.gov/idtheft or 877-IDTHEFT (877-438-4338). If you have been the victim of identity theft, see www.IdentityTheft.gov and Pub. 5027.

Visit www.irs.gov/IdentityTheft to learn more about identity theft and how to reduce your risk.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and possessions for use in administering their laws. The information also may be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payers must generally withhold a percentage of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to the payer. Certain penalties may also apply for providing false or fraudulent information.

2018 Withholding Exemption Certificate

590

The payee completes this form and submits it to the withholding agent. The withholding agent keeps this form with their records.

Withholding Agent Information

Name _____

Payee Information

Name _____

SSN or ITIN FEIN CA Corp no. CA SOS file no.

Address (apt./sta., room, PO box, or PMB no.) _____

City (if you have a foreign address, see instructions.) _____

State _____ ZIP code _____

Exemption Reason

Check only one box.

By checking the appropriate box below, the payee certifies the reason for the exemption from the California income tax withholding requirements on payment(s) made to the entity or individual.

- Individuals — Certification of Residency:**
I am a resident of California and I reside at the address shown above. If I become a nonresident at any time, I will promptly notify the withholding agent. See instructions for General Information D, Definitions.
- Corporations:**
The corporation has a permanent place of business in California at the address shown above or is qualified through the California Secretary of State (SOS) to do business in California. The corporation will file a California tax return. If this corporation ceases to do any of the above, I will promptly notify the withholding agent. See instructions for General Information D, Definitions.
- Partnerships or Limited Liability Companies (LLCs):**
The partnership or LLC has a permanent place of business in California at the address shown above or is registered with the California SOS, and is subject to the laws of California. The partnership or LLC will file a California tax return. If the partnership or LLC ceases to do any of the above, I will promptly inform the withholding agent. For withholding purposes, a limited liability partnership (LLP) is treated like any other partnership.
- Tax-Exempt Entities:**
The entity is exempt from tax under California Revenue and Taxation Code (R&TC) Section 23701 _____ (insert letter) or Internal Revenue Code Section 501(c) _____ (insert number). If this entity ceases to be exempt from tax, I will promptly notify the withholding agent. Individuals cannot be tax-exempt entities.
- Insurance Companies, Individual Retirement Arrangements (IRAs), or Qualified Pension/Profit-Sharing Plans:**
The entity is an insurance company, IRA, or a federally qualified pension or profit-sharing plan.
- California Trusts:**
At least one trustee and one noncontingent beneficiary of the above-named trust is a California resident. The trust will file a California fiduciary tax return. If the trustee or noncontingent beneficiary becomes a nonresident at any time, I will promptly notify the withholding agent.
- Estates — Certification of Residency of Deceased Person:**
I am the executor of the above-named person's estate or trust. The decedent was a California resident at the time of death. The estate will file a California fiduciary tax return.
- Nonmilitary Spouse of a Military Servicemember:**
I am a nonmilitary spouse of a military servicemember and I meet the Military Spouse Residency Relief Act (MSRRA) requirements. See instructions for General Information E, MSRRA.

CERTIFICATE OF PAYEE: Payee must complete and sign below.

To learn about your privacy rights, how we may use your information, and the consequences for not providing the requested information, go to ftb.ca.gov/forms and search for 1131. To request this notice by mail, call 800.852.5711.

Under penalties of perjury, I declare that I have examined the information on this form, including accompanying schedules and statements, and to the best of my knowledge and belief, it is true, correct, and complete. I further declare under penalties of perjury that if the facts upon which this form are based change, I will promptly notify the withholding agent.

Type or print payee's name and title _____ Telephone (____) _____

Payee's signature ► _____ Date _____

2017 Instructions for Form 590

Withholding Exemption Certificate

References in these instructions are to the California Revenue and Taxation Code (R&TC).

General Information

Registered Domestic Partners (RDP) – For purposes of California income tax, references to a spouse, husband, or wife also refer to a Registered Domestic Partner (RDP) unless otherwise specified. For more information on RDPs, get FTB Pub. 737, Tax Information for Registered Domestic Partners.

A Purpose

Use Form 590, Withholding Exemption Certificate, to certify an exemption from nonresident withholding.

Form 590 does not apply to payments of backup withholding. For more information, go to ftb.ca.gov and search for **backup withholding**.

Form 590 does not apply to payments for wages to employees. Wage withholding is administered by the California Employment Development Department (EDD). For more information, go to edd.ca.gov or call 888.745.3886.

Do not use Form 590 to certify an exemption from withholding if you are a **Seller of California real estate**. Sellers of California real estate use Form 593-C, Real Estate Withholding Certificate, to claim an exemption from the real estate withholding requirement.

The following are excluded from withholding and completing this form:

- The United States and any of its agencies or instrumentalities.
- A state, a possession of the United States, the District of Columbia, or any of its political subdivisions or instrumentalities.
- A foreign government or any of its political subdivisions, agencies, or instrumentalities.

B Income Subject to Withholding

California Revenue and Taxation Code (R&TC) Section 18662 requires withholding of income or franchise tax on payments of California source income made to nonresidents of California.

Withholding is required on the following, but is not limited to:

- Payments to nonresidents for services rendered in California.
- Distributions of California source income made to domestic nonresident partners, members, and S corporation shareholders and allocations of California source income made to foreign partners and members.
- Payments to nonresidents for rents if the payments are made in the course of the withholding agent's business.
- Payments to nonresidents for royalties from activities sourced to California.

- Distributions of California source income to nonresident beneficiaries from an estate or trust.
- Endorsement payments received for services performed in California.
- Prizes and winnings received by nonresidents for contests in California.

However, withholding is optional if the total payments of California source income are \$1,500 or less during the calendar year.

For more information on withholding get FTB Pub. 1017, Resident and Nonresident Withholding Guidelines. To get a withholding publication, see Additional Information.

C Who Certifies this Form

Form 590 is certified by the payee. California residents or entities exempt from the withholding requirement should complete Form 590 and submit it to the withholding agent before payment is made. The withholding agent is then relieved of the withholding requirements if the agent relies in good faith on a completed and signed Form 590 unless notified by the Franchise Tax Board (FTB) that the form should not be relied upon.

An incomplete certificate is invalid and the withholding agent should not accept it. If the withholding agent receives an incomplete certificate, the withholding agent is required to withhold tax on payments made to the payee until a valid certificate is received. In lieu of a completed exemption certificate, the withholding agent may accept a letter from the payee as a substitute explaining why they are not subject to withholding. The letter must contain all the information required on the certificate in similar language, including the under penalty of perjury statement and the payee's taxpayer identification number (TIN). The withholding agent must retain a copy of the certificate or substitute for at least five years after the last payment to which the certificate applies, and provide it upon request to the FTB.

If an entertainer (or the entertainer's business entity) is paid for a performance, the entertainer's information must be provided. **Do not** submit the entertainer's agent or promoter information.

The grantor of a grantor trust shall be treated as the payee for withholding purposes. Therefore, if the payee is a grantor trust and one or more of the grantors is a nonresident, withholding is required. If all of the grantors on the trust are residents, no withholding is required. Resident grantors can check the box on Form 590 labeled "Individuals — Certification of Residency."

D Definitions

For California nonwage withholding purposes, **nonresident** includes all of the following:

- Individuals who are not residents of California.
- Corporations not qualified through the California Secretary of State (CA SOS) to do business in California or having no permanent place of business in California.
- Partnerships or limited liability companies (LLCs) with no permanent place of business in California.
- Any trust without a resident grantor, beneficiary, or trustee, or estates where the decedent was not a California resident.

Foreign refers to non-U.S.

For more information about determining resident status, get FTB Pub. 1031, Guidelines for Determining Resident Status. Military servicemembers have special rules for residency. For more information, get FTB Pub. 1032, Tax Information for Military Personnel.

Permanent Place of Business:

A corporation has a permanent place of business in California if it is organized and existing under the laws of California or it has qualified through the CA SOS to transact intrastate business. A corporation that has not qualified to transact intrastate business (e.g., a corporation engaged exclusively in interstate commerce) will be considered as having a permanent place of business in California only if it maintains a permanent office in California that is permanently staffed by its employees.

E Military Spouse Residency Relief Act (MSRRA)

Generally, for tax purposes you are considered to maintain your existing residence or domicile. If a military servicemember and nonmilitary spouse have the same state of domicile, the MSRRA provides:

- A spouse shall not be deemed to have lost a residence or domicile in any state solely by reason of being absent to be with the servicemember serving in compliance with military orders.
- A spouse shall not be deemed to have acquired a residence or domicile in any other state solely by reason of being there to be with the servicemember serving in compliance with military orders.

Domicile is defined as the one place:

- Where you maintain a true, fixed, and permanent home.
- To which you intend to return whenever you are absent.

A military servicemember's nonmilitary spouse is considered a nonresident for tax purposes if the servicemember and spouse have the same domicile outside of California and the spouse is in California solely to be with the servicemember who is serving in compliance with Permanent Change of Station orders.

California may require nonmilitary spouses of military servicemembers to provide proof that they meet the criteria for California personal income tax exemption as set forth in the MSRRA.

Income of a military servicemember's nonmilitary spouse for services performed in California is not California source income subject to state tax if the spouse is in California to be with the servicemember serving in compliance with military orders, and the servicemember and spouse have the same domicile in a state other than California.

For additional information or assistance in determining whether the applicant meets the MSRRA requirements, get FTB Pub. 1032.

Specific Instructions

Payee Instructions

Enter the withholding agent's name.

Enter the payee's information, including the TIN and check the appropriate TIN box.

You must provide a valid TIN as requested on this form. The following are acceptable TINs: social security number (SSN); individual taxpayer identification number (ITIN); federal employer identification number (FEIN); California corporation number (CA Corp no.); or CA SOS file number.

Private Mail Box (PMB) – Include the PMB in the address field. Write "PMB" first, then the box number. Example: 111 Main Street PMB 123.

Foreign Address – Follow the country's practice for entering the city, county, province, state, country, and postal code, as applicable, in the appropriate boxes. **Do not** abbreviate the country name.

Exemption Reason – Check the box that reflects the reason why the payee is exempt from the California income tax withholding requirement.

Withholding Agent Instructions

Do not send this form to the FTB. The withholding agent retains this form for a minimum of five years or until the payee's status changes, and must provide this form to the FTB upon request.

The payee must notify the withholding agent if any of the following situations occur:

- The individual payee becomes a nonresident.
- The corporation ceases to have a permanent place of business in California or ceases to be qualified to do business in California.

- The partnership ceases to have a permanent place of business in California.
- The LLC ceases to have a permanent place of business in California.
- The tax-exempt entity loses its tax-exempt status.

If any of these situations occur, then withholding may be required. For more information, get Form 592, Resident and Nonresident Withholding Statement, Form 592-B, Resident and Nonresident Withholding Tax Statement, and Form 592-V, Payment Voucher for Resident and Nonresident Withholding.

Additional Information

Website: For more information go to ftb.ca.gov and search for **nonwage**.
MyFTB offers secure online tax account information and services. For more information and to register, go to ftb.ca.gov and search for **myftb**.

Telephone: 888.792.4900 or 916.845.4900, Withholding Services and Compliance phone service

Fax: 916.845.9512

Mail: WITHHOLDING SERVICES AND COMPLIANCE MS F182
FRANCHISE TAX BOARD
PO BOX 942867
SACRAMENTO CA 94267-0651

For questions unrelated to withholding, or to download, view, and print California tax forms and publications, or to access the TTY/TDD numbers, see the information below.

Internet and Telephone Assistance

Website: ftb.ca.gov

Telephone: 800.852.5711 from within the United States
916.845.6500 from outside the United States

TTY/TDD: 800.822.6268 for persons with hearing or speech impairments

Asistencia Por Internet y Teléfono

Sitio web: ftb.ca.gov

Teléfono: 800.852.5711 dentro de los Estados Unidos
916.845.6500 fuera de los Estados Unidos

TTY/TDD: 800.822.6268 para personas con discapacidades auditivas o de habla

Certification Regarding Debarment, Suspension, and Other Responsibility Matters

The prospective participant certifies to the best of its knowledge and belief that it and the principals:

- (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- (b) Have not within a three year period preceding this proposal been convicted of or had a civil judgement rendered against them or commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction: violation of Federal or State antitrust statute or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- (c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and
- (d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 USC Sec. 1001, a false statement may result in a fine of up to \$10,000 or imprisonment for up to 5 years, or both.

Typed Name & Title of Authorized Representative

Signature of Authorized Representative Date

I am unable to certify to the above statements. My explanation is attached.



CAMPAIGN CONTRIBUTIONS DISCLOSURE

In accordance with California law, bidders and contracting parties are required to disclose, at the time the application is filed, information relating to any campaign contributions made to South Coast Air Quality Management District (SCAQMD) Board Members or members/alternates of the MSRC, including: the name of the party making the contribution (which includes any parent, subsidiary or otherwise related business entity, as defined below), the amount of the contribution, and the date the contribution was made. 2 C.C.R. §18438.8(b).

California law prohibits a party, or an agent, from making campaign contributions to SCAQMD Governing Board Members or members/alternates of the Mobile Source Air Pollution Reduction Review Committee (MSRC) of more than \$250 while their contract or permit is pending before SCAQMD; and further prohibits a campaign contribution from being made for three (3) months following the date of the final decision by the Governing Board or the MSRC on a donor's contract or permit. Gov't Code §84308(d). For purposes of reaching the \$250 limit, the campaign contributions of the bidder or contractor plus contributions by its parents, affiliates, and related companies of the contractor or bidder are added together. 2 C.C.R. §18438.5.

In addition, SCAQMD Board Members or members/alternates of the MSRC must abstain from voting on a contract or permit if they have received a campaign contribution from a party or participant to the proceeding, or agent, totaling more than \$250 in the 12-month period prior to the consideration of the item by the Governing Board or the MSRC. Gov't Code §84308(c).

The list of current SCAQMD Governing Board Members can be found at SCAQMD website (www.aqmd.gov). The list of current MSRC members/alternates can be found at the MSRC website (<http://www.cleantransportationfunding.org>).

SECTION I.

Contractor (Legal Name): _____

DBA, Name _____, County Filed in _____ Corporation, ID No. _____ LLC/LLP, ID No. _____
--

List any parent, subsidiaries, or otherwise affiliated business entities of Contractor:
(See definition below).

SECTION II.

Has Contractor and/or any parent, subsidiary, or affiliated company, or agent thereof, made a campaign contribution(s) totaling \$250 or more in the aggregate to a current member of the South Coast Air Quality Management Governing Board or member/alternate of the MSRC in the 12 months preceding the date of execution of this disclosure?

Yes No **If YES, complete Section II below and then sign and date the form. If NO, sign and date below. Include this form with your submittal.**

Campaign Contributions Disclosure, continued:

Name of Contributor _____

Governing Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution
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Name of Contributor _____

Governing Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution
---	------------------------	----------------------

Name of Contributor _____

Governing Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution
---	------------------------	----------------------

Name of Contributor _____

Governing Board Member or MSRC Member/Alternate	Amount of Contribution	Date of Contribution
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I declare the foregoing disclosures to be true and correct.

By: _____

Title: _____

Date: _____

DEFINITIONS

Parent, Subsidiary, or Otherwise Related Business Entity (2 Cal. Code of Regs., §18703.1(d).)

- (1) Parent subsidiary. A parent subsidiary relationship exists when one corporation directly or indirectly owns shares possessing more than 50 percent of the voting power of another corporation.
- (2) Otherwise related business entity. Business entities, including corporations, partnerships, joint ventures and any other organizations and enterprises operated for profit, which do not have a parent subsidiary relationship are otherwise related if any one of the following three tests is met:
 - (A) One business entity has a controlling ownership interest in the other business entity.
 - (B) There is shared management and control between the entities. In determining whether there is shared management and control, consideration should be given to the following factors:
 - (i) The same person or substantially the same person owns and manages the two entities;
 - (ii) There are common or commingled funds or assets;
 - (iii) The business entities share the use of the same offices or employees, or otherwise share activities, resources or personnel on a regular basis;
 - (iv) There is otherwise a regular and close working relationship between the entities; or
 - (C) A controlling owner (50% or greater interest as a shareholder or as a general partner) in one entity also is a controlling owner in the other entity.



South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

Direct Deposit Authorization

STEP 1: Please check all the appropriate boxes

- | | |
|--|--|
| <input type="checkbox"/> Individual (Employee, Governing Board Member) | <input type="checkbox"/> New Request |
| <input type="checkbox"/> Vendor/Contractor | <input type="checkbox"/> Cancel Direct Deposit |
| <input type="checkbox"/> Changed Information | |

STEP 2: Payee Information

Last Name		First Name		Middle Initial	Title
Vendor/Contractor Business Name (if applicable)					
Address				Apartment or P.O. Box Number	
City		State	Zip	Country	
Taxpayer ID Number		Telephone Number		Email Address	

Authorization

- I authorize South Coast Air Quality Management District (SCAQMD) to direct deposit funds to my account in the financial institution as indicated below. I understand that the authorization may be rejected or discontinued by SCAQMD at any time. If any of the above information changes, I will promptly complete a new authorization agreement. If the direct deposit is not stopped before closing an account, funds payable to me will be returned to SCAQMD for distribution. This will delay my payment.
- This authorization remains in effect until SCAQMD receives written notification of changes or cancellation from you.
- I hereby release and hold harmless SCAQMD for any claims or liability to pay for any losses or costs related to insufficient fund transactions that result from failure within the Automated Clearing House network to correctly and timely deposit monies into my account.

STEP 3:

You must verify that your bank is a member of an Automated Clearing House (ACH). Failure to do so could delay the processing of your payment. You must attach a voided check or have your bank complete the bank information and the account holder must sign below.

To be Completed by your Bank

Staple Voided Check Here	Name of Bank/Institution		
	Account Holder Name(s)		
	<input type="checkbox"/> Saving <input type="checkbox"/> Checking	Account Number	Routing Number
	Bank Representative Printed Name	Bank Representative Signature	Date
	ACCOUNT HOLDER SIGNATURE:		Date

For SCAQMD Use Only

Input By _____

Date _____

 [Back to Agenda](#)

BOARD MEETING DATE: November 2, 2018

AGENDA NO. 10

PROPOSAL: Amend Contracts for Legislative Representation in Sacramento, California

SYNOPSIS: The current contracts for legislative representation in Sacramento expire on December 31, 2018 for The Quintana Cruz Company, Joe A. Gonsalves & Son, and California Advisors, LLC. Based upon the firms' effective performance during the first year of their current contracts, this action is to approve the first one-year extension of the contract with The Quintana Cruz Company in the amount of \$103,500; Joe A. Gonsalves & Son in the amount of \$143,000; and California Advisors, LLC in the amount of \$103,500 for legislative lobbying services in Sacramento for Calendar Year 2019. Sufficient funding is available in the Legislative, Public Affairs & Media FY 2018-19 Budget.

COMMITTEE: Administrative, October 12, 2018; Recommended for Approval

RECOMMENDED ACTIONS:

1. Authorize the Executive Officer to execute a one-year extension of the contract with The Quintana Cruz Company at the current contract amount of \$103,500;
2. Authorize the Executive Officer to execute a one-year extension of the contract with Joe A. Gonsalves & Son at the current contract amount of \$143,000; and
3. Authorize the Executive Officer to execute a one-year extension of the contract with California Advisors, LLC at the current contract amount of \$103,500.

Wayne Natri
Executive Officer

Background

As a leading air quality agency in California and an innovative leader in developing emission reduction programs, SCAQMD is an important contributor to the policy discussions in Sacramento. It is important to ensure that SCAQMD's input continues to be conveyed in a timely and meaningful manner, and that SCAQMD is involved in the day-to-day policy discussions in Sacramento that promote cleaner air, both through policy development and adequate funding. Therefore, it is appropriate to continue direct representation in Sacramento to advance Board policy priorities and SCAQMD programs.

In 2018, the lobbying firms of The Quintana Cruz Company, Joe A. Gonsalves & Son, and California Advisors, LLC professionally represented the SCAQMD in Sacramento and performed at a very high level.

SCAQMD has benefited from its continued association with The Quintana Cruz Company. The firm's Principal, David Quintana, has a professional history which spans over 19 years, with extensive expertise in a wide range of issue areas. Mr. Quintana served as a Legislative Director in the State Senate and as a Consultant for the Senate Committee on Public Safety. He has extensive experience in numerous sectors, including environmental, energy, tribal issues, labor, finance, education, and high-tech/social media. He currently specializes in legislative advocacy on transportation, environmental, and energy issues. Mr. Quintana is able to employ effective strategies that fit SCAQMD's needs. Consequently, his firm has special capabilities that will help ensure that SCAQMD's efforts with regard to the California Legislature and others are the most effective to garner support for SCAQMD's funding and policy needs for the 2016 AQMP.

Joe A. Gonsalves & Son is a Sacramento lobbying firm with decades of experience and strong ties to legislators on both sides of the aisle, as well as many cities throughout the state, including several within SCAQMD's jurisdiction. With over 30 years of experience, the firm's principals are well-respected and knowledgeable on many local and statewide issues. They also have proven to work well with both Democratic and Republican Governors and their Administrations. During multiple occasions, while representing the SCAQMD, this consulting team has secured for staff and Board members access to legislators and key staff at critical junctures. They consistently demonstrate creativity in providing solutions and alternatives to legislative challenges, to help facilitate SCAQMD's ability to achieve its clean air mission and support the 2016 AQMP.

Will Gonzalez, principal of California Advisors, LLC, has over 16 years of legislative and political experience. In 2002 he established his own firm, Gonzalez Public Affairs, which specialized in legislative advocacy on transportation, environmental, and energy issues and prides itself on its policy expertise and close bipartisan relationships. The firm achieved significant legislative victories for its clients including securing millions

in state transportation funding, helping pass sweeping renewable energy laws, and spearheading efforts to reform state procurement. As Legislative Director, he helped secure over \$180 million in state funding for compressed natural gas transit buses and for innovative air quality programs to help the Sacramento region meet its conformity requirements. Upon leaving the legislature, Mr. Gonzalez joined and lobbied on behalf of a major motor company and the Alliance of Automobile Manufacturers in California and twelve other western states. He is credited with securing state grants and tax incentives for electric and alternative fuel vehicles of over \$140 million. With a comprehensive understanding of both politics and policy and an extensive history of successfully representing SCAQMD's policy interests in Sacramento, Mr. Gonzalez is able to effectively represent SCAQMD's needs and policy priorities in Sacramento with the Legislature, Governor and state agencies, as needed. His firm will help ensure that the SCAQMD is effectively represented in Sacramento in a manner that will best garner support for its funding needs and policy priorities.

Throughout the year, the three firms have closely coordinated with SCAQMD and each other to advance the Board's interests and policies. With great effectiveness and in coordination with SCAQMD staff, they have moved the Board's legislative agenda forward by meeting with legislators and staff, testifying in committees, and keeping SCAQMD's Legislative Committee and staff apprised of the latest developments in Sacramento. They have successfully negotiated language with legislative offices and committee staff and, when necessary, worked to have bills and budgetary proposals held in committee or otherwise not move forward if they were detrimental to the Board's legislative/policy positions.

The three firms also worked closely with staff to ensure that we were strategically aware of the policy and political considerations related to legislative proposals. The constant communication among the firms and staff was also essential in ensuring that the correct message was communicated to Sacramento legislators and their staff in a timely fashion. Their diligent efforts and ability to gather and communicate key information in a highly time-sensitive atmosphere were critical to the SCAQMD's interests.

Cumulatively, during the 2018 state legislative year, the three consultant firms skillfully contributed to efforts that led to the following SCAQMD legislative and budgetary successes, including:

- 1) Securing \$245 million in incentive funding from the Greenhouse Gas Reduction Fund to be awarded to local air districts statewide to facilitate co-benefit criteria pollutant emission reductions. These funds will help accelerate the turnover of older medium- and heavy-duty vehicles to cleaner ones, as well as help secure several hundreds of millions of dollars in various pots of clean air-related funding, which SCAQMD will have the opportunity to seek, largely through the grant application process;

- 2) Securing \$50 million in statewide monies for local air districts to fund implementation of community air monitoring systems and community emission reduction programs, mandated by state law [AB 617(Garcia)] in 2017, with a significant portion of those funds being directed to the SCAQMD;
- 3) Securing the passage into law of SB 1502, sponsored by SCAQMD, which sought to modernize outdated and costly public notice requirements, by allowing the use of electronic mail and internet postings for public notice, rather than only mass paper mailings for public hearings, rulemaking processes, and other functions; and
- 4) Blocking a budgetary proposal to divert about \$26 million in revenue per year statewide from a 75 cents per tire fee away from the Carl Moyer Program to the Department of Fish and Wildlife (DFW).

In summary, the three firms forged together to create an efficient and effective consultant team for SCAQMD. Their policy and political insights inform SCAQMD and strengthen its presence, creditability, and ability to support the Board's policy priorities in Sacramento. At this critical point in time, it is important that the momentum and political and stakeholder partnerships continue in the coming year as we continue to work towards successful outcomes pertaining to air quality related legislation and proposals, consistent with SCAQMD's mission and policy goals.

Proposal

The contracts with the three firms expire on December 31, 2018. Staff is highly satisfied with the performance of the three firms and recommends that the Board retain them for Calendar Year 2019.

The present contracts have options for two one-year extensions that may be exercised at the Board's discretion, pursuant to the original RFP. This proposal is to approve the first one-year extension for each of the contracts.

Resource Impacts

The Legislative & Public Affairs Budget for FY 2018-19 contains sufficient funds for legislative advocacy in Sacramento.

BOARD MEETING DATE: November 2, 2018

AGENDA NO. 11

PROPOSAL: Recognize Revenue and Execute Agreements for Installation and Maintenance of Air Filtration Systems

SYNOPSIS: SCAQMD has executed a settlement agreement with Rainbow Transfer/Recycling, Inc., to install and maintain air filtration systems at schools. This action is to recognize up to \$250,000 into the Air Filtration Fund (75). These actions are to also execute a contract to install and maintain air filtration systems at schools in an amount not to exceed \$250,000 from the Air Filtration Fund (75) and execute an agreement with the local school district in Huntington Beach near the transfer facility.

COMMITTEE: Technology, October 19, 2018; Recommended for Approval

RECOMMENDED ACTIONS:

1. Recognize up to \$250,000 from a settlement with Rainbow Transfer/Recycling, Inc., (Rainbow) into the Air Filtration Fund (75).
2. Authorize the Executive Officer to execute an agreement with the local school district in Huntington Beach near the transfer facility to implement the Rainbow settlement agreement.
3. Authorize the Chairman to execute a contract with IQAir North America for installation and maintenance of air filtration systems at schools in an amount not to exceed \$250,000 from the Air Filtration Fund (75).

Wayne Natri
Executive Officer

MMM:FM:NB:PSK

Background

SCAQMD has executed a settlement agreement with Rainbow Transfer/Recycling, Inc., (Rainbow) to install and maintain air filtration systems at schools in a geographical target area identified by the settlement agreement.

IQAir North America (IQAir) was previously selected through two separate competitive bid processes in 2011 and 2013 for air filtration projects, and staff subsequently performed a technology status check to ensure no new technologies had come on the market. IQAir is the only qualified manufacturer of high performance panel filters and stand-alone units which meet the performance standards in SCAQMD’s 2009 air filtration pilot study as well as through a national testing opportunity conducted in 2010 by the University of California Riverside’s College of Engineering/Center for Environmental Research and Technology. These performance standards include an average removal efficiency of at least 90 percent for ultrafine PM, black carbon and PM2.5, and noise level below 45 decibels for stand-alone units. To date, SCAQMD has installed air filtration systems at approximately 80 schools and community centers.

Proposal

SCAQMD and Rainbow staff have requested that schools receiving air filtration systems be located in Huntington Beach in close proximity to the transfer facility and that project completion occur by July 2019. Staff will work with the local school district to negotiate access to three schools that will receive air filtration systems for a period of five years. For this project, gas phase filtration is also included to provide odor control for the schools. The proposed schedule for installation and maintenance of air filtration systems is as follows:

Date	Event
November 2018	Board Approval
November 2018	Anticipated Execution of Contracts
November 2018	Site Assessments
November 2018–July 2019	Installation
November 2018–November 2023	Maintenance (varies by school)
July 2019	Final Report

These actions are to: 1) recognize up to \$250,000 from the settlement agreement with Rainbow into the Air Filtration Fund (75); 2) authorize the Executive Officer to execute an agreement with the local school district for implementing the settlement agreement; and 3) execute a contract with IQAir North America for installation and maintenance of air filtration systems at schools in an amount not to exceed \$250,000 from the Air Filtration Fund (75).

Sole Source Justification

Section VIII. B. 2 of the Procurement Policy and Procedure identifies four major provisions under which a sole source award may be justified. This request for a sole source award is made under provision B.2.c (1): The desired services are available from only the sole-source based upon the unique experience and capabilities of the proposed contractor or contractor team. IQAir remains the only manufacturer of

high performance panel filters, stand-alone and gas phase filtration units identified by SCAQMD and CARB staff that meet the performance standards required to complete the work.

Benefits to SCAQMD

This project will reduce children’s exposure to criteria and toxic pollutants and ultrafine PM. Health studies have determined that fine and ultrafine PM, including diesel PM, present the greatest air pollution health risk to sensitive receptors in geographical target communities identified in the settlement agreement.

Resource Impacts

The new contract with IQAir will not exceed \$250,000, the amount of the settlement agreement.

BOARD MEETING DATE: November 2, 2018

AGENDA NO. 12

PROPOSAL: Approve Contract Awards and Modifications as Approved by MSRC

SYNOPSIS: As part of their FYs 2016-18 Work Program, the MSRC approved new contracts under the Local Government Partnership Program. The MSRC also approved modifications to contracts under the Near-Zero Engine Incentive Program and for programmatic outreach services as part of their FYs 2014-16 Work Program, and a modified award under the Natural Gas Infrastructure Program as part of their FYs 2016-18 Work Program. At this time the MSRC seeks Board approval of the contract awards and modifications as part of the FYs 2014-16 and 2016-18 Work Programs.

COMMITTEE: Mobile Source Air Pollution Reduction Review, October 23, 2018; Recommended for Approval

RECOMMENDED ACTIONS:

1. Approve two contract awards totaling \$337,108 under the Local Government Partnership Program, as part of approval of the FYs 2016-18 Work Program, as described in this letter and as follows:
 - a. A contract with the City of Coachella in an amount not to exceed \$58,020 to install at least two electric vehicle charging stations; and
 - b. A contract with the City of San Bernardino in an amount not to exceed \$279,088 to procure up to two medium-duty and up to three heavy-duty zero-emission vehicles and install at least three electric vehicle charging stations;
2. Approve modified contract with Long Beach Transit under the Near-Zero Engine Incentive Program, substituting the re-power of 39 buses and purchase of one bus with near-zero engines for the purchase of 40 buses equipped with near-zero engines, as part of approval of the FYs 2014-16 Work Program, as described in this letter;
3. Approve modified/novated contract for programmatic outreach services, allowing Better World Group Advisors, Inc. to assume the duties formerly undertaken by the Better World Group, Inc., as part of approval of the FYs 2014-16 Work Program, as described in this letter;

4. Approve modified contract award to Capistrano Unified School District under the Natural Gas Infrastructure Program, changing the description to the expansion of an existing limited access station and training technicians instead of the original description of simply expanding an existing limited access station, with no change to the award amount, as part of approval of the FYs 2016-18 Work Program, as described in this letter;
5. Authorize MSRC the authority to adjust contract awards up to five percent, as necessary and previously granted in prior work programs; and
6. Authorize the Chairman of the Board to execute the new and modified contracts under the FYs 2014-16 and 2016-18 Work Programs, as described above and in this letter.

Larry McCallon
Chair, MSRC

MMM:NB:CR

Background

In September 1990, Assembly Bill 2766 was signed into law (Health & Safety Code Sections 44220-44247) authorizing the imposition of an annual \$4 motor vehicle registration fee to fund the implementation of programs exclusively to reduce air pollution from motor vehicles. AB 2766 provides that 30 percent of the annual \$4 vehicle registration fee subvented to the SCAQMD be placed into an account to be allocated pursuant to a work program developed and adopted by the MSRC and approved by the Board.

At its October 23, 2018 meeting, the MSRC considered recommended awards under the Local Government Partnership Program. The MSRC also considered a modified contract under the Near-Zero Engine Program, a modified award under the Natural Gas Infrastructure Program, and a modified contract for programmatic outreach services. Details are provided below in the Proposals section.

Outreach

In accordance with SCAQMD's Procurement Policy and Procedure, public notices advertising the Local Government Partnership Program solicitation were published in the Los Angeles Times, the Orange County Register, the San Bernardino Sun, and Riverside County Press Enterprise newspapers to leverage the most cost-effective method of outreach to the South Coast Basin. In addition, the solicitation was advertised in the Desert Sun newspaper for expanded outreach in the Coachella Valley.

Additionally, potential bidders may have been notified utilizing SCAQMD's own electronic listing of certified minority vendors. Notice of the solicitation was e-mailed to the Black and Latino Legislative Caucuses and various minority chambers of commerce and business associations, and placed on the Internet at SCAQMD's website

(<http://www.aqmd.gov>). Further, the solicitation was posted on the MSRC's website at <http://www.cleantransportationfunding.org> and electronic notifications were sent to those subscribing to this website's notification service.

Proposals

At its October 23, 2018 meeting, the MSRC considered recommendations from its MSRC-TAC and approved the following:

FYs 2016-18 Local Government Partnership Program

The MSRC approved the release of Local Government Partnership PON2018-01 under the FYs 2016-18 Work Program. The Invitation to Negotiate (ITN), with a targeted funding level of \$21,180,650, focuses on providing funds for projects to support SCAQMD's 2016 AQMP. Cities and counties which have opted into the AB 2766 motor vehicle registration surcharge fee program are eligible to participate. The majority of participants would be allocated maximum funding equivalent to their annual AB 2766 Subvention Fund allocation; however, those whose annual Subvention Fund allocation is less than \$50,000 would be eligible to receive a maximum of \$50,000, and the maximum allocation for any single city or county would be \$3,000,000. MSRC funding could be used for light-duty zero emission vehicle purchases and leases, medium- and heavy-duty zero emission vehicle purchases, near-zero emission heavy-duty alternative fuel vehicle purchases and re-power, electric vehicle charging station installation, and construction or expansion of alternative fuel refueling infrastructure, subject to match funding requirements as outlined in the ITN. Additionally, those jurisdictions eligible for a maximum contribution of \$50,000 would have the option to pursue traffic signal synchronization, bicycle active transportation, and first mile/last mile strategies. The ITN includes an open application period commencing with its release on September 1, 2017, and closing August 2, 2018. The MSRC previously approved awards totaling \$15,997,747 in response to this solicitation. The MSRC approved two additional awards totaling \$337,108 as part of the FYs 2016-18 Work Program, as follows:

- a. A contract with the City of Coachella in an amount not to exceed \$58,020 to install at least two electric vehicle charging stations; and
- b. A contract with the City of San Bernardino in an amount not to exceed \$279,088 to procure up to two medium-duty and up to three heavy-duty zero-emission vehicles and install at least three electric vehicle charging stations.

FYs 2014-16 Near-Zero Engine Incentive Program

In February 2017, the MSRC approved an award to Long Beach Transit in an amount not to exceed \$600,000 for the purchase of 40 new buses with engines meeting the California Air Resources Board's 0.02 g/bhp-hr Optional Standard for NOx. Long Beach Transit was subsequently able to secure funding from federal sources for 39 of the 40 bus purchases. However, they have many existing buses suitable for re-power with the lower emission engines. Long Beach Transit therefore requests to substitute the re-power of 39 buses and purchase of one bus for the purchase of 40 buses. For transit buses, the MSRC's "Near-Zero" Engine Incentive Program provides \$15,000 per engine regardless

of whether the new engine is equipped in a new bus, or is installed in an existing bus. There would be no change in the emissions reductions associated with the project, or its air quality cost-effectiveness. The MSRC considered and approved Long Beach Transit's requested contract modification.

FYs 2014-16 Programmatic Outreach Services

The Better World Group (BWG) currently provides the MSRC with programmatic outreach assistance under Contract #MS16030, which will expire on December 31, 2019. BWG recently informed MSRC staff that their owner and CEO will be retiring at the end of 2018. On or before January 1, 2019, BWG will become a new legal entity named Better World Group Advisors, Inc. (BWGA) and have new co-owners. With the exception of the current owner, the same BWG staff would continue to provide service to the MSRC. Given the current contract termination date, it is anticipated that the regular process of re-competing MSRC's programmatic outreach function will be initiated around the second quarter of 2019. In order to minimize any interruption in programmatic outreach, MSRC and SCAQMD Legal staff recommend execution of a novation agreement. There would be no change to the contract value, tasks or term. The MSRC considered and approved a modification to novate the contract to Better World Group Advisors, Inc.

FYs 2016-18 Natural Gas Infrastructure Program

As an element of their FYs 2016-18 Work Program, the MSRC previously awarded \$116,000 to Capistrano Unified School District as part of the Natural Gas Infrastructure Program. The project was described as the expansion of an existing limited access station, when the description should include both expansion of the station and training technicians. MSRC staff recommended modifying the description to include training technicians, with no change to the award amount. The MSRC considered and approved a modification to include training technicians in the project description.

At this time, the MSRC requests the SCAQMD Board to approve the contract awards and modifications as part of approval of the FYs 2014-16 and 2016-18 AB 2766 Discretionary Fund Work Programs as outlined above. The MSRC also requests the Board to authorize the SCAQMD Chairman of the Board the authority to execute all agreements described in this letter. The MSRC further requests authority to adjust the funds allocated to each project specified in this Board letter by up to five percent of the project's recommended funding. The Board has granted this authority to the MSRC for all past Work Programs.

Resource Impacts

The SCAQMD acts as fiscal administrator for the AB 2766 Discretionary Fund Program (Health & Safety Code Section 44243). Money received for this program is recorded in a special revenue fund (Fund 23) and the contracts specified herein will be drawn from this fund.

BOARD MEETING DATE: November 2, 2018

AGENDA NO. 13

REPORT: Establish Board Meeting Schedule for Calendar Year 2019

SYNOPSIS: The proposed Board Meeting Schedule for Calendar Year 2019 is submitted for Board consideration. The meeting schedule for the Administrative Committee meeting, (second Friday of the month), as well as the other standing committees, is included for information only.

COMMITTEE: Administrative, October 12, 2018; Recommended for Approval

RECOMMENDED ACTION:

Adopt the attached Resolution establishing the 2019 Board Meeting Schedule.

Dr. William A. Burke, Chair
Administrative Committee

nv

Calendar Year 2019 Board Meeting Schedule

<u>MONTH</u>	<u>DATE</u>	<u>TIME</u>
January:.....	January 4.....	9:00 a.m. - end
February:.....	February 1.....	9:00 a.m. - end
March:.....	March 1.....	9:00 a.m. - end
April:.....	April 5.....	9:00 a.m. - end
May:.....	May 3.....	9:00 a.m. - end
June:.....	June 7.....	9:00 a.m. - end
July:	July 12*	9:00 a.m. - end
September:	September 6	9:00 a.m. - end
October:	October 4	9:00 a.m. - end
November:	November 1	9:00 a.m. - end
December:.....	December 6.....	9:00 a.m. - end

*The July Board meeting has been moved to accommodate the Independence Day holiday, and there is no meeting scheduled in August.

Attachments

1. Resolution
2. Proposed 2019 Meeting Schedule for Governing Board and Standing Committees

ATTACHMENT 1

RESOLUTION NO. 18-_____

A Resolution of the South Coast Air Quality Management Governing Board setting the time and place of regular meetings.

WHEREAS, the regular meetings of the South Coast Air Quality Management Governing Board have been established by Resolution in the past, and

WHEREAS, the Governing Board is establishing the regularly scheduled meetings for Calendar Year 2019.

NOW, THEREFORE, BE IT RESOLVED that, effective January 2019, the regular meetings of the Governing Board shall be held at 9:00 a.m. on the first Friday of each month, except for July to accommodate a holiday and August where there is no meeting scheduled, in the Auditorium at SCAQMD Headquarters, 21865 Copley Dr., Diamond Bar, California.

AYES:

NOES:

ABSTAIN:

ABSENT:

Dated: _____

Denise Garzaro, Clerk of the Boards

ATTACHMENT 2
SCAQMD Governing Board & Standing Committees
Proposed 2019 Meeting Schedule

GOVERNING BOARD	STANDING COMMITTEES				
Time – 9:00 a.m.	Legislative Time – 9:00 a.m.	Administrative Time – 10:00 a.m.	Mobile Source Time – 9:00 a.m.	Stationary Source Time – 10:30 a.m.	Technology Time – 12:00 p.m.
January 4	January 11	January 11	January 18	January 18	January 18
February 1	February 8	February 8	February 15	February 15	February 15
March 1	March 8	March 8	March 15	March 15	March 15
April 5	April 12	April 12	April 19	April 19	April 19
May 3	May 10	May 10	May 17	May 17	May 17
June 7	June 14	June 14	June 21	June 21	June 21
July 12*	July 19	July 19	July 26	July 26	July 26
August	DARK				
September 6	September 13	September 13	September 20	September 20	September 20
October 4	October 11	October 11	October 18	October 18	October 18
November 1	November 8	November 8	November 15	November 15	November 15
December 6	December 13	December 13	No Meeting	No Meeting	No Meeting

*Second Friday of the month to accommodate holiday.

BOARD MEETING DATE: November 2, 2018

AGENDA NO. 14

REPORT: Legislative, Public Affairs and Media Report

SYNOPSIS: This report highlights the September 2018 outreach activities of the Legislative, Public Affairs and Media Office, which includes: Major Events, Community Events/Public Meetings, Environmental Justice Update, Speakers Bureau/Visitor Services, Communications Center, Public Information Center, Business Assistance, Media Relations, and Outreach to Community Groups and Federal, State, and Local Government.

COMMITTEE: No Committee Review

RECOMMENDED ACTION:
Receive and file.

Wayne Nastri
Executive Officer

DJA:LTO:DM:jns

BACKGROUND

This report summarizes the activities of the Legislative, Public Affairs and Media Office for September 2018. The report includes: Major Events, Community Events/Public Meetings; Environmental Justice Update; Speakers Bureau/Visitor Services; Communications Center, Public Information Center; Business Assistance; Media Relations; and Outreach to Community Groups and Governments.

MAJOR EVENTS (HOSTED AND SPONSORED)

Each year SCAQMD staff engage in holding and sponsoring a number of major events throughout the SCAQMD's four county area to promote, educate and provide important information to the public regarding reducing air pollution, protecting public health, and improving the air quality and the economy.

September 12

SCAQMD hosted the “Seniors Celebrating Healthy Living & Clean Air Fair” at the Riverside Convention Center. The event provided information on SCAQMD, air quality issues and health. The event was attended by more than 350 seniors from the Inland Empire.

September 26

Staff organized the Fourth Annual Environmental Justice Community Partnership Conference entitled “Technology’s Role in the Future of Environmental Justice” at the Huffington Center at the St. Sophia Cathedral in Los Angeles. The half-day conference was attended by approximately 250 participants. The conference breakout sessions provided attendees with tools and information to address environmental justice issues, as well as a plenary session titled “Green Transportation and Beyond.” Attendees consisted of individuals from non-profits, community groups, academia, health care, government agencies, private sector, and other stakeholders throughout the Basin.

COMMUNITY EVENTS/PUBLIC MEETINGS

Each year SCAQMD staff engage with thousands of residents, providing valuable information about the agency, incentive programs and ways individuals can help reduce air pollution through events and meetings sponsored solely by SCAQMD or in partnership with others. Attendees typically receive the following information:

- Tips on reducing their exposure to smog and its health effects;
- Clean air technologies and their deployment;
- Invitations or notices of conferences, seminars, workshops and other public events;
- SCAQMD incentive programs;
- Ways to participate in SCAQMD’s rule and policy development; and
- Assistance in resolving air pollution-related problems.

SCAQMD staff attended and/or provided information and updates at the following events:

September 16

- National Electric Drive Week Event, Colton/Riverside Public Utilities & University of California, Riverside – CE-CERT Bourns, Riverside

September 19

- CalTrans District 8, Innovation Fair, San Bernardino
- 2018 Anaheim Public Works Transportation Fair, Anaheim

September 20

- 18th Annual Senior Appreciation Luncheon Event, Los Angeles Convention Center

September 22

- SCAQMD Refinery Committee Meeting, Wilmington Middle School, Wilmington

September 28

- International Trade Education Programs (ITEP) Student Conference, California State University Dominguez Hills, Carson

ENVIRONMENTAL JUSTICE UPDATE

The following are key environmental justice-related activities in which staff participated throughout the month of September 2018. These events involve communities affected disproportionately from adverse air quality impacts.

September 4

Staff participated in a meeting with Mojave and Imperial County Air Pollution Control Officers and their staff at SCAQMD in Diamond Bar. SCAQMD staff shared expertise and experience in issue areas including environmental justice and technology advancement. Some of the environmental justice topics shared in the presentation included: AB 617 outreach, experience and partnership with Environmental Justice Groups, and techniques on capacity building.

September 13

Staff participated in the California Environmental Quality Act (CEQA) scoping meeting for Quemetco Inc., at the Hacienda Heights Community Center. There were about 150 attendees including local government, residents, stakeholders, and environmental justice organizations.

September 18

Staff attended the Clean Air Coalition of North Whittier and Avocado Heights Community meeting to provide information on the CEQA scoping process for Quemetco, Inc. There were approximately 150 people in attendance at the meeting.

September 27

Staff attended the MASH Neighborhood Watch meeting in Montebello to provide an overview of SCAQMD and a presentation on air quality issues, incentive programs for residents, and environmental justice initiatives.

SPEAKERS BUREAU/VISITOR SERVICES

SCAQMD regularly receives requests for staff to speak on air quality-related issues from a wide variety of organizations, such as trade associations, chambers of commerce, community-based groups, schools, hospitals and health-based organizations. SCAQMD also hosts visitors from around the world who meet with staff on a wide range of air quality issues.

September 6

- Staff provided a tour of SCAQMD’s Photochemical Assessment Monitoring Station in Rubidoux to a graduate architecture student from the University of Toronto, Ontario, Canada.

September 14

- Staff hosted 16 officials from the Environmental Protection Agency in China at SCAQMD. Staff presented information on air pollution sources in the Basin, air monitoring, rules, air pollution controls, and the Clean Fuels program.

September 20

- Staff presented information to 50 members of the Sisters of St. Joseph of Orange on air quality issues and provided tips to avoid unhealthful air related to recent wildfires.

September 26

- Staff hosted a representative from the University of Seoul, Korea, Department of Environmental Engagement at SCAQMD. Staff met with the representative to discuss sources of air pollution and air monitoring strategies and technology.

COMMUNICATION CENTER STATISTICS

The Communication Center handles calls on SCAQMD’s main line, the 1-800-CUT-SMOG® line, the Spanish line, and after-hours calls to each of those lines. Total calls received in the month of September were:

Calls to SCAQMD’s Main Line and 1-800-CUT-SMOG® Line	3,497
Calls to SCAQMD’s Spanish-language Line	<u>32</u>
Total Calls	3,529

PUBLIC INFORMATION CENTER STATISTICS

The Public Information Center (PIC) handles phone calls and walk-in requests for general information. Information for the month of September is summarized below:

Calls Received by PIC Staff	141
<u>Calls to Automated System</u>	<u>815</u>
Total Calls	956

Visitor Transactions	198
Email Advisories Sent	17,880

BUSINESS ASSISTANCE

SCAQMD notifies local businesses of proposed regulations so they can participate in the agency’s rule development process. SCAQMD also works with other agencies and governments to identify efficient, cost-effective ways to reduce air pollution and shares that information broadly. Staff provides personalized assistance to small businesses both over the telephone and via on-site consultation. The information is summarized below:

- Provided permit application assistance to 215 companies
- Processed 68 Air Quality Permit Checklists
- Conducted 6 free on-site consultations

Types of businesses assisted

Auto Body Shops	Furniture Refinishing Facilities	Printing Facilities
Auto Repair Centers	Gas Stations	Manufacturing Facilities
Dry Cleaners	Plating Facilities	Restaurants
Engineering, Construction, & Architecture Firms		

MEDIA RELATIONS

The Media Office handles all SCAQMD outreach and communications with television, radio, newspapers and all other publications and media operations.

Total Media Inquiries: 114
 Press Releases Issued: 4

Major Media Topics for September

All inquiries closed unless noted as pending

- **Compliance Trends:** L.A. Times interviewed staff on SCAQMD's compliance activity trends over the past 10 years, as well as the number of cases heard by the Hearing Board.
- **Air Quality and Regulation in the Inland Empire:** The Cal State San Bernardino Coyote Chronicle did an on-camera interview with staff to discuss air quality, smog, and regulation in the Inland Empire.
- **Odors in Orange County:** KNX, CBS, NBC, Fullerton Observer and Sun News requested further information regarding odors in Orange County.
- **Odors from Cannabis Operations:** The OC Register requested information regarding inspection and permitting of marijuana dispensaries. An interview was conducted with the reporter from the OC Register regarding odor complaints and permit requirements.
- **Summer Ozone Exceedances:** L.A. Times conducted telephone interviews with staff regarding ozone exceedances during the summer smog season. In response to an article released by L.A. Times citing 87 straight days of poor air quality, staff conducted interviews with KNX, The Daily Caller, Westwood One News, KFI, and ABC7.

- **Coastal Odors:** Staff conducted an interview with KNX Radio regarding coastal odors in the Orange County area.
- **Clean Trucks:** Staff conducted an interview with Trucks.com regarding how clean truck programs at the ports of Los Angeles/Long Beach have influenced other ports around the country.
- **Mira Costa High School:** KNBC and The Beach Reporter inquired about the status of the asbestos cleanup at the school.
- **Flaring:** KNX, KPCC, The Daily Breeze, Bloomberg News and Easy Reader newspaper inquired about flaring events at the Chevron refinery in El Segundo and the release of catalyst dust from the refinery. Staff provided confirmation on the number of complaints received. Easy Reader asked about SCAQMD test results of catalyst dust samples.
- **ExxonMobil:** The Daily Breeze requested a copy of a letter which threatened litigation against SCAQMD. Staff provided a copy of the document and responded to follow-up questions.
- **Idling Buses NOV:** The Daily News asked about the idling buses news release, including the amount of penalty sought by SCAQMD.
- **Refinery Committee:** Bloomberg News, Ibreport.com and Torrance Daily Breeze requested details before, during and after the September 22 Refinery Committee meeting. Questions included what might be discussed, what action would be taken, and when the Board would consider Proposed Rule 1410.
- **Dust from Farm Tractors:** Interchurch News asked about regulations pertaining to dust generated by farm tractors.

Media Campaigns

Check Before You Burn:

- Contractor conducted three community events this month obtaining a total of 1,662 pledges and 933 Air Alerts signups to date.

The Right to Breathe

- The film was shown at the 2018 Environmental Justice Conference
- The Google AdWords campaign received 4,602 clicks, 4.798 million impressions, and 2.18 million views during September.

News Releases & Media Advisories Issued

- Riverside County Supervisor V. Manuel Perez Joins SCAQMD Board - September 7, 2018
- Refinery Committee Directs Development of Measure to Phase Out Toxic Chemical at Two Refineries - September 22, 2018
- SCAQMD Curbs Excess Emissions from Idling Coach Buses - September 25, 2018
- SCAQMD Hosts 4th Annual Environmental Justice Conference - September 26, 2018

OUTREACH TO COMMUNITY GROUPS AND FEDERAL, STATE, AND LOCAL GOVERNMENTS

Field visits and/or communications were conducted with elected officials or staff from the following cities:

Alhambra	Irvine	Rialto
Anaheim	Irwindale	Riverside
Arcadia	La Cañada Flintridge	Redlands
Azusa	La Puente	Rosemead
Baldwin Park	La Verne	San Bernardino
Bradbury	Laguna Niguel	Santa Ana
Buena Park	Lake Forest	San Dimas
Carson	Long Beach	San Gabriel
Claremont	Los Angeles	San Marino
Covina	Mission Viejo	Seal Beach
Cypress	Monrovia	South Pasadena
Diamond Bar	Monterey Park	Temple City
Duarte	Newport Beach	Tustin
El Monte	Norco	Walnut
Glendora	Pasadena	West Covina
Huntington Beach	Perris	Westminster
Industry	Pomona	

Visits and/or communications were conducted with elected officials or staff from the following state and federal offices:

- U.S. Senator Diane Feinstein
- U.S. Senator Kamala Harris
- U.S. Representative Nanette Barragán
- U.S. Representative Ken Calvert
- U.S. Representative Ted Lieu
- U.S. Representative Grace Napolitano
- U.S. Representative Dana Rohrabacher
- Senator Steven Bradford
- Senator Ed Hernandez
- Senator Kevin de León
- Assembly Majority Floor Leader Ian Calderon
- Assembly Member Autumn Burke
- Assembly Member Ed Chau
- Assembly Member Mike Gipson
- Assembly Member Matt Harper
- Assembly Member Chris Holden
- Assembly Member Patrick O'Donnell
- Los Angeles County Supervisor Janice Hahn

Staff represented SCAQMD and/or provided updates or a presentation to the following governmental agencies and business organizations:

Costa Mesa Chamber of Chamber of Commerce
GRID Alternatives Inland Empire
Jiangsu Environmental Protection Department
Metrolink
Newport Beach Chamber of Commerce
Northwest San Pedro Neighborhood Council
Orange County Business Council
Orange County Council of Governments
Santa Ana Chamber of Commerce
South Bay Association of Chambers of Commerce

Staff represented SCAQMD and/or provided updates or a presentation to the following community and educational groups and organizations:

California State University, Los Angeles
Clean Air Coalition of North Whittier & Avocado Heights
MASH Neighborhood Watch Group, Montebello
Wilmington Neighborhood Council

[↑ Back to Agenda](#)

BOARD MEETING DATE: November 2, 2018

AGENDA NO. 15

REPORT: Hearing Board Report

SYNOPSIS: This reports the actions taken by the Hearing Board during the period of September 1 through September 30, 2018.

COMMITTEE: No Committee Review

RECOMMENDED ACTION:
Receive and file.

Julie Prussack
Chairman of Hearing Board

DG

Two summaries are attached: **September 2018 Hearing Board Cases** and **Rules From Which Variances and Orders for Abatement Were Requested in 2018**. An Index of District Rules is also attached.

The total number of appeals filed during the period September 1 to September 30, 2018 is 0; and total number of appeals filed during the period of January 1 to September 30, 2018 is 0.

Report of September 2018 Hearing Board Cases

Case Name and Case No. (SCAQMD Attorney)	Rules	Reason for Petition/Hearing	District Position/ Hearing Board Action	Type and Length of Variance or Order	Excess Emissions
1. Air Liquide Large Industries U.S. LP Case No. 5705-6 (B. Tomasovic)	203(b) 1173(g)(1) 2004(f)(1) 3002(c)(1)	Additional time needed to repair unexpected leak.	Not Opposed/Granted	Ex Parte EV granted commencing 9/6/18 and continuing through 9/12/18 or until final compliance is achieved, whichever occurs first.	VOC: 0.8 lb/day
2. Frontier California, Inc. Case No. 6116-1 (N. Feldman)	203(b)	Emergency generator has exceeded annual permitted hours of operation due to wildfire.	Not Opposed/Granted	RV granted commencing 9/20/18 and continuing through 12/31/18, the FCD.	Fees waived per Rule 303(p)
3. JAACK Oil Inc., dba ARCO AM/PM Facility #42248 Case No. 6119-1 (S. Hanizavareh)	461	Additional time needed to comply with vapor recovery rule.	Opposed/Denied	Ex Parte EV denied.	N/A
4. SCAQMD vs. Fairplex Case No. 5739-2 (D. Hsu)	203(b) 218(f) 1110.2(e)(3)(b) 1110.2(f)(1)	Respondent operating ICES without proper records and required testing.	Stipulated/Issued	O/A issued commencing 9/4/18 and continuing through 9/4/20. The Hearing Board shall retain jurisdiction over this matter until 9/4/20.	N/A
5. SCAQMD vs. Mission Community Hospital Case No. 6109-1 (K. Manwaring)	1146(d)(6) 1146(d)(8) H&S Code §42401	District sought modifications to stipulated order to further require timely retrofit of boilers and necessary testing.	Stipulated/Issued	Mod. O/A issued commencing 9/12/18 and continuing through 12/31/19. The Hearing Board shall retain jurisdiction over this matter until 12/31/19.	N/A
6. SCAQMD vs. Quality Aluminum Forge Case No. 6118-2 (N. Feldman)	202(a) 1430(d)(8)(A)	Require compliance with total enclosure and negative air requirements for metal grinding operations.	Stipulated/Issued	O/A issued commencing 9/12/18 and continuing through 3/31/19. The Hearing Board shall retain jurisdiction over this matter until 3/31/19.	N/A
7. Universal City Studios, LLC Case No. 4935-16 (Consent Calendar; No Appearance)	401(b)(1) H&S Code §41701	Petitioner will use artificial fog for Halloween production exceeding opacity limits.	Not Opposed/Granted	SV granted commencing 9/8/18 and continuing through 11/5/18.	Opacity: TBD by 10/17/18

Acronyms

EV: Emergency Variance

FCD: Final Compliance Date

H&S: Health & Safety Code

ICE: Internal Combustion Engine

N/A: Not Applicable

O/A: Order for Abatement

Mod. O/A: Modification of Order for Abatement

RV: Regular Variance

SV: Short Variance

TBD: To Be Determined

VOC: Volatile Organic Compounds

Rules from which Variances and Orders for Abatement were Requested in 2018														
	2018	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total Actions
# of HB Actions Involving Rules														
109(c)(1)				1										1
202(a)								1		1				2
203(a)				2			1	1	1					5
203(b)		2	4	2	4	2	3	2	4	3				26
218(f)										1				1
222							1							1
401(b)(1)										1				1
402								1						1
431.1(c)(2)					2	1	1							4
461										1				1
461(c)(2)(B)								1						1
461(c)(3)(P)								1						1
461(e)(5)								3						3
463(c)(2)							2							2
463(d)(2)							2							2
463(e)(4)							2							2
463(f)(1)(C)							2							2
1110.2(d)(1)(F)							1							1
1110.2(d)(1)(H)							1							1
1110.2(d)(1)(L)				1										1
1110.2(e)(3)(b)										1				1
1110.2(f)(1)										1				1
1146(d)(6)							1			1				2
1146(d)(8)							1			1				2
1146.2							1							1
1146.2(e)							1							1
1147							1	1						2
1147(c)(1)		1							1					2
1149(c)(1)							1							1
1149(c)(2)							1							1
1149(c)(7)							1							1
1173(g)(1)										1				1
1178(d)(3)							2							2
1178(g)							2							2
1178(h)(4)							2							2
1407				1										1
1415(d)(1)(A)							1							1
1420.2				2		1			1					4
1420.2(g)(3)(B)									1					1
1430									1					1
1430(d)(8)(A)									1	1				2
1470							1							1
2004(f)(1)		2	3		2		2	1	1	1				12
2011(c)(2)(A)		1												1
2011(c)(2)(B)		1												1
2011(e)(1)		1												1
2012(c)(2)(A)		1												1
2012(c)(2)(B)		1												1
2012(g)(1)		1												1
3002(e)		1												1
3002(c)(1)		1	3		3		3	2	2	1				15
H&S 41700								1						1
H&S 41701										1				1
H&S 42401										1				1

**DISTRICT RULES AND REGULATIONS INDEX
FOR 2018 HEARING BOARD CASES AS OF SEPTEMBER 30, 2018**

REGULATION I – GENERAL PROVISIONS

Rule 109 Recordkeeping for Volatile Organic Compound Emissions

REGULATION II – PERMITS

Rule 202 Temporary Permit to Operate

Rule 203 Permit to Operate

Rule 218 Continuous Emission Monitoring

Rule 222 Filing Requirements for Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation II

REGULATION IV – PROHIBITIONS

Rule 401 Visible Emissions

Rule 402 Nuisance

Rule 431.1 Sulfur Content of Gaseous Fuels

Rule 461 Gasoline Transfer and Dispensing

Rule 463 Organic Liquid Storage

REGULATION XI - SOURCE SPECIFIC STANDARDS

Rule 1110.2 Emissions from Gaseous- and Liquid-Fueled Internal Combustion Engines

Rule 1143 Consumer Paint Thinners and Multi-Purpose Solvents

Rule 1146 Emissions of Oxides of Nitrogen from Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters

Rule 1146.2 Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters

Rule 1147 NOx Reductions from Miscellaneous Sources

Rule 1149 Storage Tank and Pipeline Cleaning and Degassing

Rule 1173 Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants

Rule 1178 Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities

REGULATION XIV – TOXICS AND OTHER NON-CRITERIA POLLUTANTS

- Rule 1407 Control of Emissions of Arsenic, Cadmium, and Nickel from Non-Ferrous Metal Melting Operations
- Rule 1415 Reduction of Refrigerant Emissions from Stationary Air Conditioning Systems
- Rule 1420.2 Emission Standard for Lead from Metal Melting Facilities
- Rule 1430 Control of Emissions from Metal Grinding Operations at Metal Forging Facilities
- Rule 1470 Requirements for Stationary Diesel-Fueled Internal Combustion and Other Ignition Engines

REGULATION XX - REGIONAL CLEAN AIR INCENTIVES MARKET (RECLAIM)

- Rule 2004 Requirements
- Rule 2011 Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Sulfur (SO_x) Emissions
- Rule 2012 Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Nitrogen (NO_x) Emissions

REGULATION XXX - TITLE V PERMITS

- Rule 3002 Requirements

CALIFORNIA HEALTH AND SAFETY CODE

- §41700 Prohibited Discharges
- §41701 Restricted Discharges
- §42401 Violation of Abatement Order; Civil Penalty

[↑ Back to Agenda](#)

BOARD MEETING DATE: November 2, 2018

AGENDA NO. 16

REPORT: Civil Filings and Civil Penalties Report

SYNOPSIS: This reports the monthly penalties from September 1, 2018 through September 30, 2018, and legal actions filed by the General Counsel's Office from September 1 through September 30, 2018. An Index of District Rules is attached with the penalty report.

COMMITTEE: Stationary Source, October 19, 2018, Reviewed

RECOMMENDED ACTION:
Receive and file.

Bayron T. Gilchrist
General Counsel

BTG:ew

<u>Civil Filings</u>	<u>Violations</u>
1. RH Roofing, Inc.; Rafael Henriquez Lopez Orange County Superior Court Case No. 30-2018-01018610-CU-MC-CJC; Filed 9.13.18 (NSF) P63071 R. 1403 - Asbestos Emissions from Demolition/Renovation Activities	1
	1 Violation

Attachments

September 2018 Penalty Report
Index of District Rules and Regulations

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
General Counsel's Office**

September 2018 Settlement Penalty Report

<u>Total Penalties</u>	
Civil Settlements:	\$293,750.00
Settlements including SEP:	\$40,000.00
MSPAP Settlements:	\$6,475.00
Total Cash Settlements:	\$340,225.00
Total SEP Value:	\$10,000.00
Fiscal Year through 9 / 2018 Cash Total:	\$1,069,392.00
Fiscal Year through 9 / 2018 SEP Value Only Total:	\$10,000.00

Fac ID	Company Name	Rule Number	Settled Date	Init	Notice Nbr	Total Settlement
Civil Settlements						
800030	CHEVRON PRODUCTS CO.	3002	9/14/2018	TRB	P58242	\$160,000.00
800032	CHEVRON USA INC	3002(c)(1) 462(d)(1)(F)	9/13/2018	TRB	P65314	\$10,000.00
19144	CORONET MFG CO INC	3002 3003	9/13/2018	VKT	P64013	\$1,250.00
181082	DAVITA DIALYSIS	203 (a)	9/7/2018	WBW	P56738	\$4,000.00

Fac ID	Company Name	Rule Number	Settled Date	Init	Notice Nbr	Total Settlement
92901	DYNAMIC POWDER COATING	203 (a) 1155	9/11/2018	NSF	P58084 P58089 P60452	\$5,000.00
175388	GRAND GAS, INC.	461 203	9/21/2018	SMP	P63215 P64983	\$6,000.00
100145	HARBOR FUMIGATION INC	3002	9/27/2018	SH	P63555	\$15,000.00
131732	NEWPORT FAB, LLC	2004	9/6/2018	DH	P56342 P56343 P60573	\$40,000.00
131732	NEWPORT FAB, LLC	2004	9/6/2018	DH	P64145	\$2,500.00
97081	THE TERMO COMPANY	1148.1 1173 221 462 2004	9/11/2018	NAS	P37248 P37249 P56994 P56995 P59379 P59381 P59383 P60867 P61526 P62956	\$50,000.00

Total Civil Settlements: \$293,750.00

Fac ID	Company Name	Rule Number	Settled Date	Init	Notice Nbr	Total Settlement
Settlements including SEP						
14364	CHEMICAL LIME CO	1155	9/19/2018	MJR	P61806	\$40,000.00
	<i>SEP \$10,000 - Facility to purchase equipment by November 1, 2018</i>	203				
		401				

Total Settlements including SEP: \$40,000

Fac ID	Company Name	Rule Number	Settled Date	Init	Notice Nbr	Total Settlement
MSPAP Settlements						
167320	ANABI OIL CORP. DBA C-MINI MART, INC.	461(c)(3)(Q)	9/26/2018	GC	P70560	\$600.00
184713	EQUITY RESIDENTIAL (HESBY)	203	9/11/2018	GC	P65152	\$200.00
183372	H & M INC DBA ARCO OF FULLERTON	461	9/11/2018	GC	P64982	\$650.00
800428	LAMPS PLUS INC/ PACIFIC COAST LIGHTING	3002(c)(1)	9/27/2018	TF	P66764	\$500.00
179343	MOTORS PETROLEUM INC	461	9/27/2018	TF	P66351	\$850.00
121344	NO. ORANGE CTY COMMUNITY COLLEGE DIST.	461(c)(3)(Q)	9/27/2018	TF	P71028	\$200.00
34300	PIERCE BROTHERS INC. - SCI CALIF FUNERALS	201 203 (a)	9/27/2018	TF	P68201	\$1,600.00
186766	RANCHO CALIFORNIA LANDSCAPING, INC.	203	9/27/2018	TF	P67653	\$800.00
160732	THRIFTY TREE SERVICE INC	PERP 2460	9/27/2018	TF	P66754	\$275.00
123861	VERIZON WIRELESS, JOHNSTONE PEAK	203 (a)	9/27/2018	TF	P65381	\$800.00

Total MSPAP Settlements: \$6,475.00

**DISTRICT'S RULES AND REGULATIONS INDEX
FOR SEPTEMBER 2018 PENALTY REPORT**

REGULATION II - PERMITS

Rule 201 Permit to Construct
Rule 203 Permit to Operate
Rule 221 Plans

REGULATION IV - PROHIBITIONS

Rule 401 Visible Emissions
Rule 461 Gasoline Transfer and Dispensing
Rule 462 Organic Liquid Loading

REGULATION XI - SOURCE SPECIFIC STANDARDS

Rule 1148.1 Oil and Gas Production Wells
Rule 1155 Particulate Matter Control Devices
Rule 1173 Fugitive Emissions of Volatile Organic Compounds

REGULATION XX - REGIONAL CLEAN AIR INCENTIVES MARKET (RECLAIM)

Rule 2004 Requirements

REGULATION XXX - TITLE V PERMITS

Rule 3002 Requirements
Rule 3003 Applications

CALIFORNIA CODE OF REGULATIONS

13 CCR 2460 Portable Equipment Testing Requirements

BOARD MEETING DATE: November 2, 2018

AGENDA NO. 17

REPORT: Lead Agency Projects and Environmental Documents Received By SCAQMD

SYNOPSIS: This report provides, for the Board's consideration, a listing of CEQA documents received by the SCAQMD between September 1, 2018 and September 30, 2018, and those projects for which the SCAQMD is acting as lead agency pursuant to CEQA.

COMMITTEE: Mobile Source, October 19, 2018; Reviewed

RECOMMENDED ACTION:
Receive and file.

Wayne Natri
Executive Officer

PF:SN:MK:DG:LW

CEQA Document Receipt and Review Logs (Attachments A and B) – Each month, the SCAQMD receives numerous CEQA documents from other public agencies on projects that could adversely affect air quality. A listing of all documents received and reviewed during the reporting period September 1, 2018 through September 30, 2018 is included in Attachment A. A list of active projects from previous reporting periods for which SCAQMD staff is continuing to evaluate or has prepared comments is included in Attachment B. A total of 90 CEQA documents were received during this reporting period and 42 comment letters were sent. Notable projects to highlight in this report include the Berths 97-109 [China Shipping] Container Terminal Project, the Santa Susana Field Laboratory Project, and the Aircraft Heat Treating Dust Collection Project.

The Intergovernmental Review function, which consists of reviewing and commenting on the adequacy of the air quality analysis in CEQA documents prepared by other lead agencies, is consistent with the Board's 1997 Environmental Justice Guiding Principles and Environmental Justice Initiative #4. As required by the Environmental Justice Program Enhancements for FY 2002-03 approved by the Board in October 2002, each of the attachments notes those proposed projects where the SCAQMD has been

contacted regarding potential air quality-related environmental justice concerns. The SCAQMD has established an internal central contact to receive information on projects with potential air quality-related environmental justice concerns. The public may contact the SCAQMD about projects of concern by the following means: in writing via fax, email, or standard letters; through telephone communication; as part of oral comments at SCAQMD meetings or other meetings where SCAQMD staff is present; or by submitting newspaper articles. The attachments also identify for each project the dates of the public comment period and the public hearing date, if applicable, as reported at the time the CEQA document is received by the SCAQMD. Interested parties should rely on the lead agencies themselves for definitive information regarding public comment periods and hearings as these dates are occasionally modified by the lead agency.

At the January 6, 2006 Board meeting, the Board approved the Workplan for the Chairman's Clean Port Initiatives. One action item of the Chairman's Initiatives was to prepare a monthly report describing CEQA documents for projects related to goods movement and to make full use of the process to ensure the air quality impacts of such projects are thoroughly mitigated. In response to describing goods movement, CEQA documents (Attachments A and B) are organized to group projects of interest into the following categories: goods movement projects; schools; landfills and wastewater projects; airports; general land use projects, etc. In response to the mitigation component, guidance information on mitigation measures were compiled into a series of tables relative to: off-road engines; on-road engines; harbor craft; ocean-going vessels; locomotives; fugitive dust; and greenhouse gases. These mitigation measure tables are on the CEQA webpages portion of the SCAQMD's website at: <http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/mitigation-measures-and-control-efficiencies>. Staff will continue compiling tables of mitigation measures for other emission sources, including airport ground support equipment and other sources.

As resources permit, staff focuses on reviewing and preparing comments for projects: where the SCAQMD is a responsible agency; that may have significant adverse regional air quality impacts (e.g., special event centers, landfills, goods movement, etc.); that may have localized or toxic air quality impacts (e.g., warehouse and distribution centers); where environmental justice concerns have been raised; and those projects for which a lead or responsible agency has specifically requested SCAQMD review. If staff provided written comments to the lead agency as noted in the column "Comment Status," there is a link to the "SCAQMD Letter" under the Project Description. In addition, if staff testified at a hearing for the proposed project, a notation is provided under the "Comment Status." If there is no notation, then staff did not provide testimony at a hearing for the proposed project.

During the period September 1, 2018 through September 30, 2018, the SCAQMD received 90 CEQA documents. Of the total of 116 documents* listed in Attachments A and B:

- 42 comment letters were sent;
- 23 documents were reviewed, but no comments were made;
- 39 documents are currently under review;
- 11 documents did not require comments (e.g., public notices);
- 0 documents were not reviewed; and
- 1 document was screened without additional review.

* These statistics are from September 1, 2018 to September 30, 2018 and may not include the most recent “Comment Status” updates in Attachments A and B.

Copies of all comment letters sent to lead agencies can be found on the SCAQMD’s CEQA webpage at the following internet address:
<http://www.aqmd.gov/home/regulations/ceqa/commenting-agency>.

SCAQMD Lead Agency Projects (Attachment C) – Pursuant to CEQA, the SCAQMD periodically acts as lead agency for stationary source permit projects. Under CEQA, the lead agency is responsible for determining the type of CEQA document to be prepared if the proposal is considered to be a “project” as defined by CEQA. For example, an Environmental Impact Report (EIR) is prepared when the SCAQMD, as lead agency, finds substantial evidence that the proposed project may have significant adverse effects on the environment. Similarly, a Negative Declaration (ND) or Mitigated Negative Declaration (MND) may be prepared if the SCAQMD determines that the proposed project will not generate significant adverse environmental impacts, or the impacts can be mitigated to less than significance. The ND and MND are written statements describing the reasons why proposed projects will not have a significant adverse effect on the environment and, therefore, do not require the preparation of an EIR.

Attachment C to this report summarizes the active projects for which the SCAQMD is lead agency and is currently preparing or has prepared environmental documentation. As noted in Attachment C, the SCAQMD continued working on the CEQA documents for four active projects during September.

Attachments

- A. Incoming CEQA Documents Log
- B. Ongoing Active Projects for Which SCAQMD Has or Will Conduct a CEQA Review
- C. Active SCAQMD Lead Agency Projects

**ATTACHMENT A
INCOMING CEQA DOCUMENTS LOG
September 01, 2018 to September 30, 2018**

SCAQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
<i>Industrial and Commercial</i> LAC180911-07 Dissolved Phase Management Plan (Phillips 66 Los Angeles Refinery Wilmington Plant)	The proposed project consists of installation of two groundwater monitoring wells and four groundwater extraction wells on 424 acres. The project is located at 1660 West Anaheim Street on the southeast corner of Anaheim Street and Gaffey Street in the community of Wilmington. Reference: LAC170801-09 Comment Period: 8/29/2018 - 10/1/2018 Public Hearing: N/A	Community Notice	Los Angeles Regional Water Quality Control Board	Document reviewed - No comments sent
<i>Industrial and Commercial</i> LAC180911-11 Media Studios Project	The proposed project consists of construction of a 160,447-square-foot office building on a 1.73-acre portion of 11.38 acres. The project is located on the northeast corner of North Avon Street and Empire Avenue. Reference LAC180130-04 and LAC130219-03 Comment Period: 9/10/2018 - 10/24/2018 Public Hearing: 10/8/2018	Draft Environmental Impact Report	City of Burbank	Document reviewed - No comments sent
<i>Industrial and Commercial</i> LAC180920-01 ENV-2016-4637: 3505 S. Sepulveda Blvd.	The proposed project consists of construction of an 880-square-foot restaurant on 14,167 square feet. The project is located on the southwest corner of Palms Boulevard and South Sepulveda Boulevard in the community of Palms-Ma Vista-Del Rey. Comment Period: 9/20/2018 - 10/10/2018 Public Hearing: N/A	Mitigated Negative Declaration	City of Los Angeles	Document reviewed - No comments sent
<i>Industrial and Commercial</i> LAC180927-05 Aerocraft Heat Treating Dust Collection Project (Conditional Use Permit No. 854)	The proposed project consists of installation of four new dust collectors attached to two existing buildings on 1.6 acres. The project is located at 15701 Minnesota Avenue on the southwest corner of Madison Street and Minnesota Avenue. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2018/aerocraft-heat-100918.pdf Comment Period: 9/19/2018 - 10/9/2018 Public Hearing: 10/9/2018	Mitigated Negative Declaration	City of Paramount	SCAQMD staff commented on 10/9/2018

- Project has potential environmental justice concerns due to the nature and/or location of the project.
Documents received by the CEQA Intergovernmental Review program but not requiring review are not included in this report.

**ATTACHMENT A
INCOMING CEQA DOCUMENTS LOG
September 01, 2018 to September 30, 2018**

SCAQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
<i>General Land Use (residential, etc.)</i> ORC180921-01 Newport & Ford Residential Project (GP-18-02, R-18-01, PA-18-05, TTM 18156)	The proposed project consists of subdivision of 1.86 acres for future development of 38 residential units. The project is located at 1957 and 1963 Newport Boulevard, and 390 Ford Road on the northwest and southwest corner of Ford Road and Newport Boulevard. Reference: ORC180814-03 Comment Period: N/A Public Hearing: 10/2/2018	Notice of Public Hearing	City of Costa Mesa	Document reviewed - No comments sent
<i>General Land Use (residential, etc.)</i> ORC180925-04 Newport & Ford Residential Project (GP-18-02, R-18-01, PA-18-05, TTM 18156)	The proposed project consists of subdivision of 1.86 acres for future development of 38 residential units. The project is located at 1957 and 1963 Newport Boulevard, and 390 Ford Road on the northwest and southwest corner of Ford Road and Newport Boulevard. Reference: ORC180814-03 and ORC180921-01 Comment Period: N/A Public Hearing: 10/2/2018	Response to Comments	City of Costa Mesa	Document reviewed - No comments sent
<i>General Land Use (residential, etc.)</i> RVC180905-03 MA17273 (TTM37395)	The proposed project consists of subdivision of 2.5 acres for future development of four residential units. The project is located near the southwest corner of Ridgeview Avenue and 58th Street. Reference RVC180110-01 http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2018/spma17273-091318.pdf Comment Period: 9/5/2018 - 9/19/2018 Public Hearing: N/A	Site Plan	City of Jurupa Valley	SCAQMD staff commented on 9/13/2018
<i>General Land Use (residential, etc.)</i> RVC180911-02 Commercial Marijuana Cultivation Permit 17-05/Comc-17-06	The proposed project consists of construction of additional 7,200 square feet to an existing 18,000-square-foot building on 1.3 acres. The project is located at 1280 South Buena Vista Street on the northwest corner of South Buena Vista Street and West Esplanade Avenue. Reference RVC171108-06 http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2018/spcommercialmarijuana-091218.pdf Comment Period: 9/1/2018 - 9/11/2018 Public Hearing: 9/4/2018	Site Plan	City of San Jacinto	SCAQMD staff commented on 9/12/2018

- Project has potential environmental justice concerns due to the nature and/or location of the project.
 Documents received by the CEQA Intergovernmental Review program but not requiring review are not included in this report.

ATTACHMENT B
ONGOING ACTIVE PROJECTS FOR WHICH SCAQMD HAS
OR IS CONTINUING TO CONDUCT A CEQA REVIEW

<u>SCAQMD LOG-IN NUMBER</u> PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
<i>Industrial and Commercial</i> RVC180821-01 Canyon Steel Industrial Building - Development Review (DPR) 18-00006	The proposed project consists of construction of a 25,500-square-foot manufacturing and office building on 3.72 acres. The project is located on the northwest corner of Patterson Avenue and California Avenue. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2018/spcanyonsteel-090618.pdf Comment Period: 8/15/2018 - 9/5/2018 Public Hearing: N/A	Site Plan	City of Perris	SCAQMD staff commented on 9/6/2018
<i>Utilities</i> RVC180808-01 Solar Photovoltaic Renewable Energy Initiative - Phase III Project	The proposed project consists of installation of solar arrays and associated equipment at four regional water reclamation facilities totaling 128.2 acres. The project is located at 17140 Kitching Street, 1330 East Watson Road, 29285 Valley Boulevard, and 770 North Sanderson Avenue, northeast of the Goetz Road and Newport Road intersection, in the cities of Moreno Valley, Perris, Menifee, and San Jacinto. Reference RVC140715-08 http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2018/nopsolarphotovoltaic-090618.pdf Comment Period: 8/6/2018 - 9/5/2018 Public Hearing: N/A	Notice of Preparation	Eastern Municipal Water District	SCAQMD staff commented on 9/6/2018
<i>Utilities</i> RVC180821-07 Desert Hot Springs Wind Energy Repowering Project	The proposed project consists of decommissioning of 69 existing wind turbines, construction of four new wind turbines that are 493 feet in height and would produce up to 17 megawatts (MW) of wind energy, and future decommissioning of new wind turbines at the end of their useful life on 160 acres. The project would also include installation of one permanent and one temporary 309-foot meteorological tower. The project is located northwest of the Windhaven Road and 16th Avenue intersection. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2018/nopdeserthotsprings-091118.pdf Comment Period: 8/20/2018 - 9/13/2018 Public Hearing: 9/13/2018	Notice of Preparation	City of Desert Hot Springs	SCAQMD staff commented on 9/11/2018
<i>Transportation</i> LAC180828-05 Dugout Loop High Speed Transportation Project	The proposed project consists of construction of a 3.6-mile subterranean, battery-powered, high-speed public transportation system. The project extends from the intersection of Stadium Way and Vin Scully Avenue in the community of Elysian Park to the intersection of Vermont Avenue and Sunset Boulevard, Vermont Avenue and Santa Monica Boulevard, or Vermont Avenue and Beverly Boulevard in the community of Los Feliz, East Hollywood, or Rampart Village. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2018/nopdugoutloop-090618.pdf Comment Period: 8/16/2018 - 9/17/2018 Public Hearing: 8/28/2018	Notice of Preparation	City of Los Angeles	SCAQMD staff commented on 9/6/2018

- Project has potential environmental justice concerns due to the nature and/or location of the project.

ATTACHMENT B
ONGOING ACTIVE PROJECTS FOR WHICH SCAQMD HAS
OR IS CONTINUING TO CONDUCT A CEQA REVIEW

SCAQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
<i>General Land Use (residential, etc.)</i> LAC180809-04 North Barn Project at Santa Anita Park	The proposed project consists of construction of nine barns with 816 horse stalls, 70 tack and 70 feed storage bins, 36 office spaces, a café and recreation area, a 14,450-square-foot manure transfer facility, and a 27,360-square-foot building with 104 dormitory units on 36 acres. The project is located near the northwest corner of Colorado Place and West Huntington Drive. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2018/nopnorthbarn-090618.pdf Comment Period: 8/9/2018 - 9/10/2018 Public Hearing: 8/23/2018	Notice of Preparation	City of Arcadia	SCAQMD staff commented on 9/6/2018
<i>General Land Use (residential, etc.)</i> LAC180814-11 Berths 118 and 119 (Kinder Morgan) Wharf Repair Project	The proposed project consists of construction of berthing and structural repairs including repair of wharf-support timber piles and wharf deck, and installation of new wharf-support and fender piles. The project is located near the southeast corner of John S. Gibson Boulevard and West Harry Bridges Boulevard. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2018/mndberths118and119-091218.pdf Comment Period: 8/13/2018 - 9/11/2018 Public Hearing: N/A	Notice of Intent to Adopt a Mitigated Negative Declaration	City of Los Angeles Harbor Department	SCAQMD staff commented on 9/12/2018
<i>General Land Use (residential, etc.)</i> LAC180816-02 ENV-2017-4078: 6711 S. Sepulveda Blvd.	The proposed project consists of demolition of existing storage facility, and construction of a 160,830-square-foot building with 180 residential units and subterranean parking on 53,610 square feet. The project is located near the northwest corner of Sepulveda Boulevard and Center Drive in the community of Westchester-Playa Del Rey. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2018/mnd6711ssepulveda-091118.pdf Comment Period: 8/16/2018 - 9/5/2018 Public Hearing: N/A	Mitigated Negative Declaration	City of Los Angeles	SCAQMD staff commented on 9/11/2018
<i>General Land Use (residential, etc.)</i> LAC180828-07 1375 St. Andrews Apartments (ENV-2015-4630-EIR)	The proposed project consists of demolition of two buildings totaling 35,057 square feet, and construction of a 226,160-square-foot building with 185 residential units and subterranean parking on 1.7 acres. The project is located on the southwest corner of St. Andrews Place and West De Longpre Avenue in the community of Hollywood. Reference LAC160525-02 http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2018/375-st-andrews-apartment-100918.pdf Comment Period: 8/23/2018 - 10/8/2018 Public Hearing: N/A	Notice of Availability of a Draft Environmental Impact Report	City of Los Angeles	SCAQMD staff commented on 10/9/2018
<i>General Land Use (residential, etc.)</i> LAC180830-07 The Creek at Dominguez Hills Project	The proposed project consists of construction of 532,500 square feet of recreation, health, fitness, and wellness uses on 87 acres. The project is located at 340 Martin Luther King, Jr. Street on the northwest corner of East Del Amo Boulevard and South Avalon Boulevard in the City of Carson. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2018/nopthecreekatdominguez-091118.pdf Comment Period: 8/28/2018 - 9/27/2018 Public Hearing: 9/13/2018	Notice of Preparation	County of Los Angeles	SCAQMD staff commented on 9/11/2018

- Project has potential environmental justice concerns due to the nature and/or location of the project.

**ATTACHMENT C
ACTIVE SCAQMD LEAD AGENCY PROJECTS
THROUGH SEPTEMBER 30, 2018**

PROJECT DESCRIPTION	PROPONENT	TYPE OF DOCUMENT	STATUS	CONSULTANT
<p>The Phillips 66 (formerly ConocoPhillips) Los Angeles Refinery Ultra Low Sulfur Diesel project was originally proposed to comply with federal, state and SCAQMD requirements to limit the sulfur content of diesel fuels. Litigation against the CEQA document was filed. Ultimately, the California Supreme Court concluded that the SCAQMD had used an inappropriate baseline and directed the SCAQMD to prepare an EIR, even though the project has been built and has been in operation since 2006. The purpose of this CEQA document is to comply with the Supreme Court's direction to prepare an EIR.</p>	<p>Phillips 66 (formerly ConocoPhillips), Los Angeles Refinery</p>	<p>Environmental Impact Report (EIR)</p>	<p>The Notice of Preparation/Initial Study (NOP/IS) was circulated for a 30-day public comment period on March 26, 2012 to April 26, 2012. The consultant submitted the administrative Draft EIR to SCAQMD in late July 2013. The Draft EIR was circulated for a 45-day public review and comment period from September 30, 2014 to November 13, 2014. Two comment letters were received and the consultant has prepared responses to comments which are undergoing SCAQMD review.</p>	<p>Environmental Audit, Inc.</p>
<p>Quemetco is proposing to modify existing SCAQMD permits to allow the facility to recycle more batteries and to eliminate the existing daily idle time of the furnaces. The proposed project will increase the rotary feed drying furnace feed rate limit from 600 to 750 tons per day and increase the amount of total coke material allowed to be processed. In addition, the project will allow the use of petroleum coke in lieu of or in addition to calcined coke, and remove one existing emergency diesel-fueled internal combustion engine (ICE) and install two new emergency natural gas-fueled ICEs.</p>	<p>Quemetco</p>	<p>Environmental Impact Report (EIR)</p>	<p>A Notice of Preparation/Initial Study (NOP/IS) has been released for a 32-day public review and comment period from August 31, 2018 to October 2, 2018. The comment period has been extended to 5:00 p.m. October 25, 2018 (56 days). An additional CEQA scoping meeting will be held on October 11, 2018 at Hacienda Heights Community Center, 1234 Valencia Ave., Hacienda Heights, CA 91745 from 6:00 p.m. to 9:00 p.m. and the presentation will begin at 6:30 p.m.</p>	<p>Trinity Consultants</p>

**ATTACHMENT C
ACTIVE SCAQMD LEAD AGENCY PROJECTS
THROUGH SEPTEMBER 30, 2018**

PROJECT DESCRIPTION	PROPONENT	TYPE OF DOCUMENT	STATUS	CONSULTANT
<p>Southern California Edison (SCE) is proposing to modify the air pollution control system for the Barre Peaker unit to repair current and prevent future water damage by: 1) decreasing the water-injection rate into the turbine’s combustor; 2) replacing the oxidation catalyst and increasing the overall area of catalyst beds in the selective catalytic reduction (SCR) unit; 3) replacing the ammonia injection grid to improve the deliverability of ammonia to the catalyst; and, 4) increasing the concentration of the aqueous ammonia that is delivered to the facility, stored on-site, and injected into the SCR unit from 19% to 29%. In addition, SCE is proposing to revise its SCAQMD Title V Operating Permit to allow the turbine to generate power over its full operating range, from less than one megawatt (MW) to full load (e.g., 45 MW net), while continuing to meet the emission limits in the current permit.</p>	<p>Southern California Edison</p>	<p>Addendum to the April 2007 Final Mitigated Negative Declaration for the Southern California Edison Barre Peaker Project in Stanton</p>	<p>SCAQMD staff has provided revised Draft Addendum for the consultant to review. SCAQMD staff is awaiting a response from the consultant.</p>	<p>Yorke Engineering, LLC</p>
<p>Southern California Edison (SCE) is proposing to modify the air pollution control system for the Mira Loma Peaker unit to repair current and prevent future water damage by: 1) decreasing the water-injection rate into the turbine’s combustor; 2) replacing the oxidation catalyst and increasing the overall area of catalyst beds in the Selective Catalytic Reduction (SCR) unit; 3) replacing the ammonia injection grid to improve the deliverability of ammonia to the catalyst; and, 4) increasing the concentration of the aqueous ammonia that is delivered to the facility, stored on-site, and injected into the SCR unit from 19% to 29%. In addition, SCE is proposing to revise its SCAQMD Title V Operating Permit to allow the turbine to generate power over its full operating range, from less than one megawatt (MW) to full load (e.g., 45 MW net), while continuing to meet the emission limits in the current permit.</p>	<p>Southern California Edison</p>	<p>Addendum to the April 2007 Final Mitigated Negative Declaration for the Southern California Edison Mira Loma Peaker Project in Ontario</p>	<p>SCAQMD staff has provided revised Draft Addendum for the consultant to review. SCAQMD staff is awaiting a response from the consultant.</p>	<p>Yorke Engineering, LLC</p>

[↑ Back to Agenda](#)

BOARD MEETING DATE: November 2, 2018

AGENDA NO. 18

REPORT: Rule and Control Measure Forecast

SYNOPSIS: This report highlights SCAQMD rulemaking activities and public workshops potentially scheduled for 2018 and portions of 2019.

COMMITTEE: No Committee Review

RECOMMENDED ACTION:
Receive and file.

Wayne Natri
Executive Officer

PMF:SN:AF:EG

2018 MASTER CALENDAR

The table that follows summarizes changes to the schedule since last month's Rule and Control Measure Forecast Report. A number of rule projects have been moved to 2019. The decision to delay certain rule projects at committee meetings, set hearings, or public hearings have impacted the rulemaking calendar. These delays not only affect specific rule projects, but other rule projects that are handled by the same rule team. Furthermore, the complexity of the RECLAIM transition has led to delays to allow staff additional time to work with stakeholders. The hiring effort for rule development teams will help to minimize delaying rule projects in the future. However, it takes several months to train staff on the procedures of rule writing before they are fully productive.

Symbols have been added to indicate the following:

- * This rulemaking is a potentially significant hearing.*
- + This rulemaking will reduce criteria air contaminants and assist toward attainment of ambient air quality standards.*
- # This rulemaking is part of the transition of RECLAIM to a command-and-control regulatory structure.*

2018 MASTER CALENDAR

Month	Title and Description	Type of Rulemaking
December		
1118.1*+##	<p>Control of Emissions from Non-Refinery Flares Proposed Rule 1118.1 will seek to reduce emissions from flaring at non-refinery facilities, including alternate uses of gases. The proposed rule will require use of flares that meet a specific emission standard at sources such as landfills, wastewater treatment plants, and oil and gas production facilities. <i>Michael Krause 909.396.2706 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	AQMP
1146	<p>Emissions of Oxides of Nitrogen from Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters</p>	AQMP
1146.1	<p>Emissions of Oxides of Nitrogen from Small Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters</p>	
1146.2*+##	<p>Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters Amendments to Rules 1146, 1146.1, and 1146.2 will incorporate requirements for facilities that are in RECLAIM that are required to meet BARCT emission control levels.</p>	
1100*+##	<p>Implementation Schedule for NOx Facilities Rule 1100 will establish the implementation schedule for specific NOx RECLAIM facilities that are transitioning to command-and-control. <i>Tracy Goss 909.396.3106 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	

**RULES MOVED FROM 2018 TO 2019
MASTER CALENDAR**

2019	Title and Description	Type of Rulemaking
Reg. IX Reg. X	<p>Standards of Performance for New Stationary Sources (NSPS) National Emission Standards for Hazardous Air Pollutants (NESHAPS)</p> <p>Amendments to Regulations IX and X are periodically made to incorporate by reference new or amended federal standards that have been enacted by U.S. EPA for stationary sources. Regulations IX and X provide stationary sources with a single point of reference for determining which federal and local requirements apply to their specific operations.</p> <p><i>Carol Gomez 909.396.3264 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Other
1109.1*+##	<p>Refinery Equipment</p> <p>Proposed Rule 1109.1 will establish requirements for refineries that are transitioning from RECLAIM to command-and-control.</p> <p><i>Michael Krause 909.396.2706 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	AQMP
1110.2*+## 1100*+##	<p>Emissions from Stationary Internal Combustion Engines</p> <p>Rule 1110.2 will be amended to incorporate provisions for facilities that are transitioning from NOx RECLAIM to command-and-control.</p> <p>Implementation Schedule for NOx Facilities</p> <p>Rule 1100 will establish the implementation schedule for specific NOx RECLAIM facilities that are transitioning to command-and-control.</p> <p><i>Tracy Goss 909.396.3106 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	AQMP
1134*+## 1100*+##	<p>Emissions of Oxides of Nitrogen from Stationary Gas Turbines</p> <p>Proposed Amended Rule 1134 will update the emission standard to incorporate Best Available Retrofit Control Technology and incorporate provisions for facilities that are transitioning from NOx RECLAIM to command-and-control.</p> <p>Implementation Schedule for NOx Facilities</p> <p>Rule 1100 will establish the implementation schedule for specific NOx RECLAIM facilities that are transitioning to command-and-control.</p> <p><i>Tracy Goss 909.396.3106 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	AQMP
Reg. XIII*#	<p>New Source Review</p> <p>Amendments to Regulation XIII are needed to address New Source Review provisions for facilities that exit RECLAIM.</p> <p><i>Tracy Goss 909.396.3106 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Other

**RULES MOVED FROM 2018 TO 2019
MASTER CALENDAR**

2019 (Continued)	Title and Description	Type of Rulemaking
1403	<p>Asbestos Emissions from Demolition/Renovation Activities Amendments to Rule 1403 will include specific requirements when conducting asbestos-emitting demolition/renovation activities at schools, daycare centers, and possibly establishments that have sensitive populations. Amendments may include other provisions to improve the implementation of the rule. <i>David De Boer 909.396.2329 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Toxics
1407*	<p>Control of Emissions of Arsenic, Cadmium and Nickel from Non-Chromium Alloy Melting Operations Proposed Rule 1407 will establish additional requirements to minimize toxic air contaminant emissions from metal operations. <i>Michael Morris 909.396.3282 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Toxics
1435*	<p>Control of Emissions from Metal Heat Treating Processes Proposed Rule 1435 would establish requirements to reduce hexavalent chromium emissions from heat treating processes. <i>Jillian Wong 909.396.3176 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Toxics
1410*	<p>Hydrogen Fluoride Use at Refineries Proposed Rule 1410 will establish requirements for use of hydrogen fluoride at refineries. <i>Michael Krause 909.396.2706 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Toxics
1480*	<p>Air Toxic Metals Monitoring Proposed Rule 1480 will establish provisions for when ambient monitoring is required and the toxic air contaminants that will be monitored. <i>Jillian Wong 909.396.3176 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Toxics
Reg. XVI	<p>Mobile Source Offset Programs Amendments to various Regulation XVI rules will be proposed to provide greater opportunity to reduce mobile source emissions and to obtain credit in the State Implementation Plan for these reductions where possible, including addressing the recent U.S. EPA proposed disapproval of Rule 1610. <i>Zorik Pirveysian 909.396.2431 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Other
2202	<p>On-Road Motor Vehicle Mitigation Options Proposed amendments to Rule 2202 would enhance emission reductions obtained from the Employee Commute Reduction Program (ECRP) rule option. <i>Carol Gomez 909.396.3264 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Other

**2018 MASTER CALENDAR
2018 To-Be-Determined**

To-Be-Determined	Title and Description	Type of Rulemaking
102	<p>Definition of Terms Staff may propose amendments to Rule 102 to add or revise definitions in order to support amendments to other Regulation XI rules. <i>David De Boer 909.396.2329 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Other
113*#	<p>Monitoring, Reporting, and Recordkeeping (MRR) Requirements for NOx and SOx Sources Proposed Rule 113 will establish MRR requirements for facilities exiting RECLAIM and transitioning to a command-and-control regulatory structure. <i>Tracy Goss 909.396.3106 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Other
120	<p>Credible Evidence Rule Proposed Rule 120 will allow any credible evidence to be used for the purpose of establishing that a person has violated or is in violation of any plan, order, permit, rule, regulation, or law. <i>Michael Krause 909.396.2706 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Other
218	<p>Continuous Emission Monitoring Amendments to Rule 218 may be needed for facilities exiting RECLAIM and transitioning to a command-and-control regulatory structure. <i>Tracy Goss 909.396.3106 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Other
218.1	<p>Continuous Emission Monitoring Performance Specifications Amendments to Rule 218.1 may be needed for facilities exiting RECLAIM and transitioning to a command-and-control regulatory structure. <i>Tracy Goss 909.396.3106 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Other
223 ⁺	<p>Emission Reduction Permits for Large Confined Animal Facilities Proposed Amended Rule 223 will seek additional emission reductions from large confined animal facilities by lowering the applicability threshold. <i>Tracy Goss 909.396.3106 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	AQMP
224 ⁺	<p>Incentives for Super-Compliant Technologies Proposed Rule 224 will outline strategies and requirements to incentivize the development, establishment and use of super-compliant technologies. It may be considered as a part of Rule 219 amendments or proposed as a separate incentive rule. <i>Zorik Pirveysian 909.396.3421 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Other

2018 MASTER CALENDAR
2018 To-Be-Determined (continued)

To-Be-Determined	Title and Description	Type of Rulemaking
416*	<p>Odors from Kitchen Grease Processing Proposed Rule 416 will reduce ambient odors created during kitchen grease processing operations. The proposed rule will establish best management practices, and examine enclosure requirements for wastewater treatment operations and filter cake storage. The proposed rule may also contain requirements for an Odor Mitigation Plan.</p> <p><i>Tracy Goss 909.396.3106 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Other
429*+##	<p>Start-Up and Shutdown Exemption Provisions for Oxides of Nitrogen It may be necessary to amend Rule 429 to address start-up/shutdown provisions related to the transition of NOx RECLAIM to a command-and-control regulatory program and if U.S. EPA requires updates to such provisions.</p> <p><i>Tracy Goss 909.396.3106 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Other
430*	<p>Breakdown Provisions This rule will be amended or replaced to address specific issues raised by U.S. EPA regarding start-ups or shutdowns associated with breakdowns.</p> <p><i>Tracy Goss 909.396.3106 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	AQMP
1106 1106.1*+	<p>Marine Coating Operations Pleasure Craft Coating Operations Rule 1106.1 is proposed to be rescinded; Rule 1106 would subsume the requirements of Rule 1106.1, revise VOC content limits for several categories in order to align limits with U.S. EPA Control Techniques Guidelines and other California air districts, and add new categories for several categories.</p> <p><i>Michael Krause 909.396.2706 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Other
1107+	<p>Coating of Metal Parts and Products Potential amendments to Rule 1107 would further reduce VOC emissions and improve rule clarity and enforceability.</p> <p><i>Michael Krause 909.396.2706 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	AQMP
1109*+##	<p>Emissions of Oxides of Nitrogen from Boilers and Process Heaters in Petroleum Refineries Amendments to Rule 1109 may be needed to establish BARCT emission limits for refineries that are exiting RECLAIM and subject to command-and-control rules.</p> <p><i>Tracy Goss 909.396.3106 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	AQMP

2018 MASTER CALENDAR
2018 To-Be-Determined (continued)

To-Be-Determined	Title and Description	Type of Rulemaking
1111.1 ⁺	<p>Reduction of NOx Emissions from Natural Gas Fired Commercial Furnaces Proposed Rule 1111.1 will establish equipment-specific NOx emission limits and other requirements for the operation of commercial space heaters. <i>Tracy Goss 909.396.3106 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Other
1113 ⁺	<p>Architectural Coatings Pursuant to guidance from the Stationary Source Committee, staff will amend to remove the tBAC exemption and is evaluating the impact from removing pCBtF as a VOC exempt compound. <i>Michael Krause 909.396.2706 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Other
1117* ^{+#}	<p>Glass Melting Furnaces Proposed amendments will control NOx emissions from glass melting furnaces. <i>Tracy Goss 909.396.3106 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	AQMP
1123* ⁺	<p>Refinery Process Turnarounds Proposed amendments will establish procedures that better quantify emission impacts from start-up, shutdown or turnaround activities. <i>Tracy Goss 909.396.3106 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	AQMP
1136* ⁺	<p>Wood Products Coatings Amendments may be proposed to existing rule limits and other provisions. <i>David De Boer 909.396.2329 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	AQMP
1142*	<p>Marine Tank Vessel Operations Proposed revisions to Rule 1142 would address VOC emissions from marine tank vessel operations and provide clarifications. <i>David De Boer 909.396.2329 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Other
1147.1* ^{+#}	<p>Large Miscellaneous Combustion Rule 1147.1 will include large miscellaneous combustion sources currently at RECLAIM facilities. <i>Tracy Goss 909.396.3106 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Other
1147.2* ^{+#}	<p>Metal Melting and Heat Treating Furnaces Proposed Rule 1147.2 will reduce NOx emissions from metal melting and heat treating furnaces. <i>Tracy Goss 909.396.3106 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	AQMP
1147.3* ^{+#}	<p>Emission Reductions for Equipment at Aggregate Facilities Proposed Rule 1147.3 will reduce NOx emissions from aggregate operations. <i>Tracy Goss 909.396.3106 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	AQMP

2018 MASTER CALENDAR
2018 To-Be-Determined (continued)

To-Be-Determined	Title and Description	Type of Rulemaking
1148.1 1148.2	<p>Oil and Gas Production Wells Notification and Reporting Requirements for Oil and Gas Wells and Chemical Suppliers</p> <p>Amendments to Rule 1148.2 may be needed to address community notification procedures, the inclusion of water injection wells, and potentially other measures based on an evaluation of information collected since the last rule adoption.</p> <p><i>Jillian Wong 909.396.3176 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Other
1148.3*	<p>Requirements for Natural Gas Underground Storage Facilities</p> <p>Proposed Rule 1148.3 will establish requirements to address public nuisance and VOC emissions from underground natural gas storage facilities.</p> <p><i>Jillian Wong 909.396.3176 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Other
1150.1	<p>Control of Gaseous Emissions from Municipal Solid Waste Landfills</p> <p>Proposed amendments will address U.S. EPA revisions to the New Source Performance Standards for Municipal Solid Waste Landfills and Existing Guidelines and Compliance Timelines for Municipal Solid Waste Landfills, as well as CARB GHG requirements.</p> <p><i>Tracy Goss 909.396.3106 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Other
1151**	<p>Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations</p> <p>Pursuant to guidance from the Stationary Source Committee, staff will amend to remove the tBAC exemption and is evaluating the impact from removing pCBtF as a VOC exempt compound.</p> <p><i>Michael Krause 909.396.2706 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Other
1153.1**	<p>Emissions of Oxides of Nitrogen from Commercial Food Ovens</p> <p>Rule 1153.1 was adopted in November 2014 and established NOx emission limits for various types of existing commercial food ovens on a specified compliance schedule. Amendments may be necessary to address applicability and technological feasibility of low-NOx burner technologies for new commercial food ovens.</p> <p><i>Tracy Goss 909.396.3106 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Other
1159.1**#	<p>Nitric Acid Units - Oxides of Nitrogen</p> <p>Proposed Rule 1159.1 will address NOx emissions from processes using nitric acid and is needed as part of the transition of RECLAIM to command-and-control.</p> <p><i>David De Boer 909.396.2329 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	AQMP

**2018 MASTER CALENDAR
2018 To-Be-Determined (continued)**

To-Be-Determined	Title and Description	Type of Rulemaking
1173 ⁺	<p>Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants Proposed revisions to Rule 1173 are being considered based on recent U.S. EPA regulations and CARB oil and gas regulations. <i>Michael Krause 909.396.2706 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Other
1177 ⁺	<p>Liquefied Petroleum Gas Transfer and Dispensing Potential amendments may be proposed to include additional sources of emissions from the dispensing and transfer of LPG. <i>Michael Krause 909.396.2706 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	AQMP
1188 ⁺	<p>VOC Reductions from Vacuum Trucks The proposed rule will establish VOC emission standards and other requirements associated with the operation of vacuum trucks not covered by Rule 1149 – Storage Tank and Pipeline Cleaning and Degassing. <i>David De Boer 909.396.2329 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	AQMP
1190, 1191, 1192, 1193, 1194, 1195, 1196, & 1186.1* ⁺	<p>Fleet Vehicle Requirements Amendments to fleet rules may be necessary to improve rule implementation. In addition, the current fleet rules may be expanded to achieve additional air quality and air toxic emission reductions. <i>Zorik Pirveysian 909.396.2431 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Other
1304.2* 1304.3*	<p>California Public Utilities Commission Regulated Electrical Local Publicly Owned Electrical Utility Fee for Use of SO_x, PM₁₀ and NO_x Offsets Local Publicly Owned Electrical Generating Facility Fee for Use of SO_x, PM₁₀ and NO_x Offsets Proposed Rules 1304.2 and 1304.3 would allow new greenfield facilities and additions to existing electricity generating facilities (EGFs) conditional access to SCAQMD internal offset accounts for a fee, for subsequent funding of qualifying improvement projects consistent with the AQMP. <i>Tracy Goss 909.396.3106 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Other Other
1415 1415.1	<p>Reduction of Refrigerant Emissions from Stationary Air Conditioning Systems Reduction of Refrigerant Emissions from Stationary Refrigeration Systems Amendments will align with proposed CARB Refrigerant Management Program and U.S. EPA’s Significant New Alternatives Policy Rule provisions relative to prohibitions on specific hydrofluorocarbons (HFCs). <i>David De Boer 909.396.2329 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Other

2018 MASTER CALENDAR
2018 To-Be-Determined (continued)

To-Be-Determined	Title and Description	Type of Rulemaking
1426*	<p>Emissions from Metal Finishing Operations Proposed amendments to Rule 1426 will establish requirements to reduce nickel, cadmium and other air toxics from plating operations. <i>Jillian Wong 909.396.3176 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Toxics
1430	<p>Control of Emissions from Metal Grinding Operations at Metal Forging Facilities Proposed amendments to Rule 1430 may be needed related to reducing emissions from metal forging operations. <i>Jillian Wong 909.396.3176 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Toxics
1445*	<p>Control of Toxic Emissions from Laser Arc Cutting Proposed Rule 1445 will establish requirements to reduce toxic metal particulate emissions from laser arc cutting. <i>David De Boer 909.396.2329 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Toxics
1450**	<p>Control of Methylene Chloride Emissions The proposed rule would reduce exposure to methylene chloride from furniture stripping, remove potential regulatory loopholes, achieve emission reductions where possible and cost effective, include reporting requirements, and improve consistency with other SCAQMD VOC rules. <i>David De Boer 909.396.2329 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Toxics
1469.1*	<p>Spraying Operations Using Coatings Containing Chromium Proposed Amended Rule 1469.1 would establish additional requirements for facilities that are conducting spraying using chromium coatings to further reduce hexavalent chromium emissions. <i>Jillian Wong 909.396.3176 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Other
1470*	<p>Requirement for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines at Sensitive Receptors The proposal would address new and existing small (≤ 50 brake horsepower) diesel engines located near sensitive receptors. Staff is also considering amendments to minimize use of stationary diesel back-up engines that may include use of alternative power sources that are less polluting. <i>David De Boer 909.396.2329 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Toxics
Reg. XVII	<p>Prevention of Significant Deterioration (PSD) Proposed amendments to Regulation XVII will align the SCAQMD's Prevention of Significant Deterioration program with federal requirements. <i>David De Boer 909.396.2329 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Other
1902	<p>Transportation Conformity Amendments to Rule 1902 may be necessary to align the rule with current U.S. EPA requirements. <i>Ian MacMillan 909.396.3244 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Other

2018 MASTER CALENDAR
2018 To-Be-Determined (continued)

To-Be-Determined	Title and Description	Type of Rulemaking
1905	<p>Pollution Controls for Automotive Tunnel Vents This proposed rule would address emissions from proposed roadway tunnel projects that could have air quality impacts. <i>Ian MacMillan 909.396.3244 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Other
Reg. XX*+##	<p>RECLAIM Amendments to rules within Regulation XX will be needed as facilities transition from RECLAIM to a command-and-control regulatory structure. <i>Tracy Goss 909.396.3106 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	AQMP
Reg. XXIII	<p>Facility Based Mobile Sources Regulation XXIII would contain rules related to reducing emissions from mobile sources that visit certain types of facilities. Facility types could include commercial airports, marine ports, rail yards, warehouses, and new and development projects. Regulation XXIII may include other sources as identified in the 2016 AQMP. <i>Ian MacMillan 909.396.3244 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	AQMP
Reg. XXV	<p>Intercredit Trading Regulation XXV will contain rules to allow generation of criteria pollutant Mobile Source Emission Reduction Credits (MSERCs) from various on-road and off-road sources, such as on-road heavy-duty trucks, off-road equipment, locomotives, and marine vessels. Credits will be generated by retrofitting existing engines or replacing the engines with new lower-emitting or zero-emission engines. The 2016 AQMP includes two measures that seek to accelerate early deployment of near-zero and zero emission on-road heavy-duty trucks and off-road equipment, through generation of MSERCs that could be used for purposes of recognizing mobile source emission reductions at facilities covered in the AQMP Facility-Based Measures. <i>Zorik Pirveysian 909.396.2431 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	AQMP
Reg. XXVII	<p>Climate Change Changes may be needed to Regulation XXVII to add or update protocols for GHG reductions, and other changes. <i>Zorik Pirveysian 909.396.2431 CEQA: Michael Krause 909.396.2706 and Socio: Jillian Wong 909.396.3176</i></p>	Other

2018 MASTER CALENDAR
2018 To-Be-Determined (continued)

To-Be-Determined	Title and Description	Type of Rulemaking
Reg. II, IV, XI, XIV, XXX and XXXV, XXIV*+ #	<p>Various rule amendments may be needed to meet the requirements of state and federal laws, implement OEHHA’s 2015 revised risk assessment guidance, address variance issues/ technology-forcing limits, to abate a substantial endangerment to public health or welfare, address odor nuisance issues, air toxics, or to seek additional reductions to meet the SIP short-term measure commitment. The associated rule development or amendments include, but are not limited to, SCAQMD existing rules, and new or amended rules to implement the 2012 or 2016 AQMP measures. This includes measures in the 2010 Clean Communities Plan (CCP) or 2016 AQMP to reduce toxic air contaminants or reduce exposure to air toxics from stationary, mobile, and area sources. Rule amendments may include updates to provide consistency with CARB Statewide Air Toxic Control Measures or U.S. EPA’s National Emission Standards for Hazardous Air Pollutants. Rule amendments, proposed new source-specific, or industry-specific rules within Regulation XI may be needed to meet the requirements of AB 617 and the 2016 AQMP commitment to transition the RECLAIM program to a command-and-control regulatory structure. Amendments to Regulation XIV may be needed for implementation of AB 617.</p>	Other/AQMP

BOARD MEETING DATE: November 2, 2018

AGENDA NO. 19

REPORT: Status Report on Major Ongoing and Upcoming Projects for Information Management

SYNOPSIS: Information Management is responsible for data systems management services in support of all SCAQMD operations. This action is to provide the monthly status report on major automation contracts and planned projects.

COMMITTEE: Administrative, October 12, 2018, Reviewed

RECOMMENDED ACTION:
Receive and file.

Wayne Nastri
Executive Officer

RMM:MAH:OSM:agg

Background

Information Management (IM) provides a wide range of information systems and services in support of all SCAQMD operations. IM's primary goal is to provide automated tools and systems to implement Board-approved rules and regulations, and to improve internal efficiencies. The annual Budget specifies projects planned during the fiscal year to develop, acquire, enhance, or maintain mission-critical information systems.

Summary of Report

The attached report identifies each of the major projects/contracts or purchases that are ongoing or expected to be initiated within the next six months. Information provided for each project includes a brief project description and the schedule associated with known major milestones (issue RFP/RFQ, execute contract, etc.).

Attachment

Information Management Status Report on Major Ongoing and Upcoming Projects During the Next Six Months

ATTACHMENT
November 2, 2018 Board Meeting
Information Management Status Report on Major Ongoing and
Upcoming Projects During the Next Six Months

Project	Brief Description	Budget	Completed Actions	Upcoming Milestones
Implementation of Enterprise Geographic Information System (EGIS)	Continue to support accomplishment of the agency's mission through the effective and cost-efficient implementation of EGIS and related technologies		<ul style="list-style-type: none"> • Purchased ESRI extensions for OnBase 	<ul style="list-style-type: none"> • Complete the six prioritized EGIS projects: <ul style="list-style-type: none"> ○ GIS Data Development ○ Portal / Mobile Development ○ OnBase Expansion and GIS Integration ○ CLASS GIS Integration ○ One-click Site Report ○ System Documentation
Telecommunications Services	Select vendor(s) to provide local, long distance, telemetry, internet, cellular services, and phone system maintenance for a three-year period	\$750,000	<ul style="list-style-type: none"> • Released RFP October 5, 2018 	<ul style="list-style-type: none"> • Request Board Approval January 4, 2019 • Execute contract(s) January 31, 2019
CLASS Database Software Licensing and Support	Purchase Actian Ingres database software licensing, support and maintenance for the CLASS system for a one-year period (November 30, 2018 through November 29, 2019)	\$225,341	<ul style="list-style-type: none"> • September 2018 board action approved funding 	<ul style="list-style-type: none"> • Execute contract November 30, 2018

Project	Brief Description	Budget	Completed Actions	Upcoming Milestones
Office 365 Implementation	Acquire and implement Office 365 for SCAQMD staff	\$350,000	<ul style="list-style-type: none"> • Pre-assessment evaluation and planning completed • October 5, 2018 board action approved funding 	<ul style="list-style-type: none"> • Acquire Office 365 licenses • Develop implementation and migration plan • Implement Office 365 email (Exchange) and migrate all users • Implement Office 365 file storage (OneDrive for Business) and migrate users • Implement Office 365 internal website (SharePoint) and migrate existing content
Permitting System Automation Phase 1	New Web application to automate the filing of all permit applications with immediate processing and issuance of permits for specific application types: Dry Cleaners, Gas Stations and Automotive Spray Booths	\$694,705	<ul style="list-style-type: none"> • Phase 1 Automated 400A form filing, application processing, and online permit generation for Dry Cleaner module deployed to production • Facility ID Creation Module deployed to production • Phase 1.1 Automated 400A form filing, application processing, and online permit generation for Automotive Spray Booth and Gas Station Modules deployed to production 	<ul style="list-style-type: none"> • Upgraded GIS Map integration work • Phase 1.1 project outreach support

Project	Brief Description	Budget	Completed Actions	Upcoming Milestones
Permitting System Automation Phase 2	Enhanced Web application to automate filing process of Permit Applications, Rule 222 equipment, registration process for IC Engines; implement electronic permit folder and workflow for internal SCAQMD users	\$525,000	<ul style="list-style-type: none"> • December 2017 board action approved initial Phase 2 funding • May 2018 Phase 2 project startup and detail planning completed • Business process model approved • Development of Negative Air Machines filing process completed • October 2018 board action approved remaining Phase 2 funding 	<ul style="list-style-type: none"> • Wireframe and user stories development for Boilers, Heaters, Ovens, and Baghouses • Code development for IC Engines form filing and CharBroilers, Cooling Towers, Small Boilers, and Oil Wells processing
Information Technology Review Implementation	Complete Board requested Information Technology review and initiate work on implementation of key recommendations	\$75,000	<ul style="list-style-type: none"> • Initiated Implementation Planning and Resource Requirements for key recommendations • Conducted recruitment process to fill Systems & Programming Supervisor position • Scheduled and completed Microsoft Project Plan training for all IM Managers, Supervisors and Secretaries • Established Information Technology Steering Committee, members and charter • Configured and deployed Project Management software for IM team 	<ul style="list-style-type: none"> • Office 365 deployment planning

Project	Brief Description	Budget	Completed Actions	Upcoming Milestones
Permit Application Status and Dashboard Statistics	New Web application to allow engineers to update intermediate status of applications; create dashboard display of status summary with link to FIND for external user review	\$100,000	<ul style="list-style-type: none"> • December 2017 board action approved funding • April 2018 project startup and detail planning completed • June 2018 wireframe and user story approved for Release 1 • User story and wireframe approved for application search module 	<ul style="list-style-type: none"> • Code development for Release 1 • Code development for application search module • User acceptance testing for data capture module
Agenda Tracking System Replacement	Replace aging custom agenda tracking system with state-of-the-art, cost-effective Enterprise Content Management (ECM) system, which is fully integrated with OnBase, SCAQMD's agency-wide ECM system	\$86,600	<ul style="list-style-type: none"> • Released RFP December 4, 2015 • Awarded contract April 1, 2016 • Continued parallel testing • Conducted survey of stakeholder satisfaction • As a result of the survey responses, the decision was made to develop a custom user interface for the application 	<ul style="list-style-type: none"> • Revise project scope to include custom user interface • Develop plan and schedule for revised scope
Replace Your Ride (RZR)	New Web application to allow residents to apply for incentives to purchase newer, less polluting vehicles	\$301,820	<ul style="list-style-type: none"> • Phase 2 Fund Allocation, Administration and Management Reporting modules deployed and in production • Final Phase 2 user requested enhancements: VIN Number, Case Manager, Auto e-mail and document library updates deployed to production • Phase 3 Data Migration development work completed 	<ul style="list-style-type: none"> • Phase 3 user approval for production • Phase 4 collaboration with air districts for possible statewide RZR implementation • Implementation of Electric Vehicle Service Equipment and alternative mode of transportation in the RZR application

Project	Brief Description	Budget	Completed Actions	Upcoming Milestones
SCAQMD Mobile Application for Apple and Android phones	New mobile application to provide air quality and SCAQMD notification and event information	\$126,010	<ul style="list-style-type: none"> • July Board action approved funding • Wireframe approved • Detail design and unit test case development completed • IM Internal Acceptance Testing completed 	<ul style="list-style-type: none"> • General Beta release
FIND System Replacement	Update and replace Facility Information Detail (FIND) application	\$148,150	<ul style="list-style-type: none"> • Task order issued, evaluated and awarded • Detail project planning completed • Wireframe approved • Development completed • Automated Testing completed 	<ul style="list-style-type: none"> • Acceptance testing
Legal Division New System Development	Develop new web-based case management system for Legal Division to replace existing JWorks System	\$500,000	<ul style="list-style-type: none"> • Task order issued, evaluated and awarded • Project initiated and project charter finalized • Business Process Model of current tasks and workflows developed 	<ul style="list-style-type: none"> • Business Process Model review and approval • Determine requirements for improvements to Business Process
Document Conversion Services	Document Conversion Services to convert paper documents stored at SCAQMD facilities to electronic storage in OnBase	\$83,000	<ul style="list-style-type: none"> • Released RFQ October 5, 2018 	<ul style="list-style-type: none"> • Approve qualified vendors January 4, 2019

Shaded Projects – Projects completed and will be removed from this list on subsequent reports

Completed Projects	
Project	Date Completed
CLASS Database Software Licensing and Support	November 30, 2017
Website & Evaluation Improvements	January 6, 2018
Information Technology Review	January 31, 2018
Prequalify Vendor List for PCs, Network Hardware, etc.	February 3, 2018
Renewal of HP Server Maintenance & Support	April 6, 2018
Implementation of Enterprise Geographic Information System (EGIS)	May 30, 2018
Fiber Cable Network Infrastructure Upgrade	May 30, 2018
Air Quality Index Rewrite and Migration	June 29, 2018

BOARD MEETING DATE: November 2, 2018

AGENDA NO. 21

REPORT: Administrative Committee

SYNOPSIS: The Administrative Committee held a meeting on Friday, October 12, 2018. The following is a summary of the meeting.

RECOMMENDED ACTION:
Receive and file.

Dr. Clark E. Parker, Sr., Acting Chair
Administrative Committee

nv

Committee Members

Present: Dr. Clark E. Parker, Sr./Acting Chair (videoconference)
Mayor Ben Benoit/Vice Chair (videoconference)
Mayor Pro Tem Judith Mitchell (videoconference).

Absent: Dr. William A. Burke/Chair.

Call to Order

Dr. Parker called the meeting to order at 10:04 a.m.

DISCUSSION ITEMS:

- 1. Board Members' Concerns:** None to report.
- 2. Chairman's Report of Approved Travel:** As noted on the travel report, Dr. Parker will attend the California Fuel Cell Partnership (CaFCP) Executive Board meeting regarding air quality issues in Sacramento on October 17, 2018. Mayor Pro Tem Mitchell will attend the monthly CARB Board meeting as the SCAQMD Board representative in Sacramento on October 25-26, 2018.
- 3. Report of Approved Out-of-Country Travel:** None to report.
- 4. Review November 2, 2018 Governing Board Agenda:** Dr. Parker inquired if there are any comments relative to the Refinery Committee. Executive Officer Wayne Nastri responded that the Chairman has the option of adding an item to

the November agenda to discuss the Refinery Committee meeting that was held in Wilmington. Mr. Nastri suggested an internal meeting to discuss the request.

5. **Approval of Compensation for Board Member Assistant(s)/Consultant(s):** Supervisor Perez has selected an additional Board Consultant, Guillermo Gonzalez.

Moved by Benoit; seconded by Mitchell, unanimously approved.

Ayes: Benoit, Mitchell, Parker
Noes: None
Absent: Burke

6. **Status Report on Major Ongoing and Upcoming Projects for Information Management:** Assistant Deputy Executive Officer/Information Management Ron Moskowitz reported that the internet bandwidth has been upgraded in preparation for the Office 365 migration and other Cloud services which will significantly improve the overall internet speed at the SCAQMD. The mobile application is being beta tested for the iPhone, iPad and Apple watch. Mayor Benoit commented that the beta application is working very well, and inquired whether there will be a map of all the permitted facilities on the app. Mr. Moskowitz responded the map will be included in either Phase 2 or 3 implementation. Dr. Parker asked whether every permit will be included or only certain types of permits. Mr. Moskowitz responded we have not yet determined whether all permits will be included. Dr. Parker inquired when this will be completed. Mr. Moskowitz responded that it will be available in the Apple Store in approximately three weeks.

ACTION ITEMS:

7. **Establish Board Meeting Schedule for Calendar Year 2019:** Mr. Nastri reported that the proposed schedule includes all Board meetings to be held on the first Friday of the month, with the exception of the July meeting which will be held on the second Friday of the month (July 12) to accommodate the Fourth of July holiday.

Moved by Mitchell; seconded by Benoit, unanimously approved.

Ayes: Benoit, Mitchell, Parker
Noes: None
Absent: Burke

8. **Issue RFP for Engineering Consultant to Assess BARCT for Proposed Rule 1109.1 – NO_x Emission Reductions for Refinery Equipment:** Mr. Nastri reported that staff has recommended that this item be pulled to enable more time for preparation.

9. **Issue RFP for Health Study of Impacts of Well Rupture at Aliso Canyon:** Health Effects Officer Dr. Jo Kay Ghosh reported that this item is to issue an RFP in regards to the health study at the Aliso Canyon gas leak which was funded by the settlement with SoCalGas. Staff has been working with the Health Study Technical Advisory Group which is comprised of scientists and other representatives from various entities, such as health experts, university faculty members, as well as two community members that were selected by the Porter Ranch Neighborhood Council.

Dr. Parker asked when the study will be completed. Dr. Ghosh responded that the length of the study is to be determined and it is anticipated that this portion of the study will take approximately one to two years. Dr. Parker inquired if there will be any interim reports. Dr. Ghosh responded that there will be periodic reports, either quarterly or every six months, and the contractor will be required to provide periodic interim reports through the Health Study Technical Advisory Group to provide the community with updates on progress of the project. Dr. Parker inquired if there will be updates provided to the Board. Dr. Ghosh responded yes. Mr. Nastri added that during the length of the study, a report should be provided bi-annually and then a final report at the end of the study. Dr. Parker concurred as it will keep the Board apprised of the progress. Mayor Pro Tem Mitchell asked how the SCAQMD study and the L.A. County study will be coordinated, as far as reporting back to the SCAQMD on the progress of the L.A. County study. Dr. Ghosh responded that since the SCAQMD study will be launched first, the Advisory Group has decided that the best approach is to tackle the work that lays the critical foundation for any work that has been done, including the work that will be done by L.A. County.

Motion made by Mayor Pro Tem Mitchell to receive updates on the progress made and results of L.A. County's health study. Dr. Parker added that this motion should also include the Board receiving updates every six months on the SCAQMD study and L.A. County's health study.

Moved by Mitchell; seconded by Benoit, unanimously approved.

Ayes: Benoit, Mitchell, Parker
Noes: None
Absent: Burke

- 10. Amend Contracts for Legislative Representation in Sacramento, California:** Deputy Executive Officer/Legislative, Public Affairs & Media Derrick Alatorre reported that this item is to extend the contracts for one year with the Quintana Cruz Company; Joe A. Gonsalves & Son; and California Advisors, LLC. This is the first of two one-year extensions that they are eligible for. Mayor Pro Tem Mitchell commented that she has been very satisfied with work of the consultants in Sacramento.

Moved by Benoit; seconded by Mitchell, unanimously approved.

Ayes: Benoit, Mitchell, Parker
Noes: None
Absent: Burke

WRITTEN REPORT:

- 11. Local Government & Small Business Assistance Advisory Group Minutes for the July 13, 2018 Meeting:** Mr. Alatorre reported that this item is a written report.

OTHER MATTERS:

12. Other Business

Mayor Benoit asked if there has been any follow-up on the AB 617 community meetings regarding comments from business groups that wanted to join the committee meetings. Mr. Nastri responded that businesses were advised to apply for committee membership, and that they will have the ability to provide input whether or not they are selected for the steering committee. Regarding national membership or local community members, CARB's guidance is focused on the local aspect of the AB 617 process so the majority of the steering committee has to be comprised of community residents. We also need to have a number of representatives that include local planning agencies, as well as local elected officials and local health officials. The size of all 10 steering committees in the state will vary amongst the areas. It is believed that to be effective membership size should be 10 to 30. Mayor Pro Tem Mitchell commented that the CARB Board was specific in wanting a business presence on the steering committees, but it has to be a business that is within the community that is designated as an AB 617 community. Dr. Parker inquired if there will there be public comments after each AB 617 meeting. Mr. Nastri responded yes, as it is the intent to improve communication amongst all parties.

13. Public Comment

There were no public comments.

14. Next Meeting Date

The next regular Administrative Committee meeting is scheduled for November 9, 2018 at 10:00 a.m.

Adjournment

The meeting adjourned at 10:33 a.m.

Attachment

Local Government & Small Business Assistance Advisory Group Minutes for the July 13, 2018 Meeting



South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

LOCAL GOVERNMENT & SMALL BUSINESS ASSISTANCE ADVISORY GROUP FRIDAY, JULY 13, 2018 MEETING MINUTES

MEMBERS PRESENT:

Ben Benoit, Mayor Pro Tem, City of Wildomar and LGSBA Chairman
Felipe Aguirre
Paul Avila, P.B.A. & Associates
Geoffrey Blake, Metal Finishers of Southern California
LaVaughn Daniel, DancoEN
Bill LaMarr, California Small Business Alliance
Rita Loof, RadTech International
Eddie Marquez, Paramount Petroleum
David Rothbart, Los Angeles County Sanitation District

MEMBERS ABSENT:

Dr. Clark E. Parker, Sr., Senate Rules Committee Appointee
Janice Rutherford, Supervisor, Second District, San Bernardino County
Rachelle Arizmendi, Mayor Pro Tempore, City of Sierra Madre
Todd Campbell, Clean Energy
John DeWitt, JE DeWitt, Inc.
Cynthia Moran, Council Member, City of Chino Hills

OTHERS PRESENT:

Andrew Silva, San Bernardino County Administrative Office

SCAQMD STAFF:

Jill Whynot, Chief Operating Officer
Derrick Alatorre, Deputy Executive Officer
Jason Low, Ph.D., Assistant Deputy Executive Officer
Sujata Jain, Assistant Deputy Executive Officer
Nancy Feldman, Principal Deputy District Counsel
Naveen Berry, Planning & Rules Manager
Philip Crabbe, III, Community Relations Manager
Jo Kay Ghosh, Ph.D., Health Effects Officer
Payam Pakbin, Ph.D., Program Supervisor
Lisa Mirisola, Program Supervisor
De Groeneveld, Sr. Information Technology Specialist
Elaine-Joy Hills, AQ Inspector II
Stacy Garcia, Secretary
Andre Yeung, Student Intern

Agenda Item #1 - Call to Order/Opening Remarks

Chair Ben Benoit called the meeting to order at 11:32 a.m.

Agenda Item #2 – Approval of June 8, 2018 Meeting Minutes/Review of Follow-Up/Action Items

Chair Benoit called for approval of the June 8, 2018 meeting minutes. The minutes were approved unanimously.

Agenda Item #3 - Follow Up/Action Items

Mr. Derrick Alatorre indicated that one action item arose out of the June 8, 2018 meeting, which was Mr. David Rothbart's question about the remaining Emission Reduction Credits (ERCs) at closed facilities. SCAQMD's Engineering & Permitting will provide a presentation in the future to address Mr. Rothbart's question.

Agenda Item #4 - Update on Multiple Air Toxics Exposure Study (MATES V)

Dr. Payam Pakbin presented an update on MATES V.

Ms. Rita Loof asked if the decline in diesel emissions reflects the new guidelines. Dr. Pakbin responded that the MATES III study was reviewed and the new guidelines were used to recalculate the risk estimates.

Mr. Bill LaMarr requested clarification of the benefits gained and calculations. Dr. Jo Kay Ghosh said that it would not matter if the new or old method was used for calculations, the emissions and risks would still decrease. The biggest difference in the Office of Environmental Health Hazard Assessment (OEHHA) risk assessment guidelines was changing the way the calculations were done by taking into account that children are more sensitive than adults. The change resulted in an increase in risks associated with a certain level of diesel emissions and other air toxics emissions. Mr. LaMarr further inquired if the increase in chromium 6 emissions in the previous MATES study was reversed. Dr. Ghosh stated that the 50% decrease in MATES IV was diesel reductions.

Mr. Paul Avila asked if black carbon is factored into the equation after it is burned. Dr. Pakbin responded that black carbon measurements are used to estimate total diesel particulate matter (PM). Diesel PM cannot be measured directly as it is a combination of pollutants.

Mr. Rothbart asked if carcinogens are periodically broken down to see what they are. Dr. Pakbin stated that they look at the PM composition, how it changes, and how the changes affect cancer risk. This PM data is contained in the MATES report.

Ms. Loof asked if the risk reduction would be greater using the old guidelines instead of the new guidelines, to which Dr. Pakbin said that the same methodology is used.

Mr. Avila inquired if black carbon will diminish in the future since technology is improving. Dr. Pakbin responded that reductions in black carbon measurements have been observed. Another source that can cause spikes in black carbon are wildfires. There is also a downward trend of black carbon, and based on the Air Quality Management Plan (AQMP), most of the black carbon come from diesel trucks that are not registered in California and out of SCAQMD jurisdiction. Mr. Avila further inquired if wildfires and dust storms impact the results of the study. Dr. Pakbin said that wildfires will both impact PM_{2.5} and criteria pollutants. When estimating diesel PM, carbon needs to be separated from fires. Mr. Avila

asked if the optical tent system would be able to understand data as far as disseminating if there are actual leaks. Dr. Pakbin said that as an area source, the technology is useful to assess the emissions.

Mr. LaMarr asked if there is a schedule for the mobile laboratory. Dr. Pakbin responded that they try to get data at different times of day, but that it has to be done during the daytime.

Ms. LaVaughn Daniel asked what technology can identify contaminants. Dr. Pakbin indicated that the optical tent is measuring benzene, toluene, ethylbenzene, and xylenes (B-TEX). Ms. Daniel asked if the mobile laboratory analyzes samples. Dr. Pakbin replied that they continuously measure pollutants, but require analysis and interpretation. Ms. Daniel then asked about the time and size of an area and how the data gets analyzed. Dr. Pakbin stated that the mobile laboratory will target an area or a specific facility to take several samples.

Ms. Loof inquired about the process to develop guidelines, which sensor technology would be used, and if public comment would be allowed. Dr. Pakbin responded that the first sensor deployment utilizes purple air and black carbon are commercially available; however, VOC sensors are newer technology and not commercially available. Dr. Jason Low indicated we have the AQ-SPEC program, which performs evaluations for all types of low cost sensors to provide to the public. Through the U.S. EPA Star Grant, staff is working with communities and will provide an educational toolbox that will be on our website. Ms. Loof asked, in regards to sensors, if there will be an internal staff process, engaging of the Governing Board, or if a report will be presented to the Board regarding endorsements of the sensors. Dr. Low replied that staff is working with the State to get guidelines on sensors as part of the AB 617 process.

Mr. LaMarr asked if low cost sensors are more accurate at reading PM than VOCs. Dr. Low stated that PM sensors are more corresponding to reference methods. The VOC portion is challenging because there are different gasses that respond to measurement techniques. Mr. LaMarr asked if there will be established protocol and guidelines for people using portable sensors, and if they are just being used for detection purposes. Dr. Low said that they are just being used for detection and if more monitoring is needed, they will do so.

Ms. Daniel asked if the data will be available to public. Dr. Low responded that the plan is to make the data available to the public.

Ms. Loof asked if we are looking for volunteers for community partnerships and if we envision any other rules for non-refinery sources. Dr. Pakbin indicated that the SCAQMD will reach out to community members and the public for volunteers to install sensors in their homes. The SCAQMD is also seeking partnerships with schools that would be interested in installing sensors. As to new rules, Dr. Ghosh referred to the SCAQMD's rule calendar.

Mr. Rothbart suggested more education for the public regarding health risks and what influences those risks, and things people can and cannot control.

Mr. LaMarr asked how staff plans on conducting a needs assessment. Dr. Ghosh responded that it will be community perspective and what is raised as concerns. Mr. LaMarr suggested working with the medical community. Dr. Ghosh stated that we are already working with the medical community, one is the Long Beach Alliance for Children with Asthma, which is part of a hospital. The SCAQMD has been reaching out to public health agencies and cancer registry agencies for collaboration.

Agenda Item #5 - FY 2018-19 General Fund Budget and Fee Adjustment

Ms. Sujata Jain presented an overview of the General Fund Budget and Fee Adjustment detailing staffing levels, expenditures, and revenues required to maintain current program commitments.

Mr. Avila inquired about the grant scenario for both Federal and State. Ms. Jain indicated that the main State grants are from AB 617, and the SCAQMD generally gets \$7,000,000 from Federal grants. Mr. LaMarr asked if permit costs would eventually go down because more can be done online. Ms. Jain responded that, similar to implementing the online payments, we need to invest money first.

Agenda Item #6 - Commercial Fuel Cell and Electric Battery Vehicles

Ms. Lisa Mirisola presented an overview of currently available and anticipated fuel cell and battery electric vehicles and incentives.

Mr. Avila asked if the fuel cell battery industry will make the traditional battery industry more efficient because of competition. Ms. Mirisola responded that competition does drive further innovation and that the price of lithium batteries is dropping.

Ms. Loof requested elaboration on the stationary source fee. Ms. Mirisola indicated the fees are used to support stationary fuel projects. Mr. Naveen Berry said some funds are used for distributor generation, powering, and energy efficiency projects for stationary sources. Ms. Loof asked who is paying the fee. Mr. Berry responded that it comes from the annual emissions reporting fee.

Mr. Avila asked what percentage would be extracted from the cost of battery. Mr. Berry said that \$1.00 comes from the registration fee by each car owner which comes from the annual emissions reporting fee.

Mr. Blake asked if there is a possibility of a shortage of battery building materials. Ms. Mirisola said it is something to keep an eye on, but that there are two sources of lithium.

Agenda Item #7 - Monthly Report on Small Business Assistance Activities

No comments.

Agenda Item #8 - Other Business

No other business.

Agenda Item #9 - Public Comment

No comments.

Agenda Item #10 - Next Meeting Date

The next regular Local Government & Small Business Assistance Advisory Group meeting is scheduled for Friday, September 14, 2018 at 11:30 a.m.

Adjournment

The meeting adjourned at 1:08 p.m.

BOARD MEETING DATE: November 2, 2018

AGENDA NO. 22

REPORT: Mobile Source Committee

SYNOPSIS: The Mobile Source Committee held a meeting on Friday, October 19, 2018. The following is a summary of the meeting.

RECOMMENDED ACTION:
Receive and file.

Dr. Clark E. Parker, Sr., Chair
Mobile Source Committee

PMF:AF

Committee Members

Present: Dr. Clark E. Parker, Sr./Chair (videoconference)
Dr. Joseph Lyou, Vice Chair
Mayor Pro Tem Judith Mitchell
Supervisor V. Manuel Perez (videoconference)
Supervisor Hilda L. Solis (videoconference)

Absent: Mayor Larry McCallon

Call to Order

Chair Parker called the meeting to order at 9:01 a.m.

ACTION ITEM:

1. Summary of 2018 Ozone Season and Issue an RFP to Evaluate Meteorological Factors and Trends Contributing to Recent Poor Air Quality in the South Coast Air Basin

Philip Fine, Deputy Executive Officer/Planning, Rule Development and Area Sources, summarized the 2018 ozone season, including recent trends and variability in ozone levels and meteorological conditions, emissions, as well as the photochemistry involved in ozone formation. Staff also proposed to issue an RFP to evaluate various meteorological factors conducive to poor air quality and the potential impact of climate changes on those variables.

Dr. Parker asked how adverse meteorological factors were addressed in SCAQMD's strategy to improve air quality. Staff responded that weather conditions are likely the biggest factor in day to day changes in air quality. Climate may play a bigger role if meteorology is shifting to a level that can exacerbate air quality despite having emission reductions. The meteorology study could assist staff to develop appropriate strategies to reflect the potential impacts of climate change. This may require greater amounts of emission reductions if adverse meteorology is expected to be more frequent in the future. SCAQMD has taken a leadership role in air quality management and would need to continue this leadership role in climate change issues in relation to regional air quality.

Supervisor Perez supported issuing the RFP and recommended that staff report the progress from the study to the Climate Change Committee.

Mayor Pro Tem Mitchell asked about the time period that would be included in the study and CARB's role in research projects similar to the study in question. Staff explained that the time period will be determined based on proposals received. CARB and other agencies have conducted studies to evaluate air quality in response to future climate, but this study would look at a shorter time period that is more relevant to the region's near-term attainment deadlines.

Supervisor Solis asked how staff responded to the L.A. Times article stating that 2018 is the worst ozone air quality year based on the number of consecutive days exceeding the federal air quality standard. Staff responded that they communicated with the Times reporter multiple times to explain that the number of consecutive ozone exceedances is not the preferred metric to judge progress.

Supervisor Solis suggested that staff coordinate with other entities such as National Oceanic and Atmospheric Administration (NOAA) and NASA Jet Propulsion Laboratory (JPL) and with the media, academia and other public health agencies to protect the public from adverse health impacts of air pollution. Staff responded that they will contact researchers at NOAA, JPL and other entities capable of conducting similar research.

Dr. Lyou raised concerns regarding the impact of the persistent poor air quality on public health exposure. Even though the National Ambient Air Quality Standards (NAAQS) does not focus on the consecutive number of days exceeding the standard, the cumulative impact from persistent exposure should be considered. Dr. Lyou also expressed concern about uncertainties associated with the emissions inventory, the trend of ozone precursor emissions, and changes in ozone in response to NOx reductions. He recommended that the results of recent refinery VOC emission studies be addressed in the meteorology study. He also asked whether staff had in-house expertise for this work. Staff replied that the study will be an independent evaluation.

Supervisor Solis recommended that staff consider promoting carpooling to reduce emissions on high ozone days. Staff responded that the employee carpool program and clean fuel fleet vehicle regulations are addressed in existing SCAQMD rules. Dr. Parker suggested that the media could leverage carpooling on days with poor air quality.

Moved by Perez; seconded by Mitchell; unanimously approved

Ayes: Lyou, Mitchell, Parker, Perez and Solis
Noes: None
Absent: McCallon

INFORMATIONAL ITEM:

2. Updated 1-hour Ozone Standard Attainment Demonstration

Zorik Pirveysian, Planning & Rules Manager, presented the updated attainment demonstration for the federal 1979 1-hour ozone standard which reflects updated emissions inventory, revised modeling analysis, and revised attainment strategy. The emissions inventory used in this update is now consistent with the final emissions inventory in the 2016 AQMP which was slightly different than the inventory version used for the 1-hour ozone standard attainment demonstration in the 2016 AQMP. Based on the revised modeling analysis, the updated attainment strategy relies only on SCAQMD's stationary and mobile source measures, and emission reductions from CARB's SIP strategies are not needed for meeting the 1-hour ozone standard by 2022.

Dr. Parker requested clarification regarding SCAQMD's commitment for NOx emission reductions targeted for meeting the 1997 8-hour ozone standard by 2023. Staff responded that this updated 1-hour ozone standard attainment demonstration is merely a technical update to reflect the final emissions inventory in the 2016 AQMP to update the attainment strategy (i.e., rely exclusively on emission reductions associated with SCAQMD's stationary and mobile source measures). As such, the reduction commitments by SCAQMD and CARB for meeting the 8-hour ozone standards in 2023 and 2031, respectively, remain unchanged.

Dr. Lyou asked about progress in achieving the 2022 NOx emission reductions, especially those expected from incentive-based programs. Staff responded that the majority of the reduction commitments allocated to incentive-based programs for the year 2022 were based on SCAQMD's existing incentive programs (e.g., Carl Moyer, Prop 1B) with available secured funding for at least the next several years. These reductions include projects that have already been funded since 2013 and also future projects that will be funded through 2022. In addition, there are ongoing rulemaking activities for SCAQMD measures which are expected to provide reductions toward attainment of the 1-hour ozone standard by 2022 (e.g., Rule 1168 adopted in October 2017). Finally, additional reductions beyond SCAQMD's stationary and mobile

source measures are also anticipated from recent CARB regulatory activities which were not quantified in the 2016 AQMP (e.g., CARB's Innovative Clean Transit Regulation, proposed Ocean-Going Vessels At-Berth regulation) as well as projects to be funded under the Incentives RFP released earlier this year.

WRITTEN REPORTS:

3. Rule 2202 Activity Report: Rule 2202 Summary Status Report

This item was received and filed.

4. Monthly Report on Environmental Justice Initiatives: CEQA Document Commenting Update

Supervisor Solis inquired about the status of the Quemetco project for which the SCAQMD is the lead agency under CEQA. Mr. Nastri recused himself and left the room for the discussion. Staff highlighted the recent CEQA Scoping meetings that took place in the community and the high level of interest in the project. Dr. Lyou mentioned he attended that meeting and that all public testimony at the meeting opposed the project. Supervisor Solis requested that staff inquire about the status of releasing the soil sample results from the Department of Toxic Substances Control (DTSC), and Dr. Fine noted that DTSC was planning on releasing the results in an upcoming public meeting yet to be scheduled.

This item was received and filed.

OTHER MATTERS:

5. Other Business

There was no other business.

6. Public Comment Period

There were no public comments.

7. Next Meeting Date:

The next regular Mobile Source Committee meeting is scheduled for Friday, November 16, 2018.

Adjournment

The meeting adjourned at 10:24 a.m.

Attachments

1. Attendance Record
2. Rule 2202 Activity Report – Written Report
3. Monthly Report on Environmental Justice Initiatives: CEQA Document Commenting Update – Written Report

ATTACHMENT 1

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT MOBILE SOURCE COMMITTEE MEETING Attendance – October 19, 2018

Dr. Clark E. Parker, Sr. (videoconference)	SCAQMD Board Member
Dr. Joseph Lyou	SCAQMD Board Member
Mayor Pro Tem Judith Mitchell.....	SCAQMD Board Member
Supervisor V. Manuel Perez (videoconference)	SCAQMD Board Member
Supervisor Hilda L. Solis (videoconference).....	SCAQMD Board Member
Mark Abramowitz.....	Board Consultant (Lyou)
David Czamanske	Board Consultant (Cacciotti)
Ron Ketcham	Board Consultant (McCallon)
Curt Coleman	Southern CA Air Quality Alliance
Peter Herzog.....	NAIOP SoCal (Commercial Real Estate Development Association
Bill LaMarr	California Small Business Alliance
Daniel McGivney.....	SoCalGas
David Rothbart.....	Los Angeles County Sanitation Districts
Peter Whittingham	Whittingham Public Affairs Advisors
Barbara Baird.....	SCAQMD Staff
Marc Carreras Sospedra.....	SCAQMD Staff
Kalam Cheung	SCAQMD Staff
Brian Choe	SCAQMD Staff
Scott Epstein	SCAQMD Staff
Arlene Farol	SCAQMD Staff
Philip Fine.....	SCAQMD Staff
Carol Gomez	SCAQMD Staff
Erika Graham.....	SCAQMD Staff
Michael Krause.....	SCAQMD Staff
Andrew Lee.....	SCAQMD Staff
Sang-Mi Lee.....	SCAQMD Staff
Matt Miyasato	SCAQMD Staff
Wayne Nastri	SCAQMD Staff
Zorik Pirveysian.....	SCAQMD Staff
Sarah Rees.....	SCAQMD Staff
Laki Tisopulos	SCAQMD Staff
Veera Tyagi.....	SCAQMD Staff
Jill Whynot.....	SCAQMD Staff
Paul Wright	SCAQMD Staff



South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4182
(909) 396-2000 • www.aqmd.gov

Rule 2202 Summary Status Report

Activity for January 1, 2018 to September 30, 2018

Employee Commute Reduction Program (ECRP)	
# of Submittals:	198

Emission Reduction Strategies (ERS)	
# of Submittals:	462

Air Quality Investment Program (AQIP) Exclusively		
County	# of Facilities	\$ Amount
Los Angeles	45	\$ 241,664
Orange	17	\$ 165,354
Riverside	2	\$ 31,075
San Bernardino	4	\$ 20,047
TOTAL:	68	\$ 468,141

ECRP w/AQIP Combination		
County	# of Facilities	\$ Amount
Los Angeles	5	\$ 21,823
Orange	0	\$ 0
Riverside	0	\$ 0
San Bernardino	1	\$ 9,253
TOTAL:	6	\$ 31,075

Total Active Sites as of September 30, 2018

ECRP (AVR Surveys)			TOTAL Submittals w/Surveys	AQIP	ERS	TOTAL
ECRP ¹	AQIP ²	ERS ³				
496	16	13	525	106	724	1,355
36.61%	1.18%	0.96%	38.75%	7.82%	53.43%	100% ⁴

Total Peak Window Employees as of September 30, 2018

ECRP (AVR Surveys)			TOTAL Submittals w/Surveys	AQIP	ERS	TOTAL
ECRP ¹	AQIP ²	ERS ³				
367,021	5,565	11,268	383,854	16,413	328,281	728,548
50.38%	.76%	1.55%	52.69%	2.25%	45.06%	100% ⁴

- Notes:**
1. ECRP Compliance Option.
 2. ECRP Offset (combines ECRP w/AQIP). AQIP funds are used to supplement the ECRP AVR survey shortfall.
 3. ERS with Employee Survey to get Trip Reduction credits. Emission/Trip Reduction Strategies are used to supplement the ECRP AVR survey shortfall.
 4. Totals may vary slightly due to rounding.

BOARD MEETING DATE: November 2, 2018

AGENDA NO.

REPORT: Lead Agency Projects and Environmental Documents Received By SCAQMD

SYNOPSIS: This report provides, for the Board's consideration, a listing of CEQA documents received by the SCAQMD between September 1, 2018 and September 30, 2018, and those projects for which the SCAQMD is acting as lead agency pursuant to CEQA.

COMMITTEE: Mobile Source, October 19, 2018; Reviewed

RECOMMENDED ACTION:
Receive and file.

Wayne Nastri
Executive Officer

PF:SN:MK:DG:LW

CEQA Document Receipt and Review Logs (Attachments A and B) – Each month, the SCAQMD receives numerous CEQA documents from other public agencies on projects that could adversely affect air quality. A listing of all documents received and reviewed during the reporting period September 1, 2018 through September 30, 2018 is included in Attachment A. A list of active projects from previous reporting periods for which SCAQMD staff is continuing to evaluate or has prepared comments is included in Attachment B. A total of 90 CEQA documents were received during this reporting period and 42 comment letters were sent. Notable projects to highlight in this report include the Berths 97-109 [China Shipping] Container Terminal Project, the Santa Susana Field Laboratory Project, and the Aircraft Heat Treating Dust Collection Project.

The Intergovernmental Review function, which consists of reviewing and commenting on the adequacy of the air quality analysis in CEQA documents prepared by other lead agencies, is consistent with the Board's 1997 Environmental Justice Guiding Principles and Environmental Justice Initiative #4. As required by the Environmental Justice Program Enhancements for FY 2002-03 approved by the Board in October 2002, each of

the attachments notes those proposed projects where the SCAQMD has been contacted regarding potential air quality-related environmental justice concerns. The SCAQMD has established an internal central contact to receive information on projects with potential air quality-related environmental justice concerns. The public may contact the SCAQMD about projects of concern by the following means: in writing via fax, email, or standard letters; through telephone communication; as part of oral comments at SCAQMD meetings or other meetings where SCAQMD staff is present; or by submitting newspaper articles. The attachments also identify for each project the dates of the public comment period and the public hearing date, if applicable, as reported at the time the CEQA document is received by the SCAQMD. Interested parties should rely on the lead agencies themselves for definitive information regarding public comment periods and hearings as these dates are occasionally modified by the lead agency.

At the January 6, 2006 Board meeting, the Board approved the Workplan for the Chairman's Clean Port Initiatives. One action item of the Chairman's Initiatives was to prepare a monthly report describing CEQA documents for projects related to goods movement and to make full use of the process to ensure the air quality impacts of such projects are thoroughly mitigated. In response to describing goods movement, CEQA documents (Attachments A and B) are organized to group projects of interest into the following categories: goods movement projects; schools; landfills and wastewater projects; airports; general land use projects, etc. In response to the mitigation component, guidance information on mitigation measures were compiled into a series of tables relative to: off-road engines; on-road engines; harbor craft; ocean-going vessels; locomotives; fugitive dust; and greenhouse gases. These mitigation measure tables are on the CEQA webpages portion of the SCAQMD's website at: <http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/mitigation-measures-and-control-efficiencies>. Staff will continue compiling tables of mitigation measures for other emission sources, including airport ground support equipment and other sources.

As resources permit, staff focuses on reviewing and preparing comments for projects: where the SCAQMD is a responsible agency; that may have significant adverse regional air quality impacts (e.g., special event centers, landfills, goods movement, etc.); that may have localized or toxic air quality impacts (e.g., warehouse and distribution centers); where environmental justice concerns have been raised; and those projects for which a lead or responsible agency has specifically requested SCAQMD review. If staff provided written comments to the lead agency as noted in the column "Comment Status," there is a link to the "SCAQMD Letter" under the Project Description. In addition, if staff testified at a hearing for the proposed project, a notation is provided under the "Comment Status." If there is no notation, then staff did not provide testimony at a hearing for the proposed project.

During the period September 1, 2018 through September 30, 2018, the SCAQMD received 90 CEQA documents. Of the total of 116 documents* listed in Attachments A and B:

- 42 comment letters were sent;
- 23 documents were reviewed, but no comments were made;
- 39 documents are currently under review;
- 11 documents did not require comments (e.g., public notices);
- 0 documents were not reviewed; and
- 1 document was screened without additional review.

* These statistics are from September 1, 2018 to September 30, 2018 and may not include the most recent “Comment Status” updates in Attachments A and B.

Copies of all comment letters sent to lead agencies can be found on the SCAQMD’s CEQA webpage at the following internet address:

<http://www.aqmd.gov/home/regulations/ceqa/commenting-agency>.

SCAQMD Lead Agency Projects (Attachment C) – Pursuant to CEQA, the SCAQMD periodically acts as lead agency for stationary source permit projects. Under CEQA, the lead agency is responsible for determining the type of CEQA document to be prepared if the proposal is considered to be a “project” as defined by CEQA. For example, an Environmental Impact Report (EIR) is prepared when the SCAQMD, as lead agency, finds substantial evidence that the proposed project may have significant adverse effects on the environment. Similarly, a Negative Declaration (ND) or Mitigated Negative Declaration (MND) may be prepared if the SCAQMD determines that the proposed project will not generate significant adverse environmental impacts, or the impacts can be mitigated to less than significance. The ND and MND are written statements describing the reasons why proposed projects will not have a significant adverse effect on the environment and, therefore, do not require the preparation of an EIR.

Attachment C to this report summarizes the active projects for which the SCAQMD is lead agency and is currently preparing or has prepared environmental documentation. As noted in Attachment C, the SCAQMD continued working on the CEQA documents for four active projects during August.

Attachments

- A. Incoming CEQA Documents Log
- B. Ongoing Active Projects for Which SCAQMD Has or Will Conduct a CEQA Review
- C. Active SCAQMD Lead Agency Projects

**ATTACHMENT A
INCOMING CEQA DOCUMENTS LOG
September 01, 2018 to September 30, 2018**

DRAFT

<u>SCAQMD LOG-IN NUMBER</u> PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
<i>Airports</i> ORC180920-06 General Aviation Improvement Program	The proposed project consists of demolition of 134,000 square feet of existing facilities and construction of two full service fixed base operators (FBO) totaling 97,000 square feet on 504 acres. The project is located at 18601 Airport Way on the southwest corner of Main Street and MacArthur Boulevard in the City of Santa Ana. Reference ORC170330-14 Comment Period: 9/20/2018 - 11/6/2018 Public Hearing: N/A	Draft Program Environmental Impact Report	County of Orange	** Under review, may submit written comments
<i>Airports</i> RVC180905-02 MA16046 (PUP1402)	The proposed project consists of construction of a 35,328-square-foot aviation technical college on 75 acres. The project is located at 4130 Mennes Avenue on the southwest corner of Mennes Avenue and Twining Street. Reference RVC170525-03 Comment Period: 9/1/2018 - 9/20/2018 Public Hearing: N/A	Mitigated Negative Declaration	City of Jurupa Valley	Document reviewed - No comments sent
<i>Airports</i> SBC180904-03 Eastgate Building 1 Project	The proposed project consists of construction of a 655,746-square-foot warehouse, and two maintenance and service buildings totaling 50,000 square feet on 101.52 acres. The project is located on the southwest corner of Perimeter Road and Hangar Way in the City of San Bernardino. Reference SBC180719-04 Comment Period: 8/28/2018 - 10/11/2018 Public Hearing: 10/26/2018	Draft Environmental Impact Report	San Bernardino International Airport Authority	** Under review, may submit written comments
<i>Industrial and Commercial</i> LAC180904-09 Electronic Billboard at 13530 Firestone Blvd.	The proposed project consists of construction of a 60-foot digital billboard with associated infrastructure on 0.46 acres. The project is located near the southeast corner of Arctic Circle and Firestone Boulevard. Comment Period: 8/30/2018 - 9/19/2018 Public Hearing: 10/8/2018	Notice of Intent to Adopt a Negative Declaration	City of Santa Fe Springs	Document reviewed - No comments sent

- Project has potential environmental justice concerns due to the nature and/or location of the project.

** Disposition may change prior to Governing Board Meeting

Documents received by the CEQA Intergovernmental Review program but not requiring review are not included in this report.

**ATTACHMENT A
INCOMING CEQA DOCUMENTS LOG
September 01, 2018 to September 30, 2018**

DRAFT

<u>SCAQMD LOG-IN NUMBER</u> PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
<i>Industrial and Commercial</i> LAC180911-07 Dissolved Phase Management Plan (Phillips 66 Los Angeles Refinery Wilmington Plant)	The proposed project consists of installation of two groundwater monitoring wells and four groundwater extraction wells on 424 acres. The project is located at 1660 West Anaheim Street on the southeast corner of Anaheim Street and Gaffey Street in the community of Wilmington. Reference: LAC170801-09 Comment Period: 8/29/2018 - 10/1/2018 Public Hearing: N/A	Community Notice	Los Angeles Regional Water Quality Control Board	Document reviewed - No comments sent
<i>Industrial and Commercial</i> LAC180911-11 Media Studios Project	The proposed project consists of construction of a 160,447-square-foot office building on a 1.73-acre portion of 11.38 acres. The project is located on the northeast corner of North Avon Street and Empire Avenue. Reference LAC180130-04 and LAC130219-03 Comment Period: 9/10/2018 - 10/24/2018 Public Hearing: 10/8/2018	Draft Environmental Impact Report	City of Burbank	** Under review, may submit written comments
<i>Industrial and Commercial</i> LAC180920-01 ENV-2016-4637: 3505 S. Sepulveda Blvd.	The proposed project consists of construction of an 880-square-foot restaurant on 14,167 square feet. The project is located on the southwest corner of Palms Boulevard and South Sepulveda Boulevard in the community of Palms-Ma Vista-Del Rey. Comment Period: 9/20/2018 - 10/10/2018 Public Hearing: N/A	Mitigated Negative Declaration	City of Los Angeles	** Under review, may submit written comments
<i>Industrial and Commercial</i> LAC180927-05 Aerocraft Heat Treating Dust Collection Project (Conditional Use Permit No. 854)	The proposed project consists of installation of four new dust collectors attached to two existing buildings on 1.6 acres. The project is located at 15701 Minnesota Avenue on the southwest corner of Madison Street and Minnesota Avenue. Comment Period: 9/19/2018 - 10/9/2018 Public Hearing: 10/9/2018	Mitigated Negative Declaration	City of Paramount	** Under review, may submit written comments

- Project has potential environmental justice concerns due to the nature and/or location of the project.

** Disposition may change prior to Governing Board Meeting

Documents received by the CEQA Intergovernmental Review program but not requiring review are not included in this report.

ATTACHMENT B*
ONGOING ACTIVE PROJECTS FOR WHICH SCAQMD HAS
OR IS CONTINUING TO CONDUCT A CEQA REVIEW

<u>SCAQMD LOG-IN NUMBER</u> PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
<i>Utilities</i> RVC180816-08 Desert Quartzite Solar Project	The proposed project consists of evaluation of four build alternatives for a solar photovoltaic (PV) electric generating facility with associated infrastructures on 3,700 acres. The four alternatives include: (1) construction, operation, maintenance and decommissioning of a 450-megawatt (MW) solar PV electric generating facility; (2) a Resource Avoidance alternative that would support a 450 MW solar PV facility; (3) a Reduced Project alternative that would support a 285 MW solar PV facility; and (4) a No Action alternative. The project is located northwest of the Gravel Pit Road and Ludy Boulevard intersection near the City of Blythe. Comment Period: 8/10/2018 - 11/8/2018 Public Hearing: N/A	Notice of Availability of a Draft Environmental Impact Statement/ Environmental Impact Report	County of Riverside	**Under review, may submit written comments
<i>General Land Use (residential, etc.)</i> LAC180828-07 1375 St. Andrews Apartments (ENV-2015-4630-EIR)	The proposed project consists of demolition of two buildings totaling 35,057 square feet, and construction of a 226,160-square-foot building with 185 residential units and subterranean parking on 1.7 acres. The project is located on the southwest corner of St. Andrews Place and West De Longpre Avenue in the community of Hollywood. Reference LAC160525-02 Comment Period: 8/23/2018 - 10/8/2018 Public Hearing: N/A	Notice of Availability of a Draft Environmental Impact Report	City of Los Angeles	**Under review, may submit written comments
<i>Plans and Regulations</i> ORC180828-06 Beach Boulevard Specific Plan EIR No. 350 (Development Project No. 2015-00014)	The proposed project consists of the development of guidelines for future developments and public improvements within the areas along the 1.5-mile portion of Beach Boulevard between Starr Street and Crescent Avenue. Reference ORC170414-02 Comment Period: 8/23/2018 - 10/8/2018 Public Hearing: 10/29/2018	Notice of Availability of a Draft Environmental Impact Report	City of Anaheim	**Under review, may submit written comments
<i>Warehouse & Distribution Centers</i> LAC180830-03 ENV-2018-3115: 4794-4800 E. Valley Blvd.	The proposed project consists of demolition of two warehouse buildings totaling 21,160 square feet, and construction of a 151,487-square-foot storage building on 2.53 acres. The project is located on the southeast corner of Valley Boulevard and Eastern Avenue in the community of Northeast Los Angeles. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2018/ndenv20183115-092018.pdf Comment Period: 8/30/2018 - 9/19/2018 Public Hearing: N/A	Negative Declaration	City of Los Angeles	SCAQMD staff commented on 9/20/2018

*Sorted by Comment Status, followed by Land Use, then County, then date received.

- Project has potential environmental justice concerns due to the nature and/or location of the project.

** Disposition may change prior to Governing Board Meeting

ATTACHMENT B
ONGOING ACTIVE PROJECTS FOR WHICH SCAQMD HAS
OR IS CONTINUING TO CONDUCT A CEQA REVIEW

DRAFT

SCAQMD LOG-IN NUMBER PROJECT TITLE	PROJECT DESCRIPTION	TYPE OF DOC.	LEAD AGENCY	COMMENT STATUS
Transportation LAC180828-05 Dugout Loop High Speed Transportation Project	The proposed project consists of construction of a 3.6-mile subterranean, battery-powered, high-speed public transportation system. The project extends from the intersection of Stadium Way and Vin Scully Avenue in the community of Elysian Park to the intersection of Vermont Avenue and Sunset Boulevard, Vermont Avenue and Santa Monica Boulevard, or Vermont Avenue and Beverly Boulevard in the community of Los Feliz, East Hollywood, or Rampart Village. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2018/nopdugoutloop-090618.pdf Comment Period: 8/16/2018 - 9/17/2018 Public Hearing: 8/28/2018	Notice of Preparation	City of Los Angeles	SCAQMD staff commented on 9/6/2018
Transportation RVC180828-15 Hamner Avenue Bridge Replacement Project	The proposed project consists of demolition of existing bridge, and construction of a replacement bridge with three 12-foot lanes and a four-foot shoulder in each direction, a four-foot median, and a 12-foot barrier to separate the trail on the east side of the bridge on 0.7 miles. The project would also include construction of left-turn lanes at the intersections of Detroit Street and Hamner Avenue, and Citrus Street and Hamner Avenue. The project is located along Hamner Avenue between Citrus Street and Detroit Street. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2018/mndhamneravenue-092118.pdf Comment Period: 8/24/2018 - 9/24/2018 Public Hearing: N/A	Mitigated Negative Declaration	City of Norco	SCAQMD staff commented on 9/21/2018
Institutional (schools, government, etc.) SBC180821-03 Family Resources Center and District Police Headquarters Project	The proposed project consists of demolition of existing church and motel, and construction of a 19,020-square-foot family resource center and a 15,772-square-foot police headquarters on 4.33 acres. The project is located at 777 North F Street, and 736 and 746 North E Street on the northeast corner of West 7th Street and North F Street. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2018/nopfamiliresources-091318.pdf Comment Period: 8/20/2018 - 9/20/2018 Public Hearing: N/A	Notice of Preparation	San Bernardino City Unified School District	SCAQMD staff commented on 9/13/2018
Retail LAC180815-02 Avion Burbank	The proposed project consists of the construction of 15,475 square feet of retail, 142,250 square feet of office use, a 101,230-square-foot hotel with 166 rooms, and 1,014,887 square feet of industrial use on 61 acres. The project is located at 3001 North Hollywood Way on the southwest corner of San Fernando Road and North Hollywood Way. Reference LAC170609-01 http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2018/deiravionburbank-092818.pdf Comment Period: 8/15/2018 - 9/28/2018 Public Hearing: 9/10/2018	Draft Environmental Impact Report	City of Burbank	SCAQMD staff commented on 9/28/2018
Retail ORC180815-05 Tustin Avenue Retail Project	The proposed project consists of demolition of existing gas station, canopy, car wash, and restaurant building, and construction of a 7,417-square-foot retail building, a 2,778-square-foot convenience store, and a 2,117-square-foot canopy with eight fueling pumps on 1.46 acres. The project is located on the northeast and southeast corner of North Tustin Avenue and East 4th Street. http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2018/mndtustinavenueretail-091218.pdf Comment Period: 8/13/2018 - 9/11/2018 Public Hearing: N/A	Mitigated Negative Declaration	City of Santa Ana	SCAQMD staff commented on 9/12/2018

- Project has potential environmental justice concerns due to the nature and/or location of the project.

** Disposition may change prior to Governing Board Meeting

**ATTACHMENT C
ACTIVE SCAQMD LEAD AGENCY PROJECTS
THROUGH SEPTEMBER 30, 2018**

PROJECT DESCRIPTION	PROPONENT	TYPE OF DOCUMENT	STATUS	CONSULTANT
<p>The Phillips 66 (formerly ConocoPhillips) Los Angeles Refinery Ultra Low Sulfur Diesel project was originally proposed to comply with federal, state and SCAQMD requirements to limit the sulfur content of diesel fuels. Litigation against the CEQA document was filed. Ultimately, the California Supreme Court concluded that the SCAQMD had used an inappropriate baseline and directed the SCAQMD to prepare an EIR, even though the project has been built and has been in operation since 2006. The purpose of this CEQA document is to comply with the Supreme Court's direction to prepare an EIR.</p>	<p>Phillips 66 (formerly ConocoPhillips), Los Angeles Refinery</p>	<p>Environmental Impact Report (EIR)</p>	<p>The Notice of Preparation/Initial Study (NOP/IS) was circulated for a 30-day public comment period on March 26, 2012 to April 26, 2012. The consultant submitted the administrative Draft EIR to SCAQMD in late July 2013. The Draft EIR was circulated for a 45-day public review and comment period from September 30, 2014 to November 13, 2014. Two comment letters were received and the consultant has prepared responses to comments which are undergoing SCAQMD review.</p>	<p>Environmental Audit, Inc.</p>
<p>Quemetco is proposing to modify existing SCAQMD permits to allow the facility to recycle more batteries and to eliminate the existing daily idle time of the furnaces. The proposed project will increase the rotary feed drying furnace feed rate limit from 600 to 750 tons per day and increase the amount of total coke material allowed to be processed. In addition, the project will allow the use of petroleum coke in lieu of or in addition to calcined coke, and remove one existing emergency diesel-fueled internal combustion engine (ICE) and install two new emergency natural gas-fueled ICEs.</p>	<p>Quemetco</p>	<p>Environmental Impact Report (EIR)</p>	<p>A Notice of Preparation/Initial Study (NOP/IS) has been released for a 32-day public review and comment period from August 31, 2018 to October 2, 2018. The comment period has been extended to 5:00 p.m. October 25, 2018 (56 days). An additional CEQA scoping meeting will be held on October 11, 2018 at Hacienda Heights Community Center, 1234 Valencia Ave., Hacienda Heights, CA 91745 from 6:00 p.m. to 9:00 p.m. and the presentation will begin at 6:30 p.m.</p>	<p>Trinity Consultants</p>

**ATTACHMENT C
ACTIVE SCAQMD LEAD AGENCY PROJECTS
THROUGH SEPTEMBER 30, 2018**

PROJECT DESCRIPTION	PROPONENT	TYPE OF DOCUMENT	STATUS	CONSULTANT
<p>Southern California Edison (SCE) is proposing to modify the air pollution control system for the Barre Peaker unit to repair current and prevent future water damage by: 1) decreasing the water-injection rate into the turbine’s combustor; 2) replacing the oxidation catalyst and increasing the overall area of catalyst beds in the selective catalytic reduction (SCR) unit; 3) replacing the ammonia injection grid to improve the deliverability of ammonia to the catalyst; and, 4) increasing the concentration of the aqueous ammonia that is delivered to the facility, stored on-site, and injected into the SCR unit from 19% to 29%. In addition, SCE is proposing to revise its SCAQMD Title V Operating Permit to allow the turbine to generate power over its full operating range, from less than one megawatt (MW) to full load (e.g., 45 MW net), while continuing to meet the emission limits in the current permit.</p>	<p>Southern California Edison</p>	<p>Addendum to the April 2007 Final Mitigated Negative Declaration for the Southern California Edison Barre Peaker Project in Stanton</p>	<p>SCAQMD staff has provided revised Draft Addendum for the consultant to review. SCAQMD staff is awaiting a response from the consultant.</p>	<p>Yorke Engineering, LLC</p>
<p>Southern California Edison (SCE) is proposing to modify the air pollution control system for the Mira Loma Peaker unit to repair current and prevent future water damage by: 1) decreasing the water-injection rate into the turbine’s combustor; 2) replacing the oxidation catalyst and increasing the overall area of catalyst beds in the Selective Catalytic Reduction (SCR) unit; 3) replacing the ammonia injection grid to improve the deliverability of ammonia to the catalyst; and, 4) increasing the concentration of the aqueous ammonia that is delivered to the facility, stored on-site, and injected into the SCR unit from 19% to 29%. In addition, SCE is proposing to revise its SCAQMD Title V Operating Permit to allow the turbine to generate power over its full operating range, from less than one megawatt (MW) to full load (e.g., 45 MW net), while continuing to meet the emission limits in the current permit.</p>	<p>Southern California Edison</p>	<p>Addendum to the April 2007 Final Mitigated Negative Declaration for the Southern California Edison Mira Loma Peaker Project in Ontario</p>	<p>SCAQMD staff has provided revised Draft Addendum for the consultant to review. SCAQMD staff is awaiting a response from the consultant.</p>	<p>Yorke Engineering, LLC</p>

[↑ Back to Agenda](#)

BOARD MEETING DATE: November 2, 2018

AGENDA NO. 23

REPORT: Stationary Source Committee

SYNOPSIS: The Stationary Source Committee held a meeting on Friday, October 19, 2018. The following is a summary of the meeting.

RECOMMENDED ACTION:
Receive and file.

Ben Benoit, Chair
Stationary Source Committee

LT:rs

Committee Members

Present: Mayor Ben Benoit/Chair (videoconference)
Dr. Joseph Lyou/Vice Chair
Mayor Pro Tem Judith Mitchell
Supervisor V. Manuel Perez (videoconference)
Supervisor Janice Rutherford (videoconference)
Supervisor Hilda L. Solis (videoconference/arrived at 10:35 a.m.)

Absent: None

Call to Order

Chair Benoit called the meeting to order at 10:30 a.m.

INFORMATIONAL ITEMS:

- 1. Update on Proposed Amended Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations**
Ms. Susan Nakamura, Assistant Deputy Executive Officer/Planning, Rule Development, and Area Sources, presented an update on Proposed Amended Rule (PAR) 1469.

Wesley Turnbow, Metal Finishing Association of Southern California (MFASC), spoke on behalf of the Northern California, Southern California, and the national association. He stated that the MFASC no longer opposes the amendments to Rule 1469; however they still have concerns regarding economic impacts. This is one of many rules facilities have to comply with; one percent cost-to-revenue impact matters, especially if a facility cannot obtain loans for air pollution control equipment. He asked when the monitor around his facilities would be removed, and about the purpose of the downwind monitor.

Florence Gharibian, Del Amo Action Committee, expressed several concerns with PAR 1469, including: use of fume suppressants; ensuring enclosures are built; clear emission limits; time frames for source testing; and working towards eliminating hexavalent chromium use, which is the overarching concern. She appreciated schools being added to the definition of sensitive receptors, but was disappointed that parks were not also added. She hopes that this rule amendment will result in emission reductions of hexavalent chromium and its ultimate removal from use.

Supervisor Solis asked why parks were not added to the definition of sensitive receptors. Ms. Nakamura explained that staff considered parks and consulted with OEHHA on the definition of sensitive receptors and there is a two-pronged approach; involving predictability of use and long term use and exposure. Schools, although short-term, have predictable use. Hospitals do not have predictable use; however, someone could be there for a long time. Parks do not meet either definition of predictable or long term use. In terms of health impacts, a residential receptor is assumed to be outside during the entire time so their exposure while at a park is captured in the risk assessment.

Supervisor Solis suggested a pilot study involving putting a monitor in a park; wondered how many parks were located near PAR 1469 facilities and given the different times of day that people utilize parks, communities need to know they are safe when using parks. Wayne Nastri, Executive Officer, stated that we need to be consistent with state law and OEHHA guidance for risk assessments. Regarding the pilot study requested by Supervisor Solis, he stated that the MATES study covers parks, and staff will consider the request, possibly as part of the AB 617 process.

Supervisor Solis asked if the SCAQMD reports worker safety issues at facilities to CAL-OSHA. Mr. Nastri confirmed that concerns are shared with sister agencies, including CAL-OSHA; however, enforcement data is not shared.

Mayor Pro Tem Mitchell thanked staff for visiting all interested facilities, tailoring solutions for them, and working with them regarding cost-effectiveness. She thanked Mr. Turnbow and the MFASC for working with staff to find a solution. This is an important rule to get in place due to toxicity of hexavalent chromium. She also suggested that staff return to the Stationary Source Committee in a year to

report on implementation of the rule. Mr. Nastri stated that staff will return in 12 months for a progress report.

There was an additional late comment card received but since the public comment portion of this item had passed, Mayor Benoit declined to hear the comment but instead directed the commenter to speak with the Committee or staff after the meeting.

Supervisor Rutherford joined the meeting at 10:35 a.m. via videoconference.

2. Proposed Amended Rules 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters; 1146.1 – Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters; 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters; and Proposed Rule 1100, Implementation Schedule for NO_x Facilities

Tracy Goss, Planning and Rules Manager, provided a briefing on recent rulemaking efforts for Proposed Amended Rule 1146 series and Proposed Rule 1100.

David Rothbart, representing the Los Angeles County Sanitation Districts (LACSD), commented that little notice was given to the stakeholders of proposed changes to biogas limits. He emphasized the differences between biogas and natural gas and the challenges that LACSD have experienced with landfill gas. Mr. Rothbart mentioned that the landfill gas boilers located in Puente Hills emit less NO_x emissions than biogas engines and turbines. He disagrees that it is cost-effective for the landfill gas boilers located in Puente Hills to be retrofitted because the equipment is unique and there are no burner retrofits readily available from any vendor. He also commented on the decreasing quality of the landfill gas for landfills that are closing and the uncertainty that 20 ppm NO_x can be achieved. Mr. Rothbart requested a one-year natural gas flame stabilization study to ensure 20 ppm is achievable.

Allison Torres, representing the Southern California Alliance of Publicly Owned Treatment Works (SCAP) and Eastern Municipal Water District (EMWD), stated that SCAP members have multiple beneficial projects involving dual fuel boilers that support the wastewater process. Ms. Torres commented that the new lower 7 ppm limit for natural gas fired boilers will affect the previously mentioned dual fuel units. SCAP has reached out to the San Joaquin Valley Air Pollution Control District (SJVAPCD) and was able to obtain information on one dual fuel unit permitted at 9 ppm, not 7 ppm that is proposed by staff. She also mentioned that rules in SJVAPCD do not prohibit tuning before testing, unlike rules in SCAQMD, and units from the two air districts are not directly comparable. She further expressed concern for the lower limit because it is not practicable to stop their

process in order to switch out the fuel. She requests dual fuel boilers retain the 9 ppm limit when firing on natural gas.

Terry Ahn, representing Orange County Sanitation District, commented that her facility operates three dual fuel units used to heat their digesters during colder months. The three units are primarily fired on natural gas but have the option to switch to natural gas when digester gas quantities are low. She mentioned that these dual fuel units can only use one fuel at a time and cannot burn two fuels at once, which subjects the units to two separate NOx limits: 15 ppm for digester gas and 9 ppm for natural gas. Switching between the two fuels has been a challenge and all three units have been recently retrofitted/replaced. Ms. Ahn also commented that the proposal to lower limits on biogas was introduced late in the rulemaking process. She expressed concern for dual fuel units to meet the new 7 ppm NOx limit when firing only on natural gas and requests that staff conduct a detailed review of actual installations that demonstrate viability of retrofitted dual fuel units to meet a 7 ppm NOx limit when firing only on natural gas. She proposed that the limit for dual fuel units remain at 15 ppm when firing digester gas, and 9 ppm when on natural gas until the 7 ppm technology is fully vetted.

Dr. Philip Fine, Deputy Executive Officer/Planning, Rule Development and Area Sources, acknowledged the challenges faced by publicly owned utilities and stated that staff is strongly considering establishing a sector-specific rule for publicly treatment works and landfills in order to better address the concerns of these stakeholders.

Mayor Pro Tem Mitchell disclosed that she does not have a conflict of interest or financial interest, but is an alternate board member on Los Angeles County Sanitation Districts. Mayor Pro Tem Mitchell agreed with Dr. Fine's approach and believes that publicly owned treatment works facilities that provide essential public service should be looked at separately to better address their challenges. Mayor Pro Tem Mitchell stated that the reductions from the publicly owned treatment works is not that great when considering the cost. She supported staff's concept of removing publicly owned treatment works facilities from the PAR 1146 series and into their own sector specific rule.

Mayor Benoit agreed with Mayor Pro Tem Mitchell, citing cost concerns to landfill facilities that are planned to shut down in a limited amount of time.

Dr. Lyou asked if emission reduction commitments in the 2016 AQMP Control Measure CMB-05 would be met if publicly owned treatment works are removed from the Rule 1146 series. Mr. Goss stated that staff is focused on accounting for and achieving the 12 tons per day reduction commitment from the 2015 RECLAIM amendments and implementing the control measure for the entire RECLAIM program to achieve the additional five tons per day as adopted in the 2016 AQMP.

3. Proposed Rule 1118.1 – Control of Emissions from Non-Refinery Flares

Planning and Rules Manager Michael Krause presented a summary of Proposed Rule 1118.1 – Control of Emissions from Non-Refinery Flares.

Professor Michael Salman, Professor of History at the University of California, Los Angeles (UCLA), commented that the proposed rule is not consistent with the goals of the AQMP to prioritize beneficial use. He requested a rule delay, separating the oil and gas industry from the other categories, and beneficial use prioritized to avoid an expansion in flaring. David Rothbart, representing SCAP, expressed concern about the proposal to require Best Available Control Technology/Lowest Achievable Emission Rate (BACT/LAER) standards for minor sources and mentioned recent research on the potential for NO_x emissions to increase from thermophilic digestion of food waste. He asked for reasonable limits on flares and temporary relief for facilities that accept food waste. Steve Jepsen, Executive Director of SCAP, described recent research presented to staff by Black and Veatch that indicated NO_x emissions would increase as the result of food waste diversion due to ammonia increase in the waste stream. Wastewater treatment plants can accept up to 75 percent of the food waste generated but the current rule proposal would be a barrier to food waste diversion. Edward Filadelfia of the City of Riverside, Terry Ahn of the Orange County Sanitation District, and Marissa Flores-Acosta of the City of San Bernardino also expressed concern that food waste will increase NO_x emissions. Ms. Torres of Eastern Municipal Wastewater District stated that they installed a low-NO_x flare and have experienced issues and frequent breakdowns. Amber Baylor of the South Orange County Wastewater Authority provided a minor source perspective and stated beneficial use projects are more complex and costly due to lower NO_x limits, such as Rule 1110.2 for engines. As a result, the flares must be a reliable backup in the event of equipment failure. Commenters from the Publicly Owned Treatment Works (POTWs) requested that the proposed rule establish a 0.06 pound/MMBtu NO_x limit and exempt any facilities that accept food waste for thermophilic digestion.

Dr. Fine indicated that the concerns raised are all in regard to the installation of a new flare, not on the proposed requirements for existing flares. He requested a few weeks to work with stakeholders on the proposal for new flares. Mr. Krause added that the increased NO_x from food waste is an added concern as it could lead to increased NO_x from wastewater treatment and the proposed capacity threshold for that industry may need revisiting. Mr. Krause stated that the facilities can continue to use their existing flare. Mayor Benoit expressed concerns for facilities that committed to accepting food waste and may need to install additional flares. Mr. Krause pointed out that major sources are already held to the lower NO_x standard. Mayor Pro Tem Mitchell indicated that there are competing policies, especially food diversion commitments under SB 1383 that need to be addressed and asked that staff try to find common ground and lower cost solutions. Dr. Fine committed to working with stakeholders to address concerns with the limits for new flares. Dr. Lyou also

mentioned a company named Newlight Technologies in Newport Beach that turns methane into renewable plastic that he would like staff to evaluate as a potential option for beneficial use.

4. RECLAIM Quarterly Report – 3rd Update

This item was postponed until the November 16, 2018 Stationary Source Committee meeting.

WRITTEN REPORTS

5. Notice of Violation Summary

The report was acknowledged by the Committee.

6. Twelve-month and Three-month Rolling Price of 2017 and 2018 Compliance Years RTCs

The report was acknowledged by the Committee.

OTHER MATTERS:

7. Other Business

There was no other business.

8. Public Comment Period

Erin Donnette, World Energy, provided a brief explanation of World Energy's operations, and expressed support for SCAQMD's air quality goals.

9. Next Meeting Date

The next regular Stationary Source Committee meeting is scheduled for Friday, November 16, 2018.

Adjournment

The meeting was adjourned at 12:02 p.m.

Attachments

1. Attendance Record
2. Notice of Violation Penalty Summary
3. Twelve-month and Three-month Rolling Price of 2017 and 2018 Compliance Years RTCs

ATTACHMENT 1

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
STATIONARY SOURCE COMMITTEE**

Attendance – October 19, 2018

Mayor Ben Benoit (videoconference)	SCAQMD Board Member
Dr. Joseph Lyou.....	SCAQMD Board Member
Mayor Pro Tem Judith Mitchell	SCAQMD Board Member
Supervisor V. Manuel Perez (videoconference).....	SCAQMD Board Member
Supervisor Janice Rutherford (videoconference)	SCAQMD Board Member
Supervisor Hilda Solis (videoconference).....	SCAQMD Board Member
Terry Ahn	Orange County Sanitation District
Amber Baylor	South Orange County Wastewater Authority
Erin Donnette.....	World Energy
Edward Filadelfia	City of Riverside
Marissa Flores-Acosta	San Bernardino Municipal Water District
Florence Gharibian	Del Amo Action Committee
Bobby Gustafson	City of Riverside
Kathy Gleeson	World Energy
Steve Jepsen.....	Southern California Alliance of Publicly Owned Treatment Works (SCAP)
Bill LaMarr	California Small Business Alliance
Daniel McGivney	SoCalGas
Alan Olich	Brite Plating
David Rothbart	SCAP
Michael Salman	University of California, Los Angeles
Alison Torres	Eastern Municipal Water District
Wesley Turnbow	Metal Finishing Association of Southern California
Peter Whittingham.....	Whittingham Public Affairs Advisors
Barbara Baird.....	SCAQMD staff
Marian Coleman	SCAQMD staff
Heather Farr	SCAQMD staff
Philip Fine	SCAQMD staff
Bayron Gilchrist	SCAQMD staff
Tracy Goss.....	SCAQMD staff
Michael Krause.....	SCAQMD staff
Susan Nakamura.....	SCAQMD staff
Wayne Nastro	SCAQMD staff
Laki Tisopulos	SCAQMD staff
Kim White	SCAQMD staff
Jill Whynot	SCAQMD staff

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
General Counsel's Office**

DRAFT

September 2018 Settlement Penalty Report

<u>Total Penalties</u>	
Civil Settlements:	\$293,750.00
Settlements including SEP:	\$40,000.00
MSPAP Settlements:	\$6,475.00
Total Cash Settlements:	\$340,225.00
Total SEP Value:	\$10,000.00
Fiscal Year through 9 / 2018 Cash Total:	\$1,069,392.00
Fiscal Year through 9 / 2018 SEP Value Only Total:	\$10,000.00

Fac ID	Company Name	Rule Number	Settled Date	Init	Notice Nbr	Total Settlement
Civil Settlements						
800030	CHEVRON PRODUCTS CO.	3002	9/14/2018	TRB	P58242	\$160,000.00
800032	CHEVRON USA INC	3002(c)(1) 462(d)(1)(F)	9/13/2018	TRB	P65314	\$10,000.00
19144	CORONET MFG CO INC	3002 3003	9/13/2018	VKT	P64013	\$1,250.00
181082	DAVITA DIALYSIS	203 (a)	9/7/2018	WBW	P56738	\$4,000.00

Fac ID	Company Name	Rule Number	Settled Date	Init	Notice Nbr	Total Settlement
92901	DYNAMIC POWDER COATING	203 (a) 1155	9/11/2018	NSF	P58084 P58089 P60452	\$5,000.00
175388	GRAND GAS, INC.	461 203	9/21/2018	SMP	P63215 P64983	\$6,000.00
100145	HARBOR FUMIGATION INC	3002	9/27/2018	SH	P63555	\$15,000.00
131732	NEWPORT FAB, LLC	2004	9/6/2018	DH	P56342 P56343 P60573	\$40,000.00
131732	NEWPORT FAB, LLC	2004	9/6/2018	DH	P64145	\$2,500.00
97081	THE TERMO COMPANY	1148.1 1173 221 462 2004	9/11/2018	NAS	P37248 P37249 P56994 P56995 P59379 P59381 P59383 P60867 P61526 P62956	\$50,000.00

Total Civil Settlements: \$293,750.00

Fac ID	Company Name	Rule Number	Settled Date	Init	Notice Nbr	Total Settlement
Settlements including SEP						
14364	CHEMICAL LIME CO	1155	9/19/2018	MJR	P61806	\$40,000.00
	<i>SEP \$10,000 - Facility to purchase equipment by</i>	203				
	<i>November 1, 2018</i>	401				

Total Settlements including SEP: \$40,000

Fac ID	Company Name	Rule Number	Settled Date	Init	Notice Nbr	Total Settlement
MSPAP Settlements						
167320	ANABI OIL CORP. DBA C-MINI MART, INC.	461(c)(3)(Q)	9/26/2018	GC	P70560	\$600.00
184713	EQUITY RESIDENTIAL (HESBY)	203	9/11/2018	GC	P65152	\$200.00
183372	H & M INC DBA ARCO OF FULLERTON	461	9/11/2018	GC	P64982	\$650.00
800428	LAMPS PLUS INC/ PACIFIC COAST LIGHTING	3002(c)(1)	9/27/2018	TF	P66764	\$500.00
179343	MOTORS PETROLEUM INC	461	9/27/2018	TF	P66351	\$850.00
121344	NO. ORANGE CTY COMMUNITY COLLEGE DIST.	461(c)(3)(Q)	9/27/2018	TF	P71028	\$200.00
34300	PIERCE BROTHERS INC. - SCI CALIF FUNERALS	201 203 (a)	9/27/2018	TF	P68201	\$1,600.00
186766	RANCHO CALIFORNIA LANDSCAPING, INC.	203	9/27/2018	TF	P67653	\$800.00
160732	THRIFTY TREE SERVICE INC	PERP 2460	9/27/2018	TF	P66754	\$275.00
123861	VERIZON WIRELESS, JOHNSTONE PEAK	203 (a)	9/27/2018	TF	P65381	\$800.00

Total MSPAP Settlements: \$6,475.00

**DISTRICT'S RULES AND REGULATIONS INDEX
FOR SEPTEMBER 2018 PENALTY REPORT**

REGULATION II - PERMITS

Rule 201 Permit to Construct
Rule 203 Permit to Operate
Rule 221 Plans

REGULATION IV - PROHIBITIONS

Rule 401 Visible Emissions
Rule 461 Gasoline Transfer and Dispensing
Rule 462 Organic Liquid Loading

REGULATION XI - SOURCE SPECIFIC STANDARDS

Rule 1148.1 Oil and Gas Production Wells
Rule 1155 Particulate Matter Control Devices
Rule 1173 Fugitive Emissions of Volatile Organic Compounds

REGULATION XX - REGIONAL CLEAN AIR INCENTIVES MARKET (RECLAIM)

Rule 2004 Requirements

REGULATION XXX - TITLE V PERMITS

Rule 3002 Requirements
Rule 3003 Applications

CALIFORNIA CODE OF REGULATIONS

13 CCR 2460 Portable Equipment Testing Requirements



South Coast Air Quality Management District

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Twelve-Month and Three-Month Rolling Average Price of Compliance Years 2017 and 2018 NOx and SOx RTCs

October 2018 Quarterly Report to Stationary Source Committee

Table I

Twelve-Month Rolling Average Price Data for Compliance Year 2017 NOx RTCs
(Report to Governing Board if rolling average price greater than \$22,500/ton)

Twelve-Month Rolling Average Price Data for Compliance Year 2017 NOx RTC					
Reporting Month	12-Month Period	Total Volume Traded with Price During Past 12-month (tons)	Total Price of Volume Traded During Past 12-month (\$)	Number of Trades with Price	Rolling Average Price ¹ (\$/ton)
Jan-17	Jan-16 to Dec-16	69.7	\$460,621	9	\$6,606
Feb-17	Feb-16 to Jan-17	94.7	\$610,693	11	\$6,446
Mar-17	Mar-16 to Feb-17	82.2	\$573,193	10	\$6,970
Apr-17	Apr-16 to Mar-17	125.3	\$824,493	12	\$6,581
May-17	May-16 to Apr-17	113.8	\$741,828	15	\$6,519
Jun-17	Jun-16 to May-17	113.8	\$741,828	15	\$6,519
Jul-17	Jul-16 to Jun-17	134.4	\$867,079	22	\$6,450
Aug-17	Aug-16 to Jul-17	144.8	\$920,041	29	\$6,355
Sep-17	Sep-16 to Aug-17	150.4	\$955,120	35	\$6,351
Oct-17	Oct-16 to Sep-17	151.2	\$956,005	36	\$6,323
Nov-17	Nov-16 to Oct-17	252.8	\$1,345,772	55	\$5,324
Dec-17	Dec-16 to Nov-17	267.1	\$1,376,674	58	\$5,155
Jan-18	Jan-17 to Dec-17	305.1	\$1,276,006	57	\$4,182
Feb-18	Feb-17 to Jan-18	693.2	\$1,888,755	94	\$2,724
Mar-18	Mar-17 to Feb-18	743.6	\$1,991,269	111	\$2,678
Apr-18	Apr-17 to Mar-18	705.6	\$1,746,469	110	\$2,475
May-18	May-17 to Apr-18	766.5	\$1,993,214	127	\$2,600
Jun-18	Jun-17 to May-18	778.0	\$2,050,015	129	\$2,635
Jul-18	Jul-17 to Jun-18	826.8	\$2,091,914	128	\$2,530
Aug-18	Aug-17 to Jul 18	875.7	\$2,143,688	138	\$2,448

Twelve-Month Rolling Average Price Data for Compliance Year 2017 NOx RTC					
Reporting Month	12-Month Period	Total Volume Traded with Price During Past 12-month (tons)	Total Price of Volume Traded During Past 12-month (\$)	Number of Trades with Price	Rolling Average Price ¹ (\$/ton)
Sep-18	Sep-17 to Aug-18	1,195.3	\$2,508,784	159	\$2,099
Oct-18	Oct-17 to Sep-18	Compliance Year 2017 RTCs can no longer be traded after August 2018			

1. District Rule 2015(b)(6) - Backstop Provisions provides additional "evaluation and review of the compliance and enforcement aspects of the RECLAIM program" if the average RTC price exceeds \$15,000 per ton.

Table II

Twelve-Month Rolling Average Price Data for Compliance Year 2018 NOx RTCs
(Report to Governing Board if rolling average price greater than \$22,500/ton)

Twelve-Month Rolling Average Price Data for Compliance Year 2018 NOx RTC					
Reporting Month	12-Month Period	Total Volume Traded with Price During Past 12-month (tons)	Total Price of Volume Traded During Past 12-month (\$)	Number of Trades with Price	Rolling Average Price ¹ (\$/ton)
Jan-18	Jan-17 to Dec-17	91.6	\$974,592	3	\$10,639
Feb-18	Feb-17 to Jan-18	91.6	\$974,592	3	\$10,639
Mar-18	Mar-17 to Feb-18	100.7	\$1,041,091	4	\$10,337
Apr-18	Apr-17 to Mar-18	51.6	\$497,246	5	\$9,643
May-18	May-17 to Apr-18	56.6	\$527,075	8	\$9,320
Jun-18	Jun-17 to May-18	53.1	\$502,575	7	\$9,473
Jul-18	Jul-17 to Jun-18	72.6	\$625,883	14	\$8,618
Aug-18	Aug-17 to Jul 18	80.0	\$660,279	19	\$8,251
Sep-18	Sep-17 to Aug-18	86.8	\$698,621	28	\$8,050
Oct-18	Oct-17 to Sep-18	104.3	\$759,871	29	\$7,287

1. District Rule 2015(b)(6) - Backstop Provisions provides additional "evaluation and review of the compliance and enforcement aspects of the RECLAIM program" if the average RTC price exceeds \$15,000 per ton.

Table III

Three-Month Rolling Average Price Data for Compliance Year 2017 NOx RTCs
 (Report to Governing Board if rolling average price greater than \$35,000/ton)

Three-Month Rolling Average Price Data for Compliance Year 2017 NOx RTC					
Reporting Month	3-Month Period	Total Volume Traded with Price During Past 3-month (tons)	Total Price of Volume Traded During Past 3-month (\$)	Number of Trades with Price	Rolling Average Price (\$/ton)
Jan-17	Oct-16 to Dec-16	41.1	\$310,586	6	\$7,561
Feb-17	Nov-16 to Jan-17	66.1	\$460,658	8	\$6,971
Mar-17	Dec-16 to Feb-17	65.0	\$452,221	7	\$6,962
Apr-17	Jan-17 to Mar-17	68.1	\$401,372	4	\$5,897
May-17	Feb-17 to Apr-17	46.6	\$272,479	6	\$5,847
Jun-17	Mar-17 to May-17	46.6	\$272,479	6	\$5,847
Jul-17	Apr-17 to Jun-17	24.2	\$146,430	11	\$6,051
Aug-17	May-17 to Jul-17	31.0	\$178,213	14	\$5,753
Sep-17	Jun-17 to Aug-17	36.6	\$213,292	20	\$5,828
Oct-17	Jul-17 to Sep-17	17.9	\$97,616	15	\$5,468
Nov-17	Aug-17 to Oct-17	109.1	\$434,421	27	\$3,981
Dec-17	Sep-17 to Nov-17	118.9	\$438,682	25	\$3,689
Jan-18	Oct-17 to Dec-17	195.0	\$630,587	27	\$3,233
Feb-18	Nov-17 to Jan-18	506.5	\$1,003,641	47	\$1,981
Mar-18	Dec-17 to Feb-18	541.5	\$1,066,815	60	\$1,970
Apr-18	Jan-18 to Mar-18	468.5	\$871,835	57	\$1,861
May-18	Feb-18 to Apr-18	119.8	\$376,939	39	\$3,145
Jun-18	Mar-18 to May-18	81.0	\$331,226	24	\$4,092
Jul-18	Apr-18 to Jun-18	145.5	\$491,876	29	\$3,382
Aug-18	May-18 to Jul-18	140.1	\$328,687	25	\$2,345
Sep-18	Jun-18 to Aug-18	453.9	\$672,061	50	\$1,481
Oct-18	Jul-18 to Sep-18	Compliance Year 2017 RTCs can no longer be traded after August 2018			

Table IV

Three-Month Rolling Average Price Data for Compliance Year 2018 NOx RTCs
(Report to Governing Board if rolling average price greater than \$35,000/ton)

Three-Month Rolling Average Price Data for Compliance Year 2018 NOx RTC					
Reporting Month	3-Month Period	Total Volume Traded with Price During Past 3-month (tons)	Total Price of Volume Traded During Past 3-month (\$)	Number of Trades with Price	Rolling Average Price (\$/ton)
Jan-18	Oct-17 to Dec-17	38.1	\$400,092	1	\$10,500
Feb-18	Nov-17 to Jan-18	38.1	\$400,092	1	\$10,500
Mar-18	Dec-17 to Feb-18	9.1	\$66,499	1	\$7,300
Apr-18	Jan-18 to Mar-18	10.0	\$72,654	3	\$7,295
May-18	Feb-18 to Apr-18	15.0	\$102,483	6	\$6,855
Jun-18	Mar-18 to May-18	5.8	\$35,984	5	\$6,160
Jul-18	Apr-18 to Jun-18	24.6	\$153,137	10	\$6,235
Aug-18	May-18 to Jul-18	27.0	\$157,704	12	\$5,848
Sep-18	Jun-18 to Aug-18	33.7	\$196,046	21	\$5,813
Oct-18	Jul-18 to Sep-18	31.7	\$133,988	15	\$4,233

Table V

Twelve-Month Rolling Average Price Data for Infinite-Year Block NOx RTCs
 (Report to Governing Board if rolling average price after 2018 is less than \$200,000/ton)

Twelve-Month Rolling Average Price Data for Infinite-Year Block NOx RTC					
Reporting Month	12-Month Period	Total Volume Traded with Price During Past 12-month (tons)	Total Price of Volume Traded During Past 12-month (\$)	Number of Trades with Price	Rolling Average Price (\$/ton)
May-16	May-15 to Apr-16	805.1	\$215,694,953	44	\$267,913
Jun-16	Jun-15 to May-16	781.6	\$211,669,953	44	\$270,819
Jul-16	Jul-15 to Jun-16	351.5	\$128,539,029	31	\$365,654
Aug-16	Aug-15 to Jul-16	512.9	\$166,663,599	32	\$324,943
Sep-16	Sep-15 to Aug-16	517.7	\$167,951,099	32	\$324,449
Oct-16	Oct-15 to Sep-16	441.9	\$150,586,981	30	\$340,759
Nov-16	Nov-15 to Oct-16	321.9	\$121,239,854	25	\$376,628
Dec-16	Dec-15 to Nov-16	321.9	\$121,238,354	24	\$376,638
Jan-17	Jan-16 to Dec-16	301.9	\$114,731,605	20	\$380,057
Feb-17	Feb-16 to Jan-17	183.0	\$46,520,577	10	\$254,172
Mar-17	Mar-16 to Feb-17	174.3	\$41,738,077	7	\$239,491
Apr-17	Apr-16 to Mar-17	174.3	\$41,738,077	7	\$239,491
May-17	May-16 to Apr-17	176.8	\$42,113,977	8	\$238,223
Jun-17	Jun-16 to May-17	175.3	\$41,588,977	7	\$237,266
Jul-17	Jul-16 to Jun-17	172.2	\$40,437,201	6	\$234,802
Aug-17	Aug-16 to Jul-17	10.8	\$2,311,624	4	\$213,249
Sep-17	Sep-16 to Aug-17	4.1	\$624,124	3	\$152,598
Oct-17	Oct-16 to Sep-17	4.1	\$624,124	3	\$152,598
Nov-17	Nov-16 to Oct-17	4.1	\$624,124	3	\$152,598
Dec-17	Dec-16 to Nov-17	4.1	\$624,124	3	\$152,598
Jan-18	Jan-17 to Dec-17	31.8	\$1,262,801	6	\$39,673
Feb-18	Feb-17 to Jan-18	58.8	\$1,579,801	9	\$26,853
Mar-18	Mar-17 to Feb-18	58.8	\$1,579,801	9	\$26,853
Apr-18	Apr-17 to Mar-18	58.8	\$1,579,801	9	\$26,853
May-18	May-17 to Apr-18	56.3	\$1,203,901	8	\$21,374
Jun-18	Jun-17 to May-18	57.8	\$1,233,901	9	\$21,339
Jul-18	Jul-17 to Jun-18	56.7	\$1,140,677	8	\$20,103
Aug-18	Aug-17 to Jul 18	56.7	\$1,140,677	8	\$20,103
Sep-18	Sep-17 to Aug-18	56.7	\$1,140,677	8	\$20,103
Oct-18	Oct-17 to Sep-18	56.7	\$1,140,677	8	\$20,103

Table VI

Twelve-Month Rolling Average Price Data for Compliance Year 2017 SOx RTCs
(Report to Governing Board if rolling average price greater than \$50,000/ton)

Twelve-Month Rolling Average Price Data for Compliance Year 2017 SOx RTC					
Reporting Month	12-Month Period	Total Volume Traded with Price During Past 12-month (tons)	Total Price of Volume Traded During Past 12-month (\$)	Number of Trades with Price	Rolling Average Price¹ (\$/ton)
Jan-17	Jan-16 to Dec-16	0	0	0	-
Feb-17	Feb-16 to Jan-17	0	0	0	-
Mar-17	Mar-16 to Feb-17	0	0	0	-
Apr-17	Jan-17 to Mar-17	0	0	0	-
May-17	May-16 to Apr-17	0	0	0	-
Jun-17	Jun-16 to May-17	0	0	0	-
Jul-17	Jul-16 to Jun-17	0	0	0	-
Aug-17	Aug-16 to Jul-17	4.0	\$4,400	1	\$1,100
Sep-17	Sep-16 to Aug-17	14.0	\$19,400	2	\$1,386
Oct-17	Oct-16 to Sep-17	14.0	\$19,400	2	\$1,386
Nov-17	Nov-16 to Oct-17	14.0	\$19,400	2	\$1,386
Dec-17	Dec-16 to Nov-17	14.0	\$19,400	2	\$1,386
Jan-18	Jan-17 to Dec-17	14.0	\$19,400	2	\$1,386
Feb-18	Feb-17 to Jan-18	57.0	\$58,742	7	\$1,030
Mar-18	Mar-17 to Feb-18	57.0	\$58,742	7	\$1,030
Apr-18	Apr-17 to Mar-18	57.0	\$58,742	7	\$1,030
May-18	May-17 to Apr-18	57.0	\$58,742	7	\$1,030
Jun-18	Jun-17 to May-18	120.2	\$102,965	10	\$857
Jul-18	Jul-17 to Jun-18	120.2	\$102,965	10	\$857
Aug-18	Aug-17 to Jul 18	117.5	\$99,463	10	\$847
Sep-18	Sep-17 to Aug-18	107.8	\$84,686	10	\$786
Oct-18	Oct-17 to Sep-18	Compliance Year 2017 RTCs can no longer be traded after August 2018			

1. District Rule 2015(b)(6) - Backstop Provisions provides additional "evaluation and review of the compliance and enforcement aspects of the RECLAIM program" if the average RTC price exceeds \$15,000 per ton.

Table VII

Twelve-Month Rolling Average Price Data for Compliance Year 2018 SOx RTCs
 (Report to Governing Board if rolling average price greater than \$50,000/ton)

Twelve-Month Rolling Average Price Data for Compliance Year 2018 SOx RTC					
Reporting Month	12-Month Period	Total Volume Traded with Price During Past 12-month (tons)	Total Price of Volume Traded During Past 12-month (\$)	Number of Trades with Price	Rolling Average Price¹ (\$/ton)
Jan-18	Jan-17 to Dec-17	None	-	-	-
Feb-18	Feb-17 to Jan-18	None	-	-	-
Mar-18	Mar-17 to Feb-18	None	-	-	-
Apr-18	Apr-17 to Mar-18	None	-	-	-
May-18	May-17 to Apr-18	None	-	-	-
Jun-18	Jun-17 to May-18	34.2	\$23,974	3	\$700
Jul-18	Jul-17 to Jun-18	34.2	\$23,974	3	\$700
Aug-18	Aug-17 to Jul 18	80.2	\$57,354	5	\$715
Sep-18	Sep-17 to Aug-18	95.2	\$67,854	6	\$713
Oct-18	Oct-17 to Sep-18	163.3	\$135,429	10	\$829

1. District Rule 2015(b)(6) - Backstop Provisions provides additional "evaluation and review of the compliance and enforcement aspects of the RECLAIM program" if the average RTC price exceeds \$15,000 per ton.

[↑ Back to Agenda](#)

BOARD MEETING DATE: November 2, 2018

AGENDA NO. 24

REPORT: Technology Committee

SYNOPSIS: The Technology Committee held a meeting on Friday, October 19, 2018. The following is a summary of the meeting.

RECOMMENDED ACTION:
Receive and file.

Joe Buscaino, Chair
Technology Committee

MMM:pmk

Committee Members

Present: Council Member Joe Buscaino/Chair (videoconference)
Mayor Pro Tem Judith Mitchell
Supervisor V. Manuel Perez (videoconference/arrived at 12:12 p.m.)
Council Member Dwight Robinson
Supervisor Hilda L. Solis (videoconference)

Absent: Mayor Larry McCallon

Call to Order

Chair Buscaino called the meeting to order at 12:08 pm.

ACTION ITEMS:

1. Execute Contract for Expansion of Hydrogen Fueling Station

The University of California Irvine (UCI) has requested cofunding for the expansion of its hydrogen fueling station to add additional capacity including more fueling positions to serve the increasing number of fuel cell cars and buses utilizing the station. The MSRC has approved \$1 million in cost-share and the CEC is considering providing \$400,000 in cost-share for this \$1.8 million project. This action is to execute a contract with UCI for expansion of their hydrogen fueling station in an amount not to exceed \$400,000 from the Clean Fuels Program Fund (31).

Supervisor Perez arrived at 12:12 pm.

Moved by Robinson; seconded by Mitchell; unanimously approved.

Ayes: Buscaino, Mitchell, Perez, Robinson and Solis

Noes: None

Absent: McCallon

2. Adopt Resolution Recognizing Funds for FY 2017-18 Carl Moyer State Reserve Program, Execute Contracts for FY 2017-18 “Year 20” Carl Moyer Program, SOON Provision and Community Air Protection AB 134 Program, Amend Awards and Transfer Funds

In June 2018, Program Announcements for the “Year 20” Carl Moyer Program and SOON Provision closed. This year, in addition to the traditional sources of Carl Moyer SB 1107 and AB 923 funds, funding from the Community Air Protection AB 134, State Reserve, FARMER and Voluntary NOx Remediation Measure Programs can also be used to fund Carl Moyer and SOON Provision projects. This action is to adopt a Resolution recognizing up to \$3.1 million in Carl Moyer State Reserve funds from CARB with its terms and conditions for FY 2017-18. These actions are to also execute contracts for the “Year 20” Carl Moyer, SOON Provision and Community Air Protection AB 134 Programs totaling \$63,541,435, comprising \$35,559,645 from the Carl Moyer Program Fund (32) and \$27,981,790 from the Community Air Protection AB 134 Fund (77). These actions are to also amend two “Year 19” Carl Moyer awards, adding \$117,754 from the Carl Moyer Program SB 1107 Fund (32), and transfer \$2 million from the Carl Moyer Program AB 923 Fund (80) to the Voucher Incentive Program Fund (59) for truck replacements.

Council Member Buscaino recused himself due to a campaign contribution from Clean Energy within the past 12 months. He then deferred to Mayor Pro Tem Mitchell to chair the meeting for Item #2. Supervisor Perez recused himself due to a campaign contribution from CR&R, Inc., within the past 12 months. Council Member Robinson recused himself due to a financial interest in Burlington Northern Santa Fe Railway (BNSF). Supervisor Solis disclosed that she has no financial interest, but is required to identify for the record that she serves on the Board of Supervisors for Los Angeles County, which is involved in this item. Mayor Pro Tem Mitchell stated that she does not have a financial interest, but is required to identify for the record that she is a Board Member of CARB, which is involved in this item.

With less than a quorum voting (Mitchell, Solis), the Committee communicated their concurrence to move the item directly to the Board for consideration.

3. Establish Special Revenue Fund, Recognize Revenue, Execute Agreements for Volkswagen Environmental Mitigation Program and Transfer Funds

On May 25, 2018, CARB approved the Beneficiary Mitigation Plan for the Volkswagen (VW) Environmental Mitigation Trust. This plan identifies five funding categories for the State’s \$423 million allocation of the VW Environmental Mitigation

Trust. The funded projects are intended to mitigate the excess NOx emissions caused by the VW vehicles. SCAQMD has been identified by CARB as the administrator of two project funding categories—the Zero Emissions Class 8 Freight and Port Drayage Trucks and the Combustion Freight and Marine Projects. These actions are to establish the VW Mitigation Special Revenue Fund (79), recognize revenue up to \$150 million into this special revenue fund, execute an agreement with CARB to administer and implement the two project funding categories, execute a Memorandum(s) of Agreement with other air districts, as needed, to assist in administering this program, and transfer funds from the VW Mitigation Special Revenue Fund (79) to the General Fund to reimburse administrative costs associated with the program.

Mayor Pro Tem Mitchell commented that she does not have a financial interest, but is required to identify for the record that she is a Board Member of CARB which is involved in this item.

Supervisor Solis inquired about increasing funds for light-duty electric vehicle chargers, especially additional incentives for low income and underrepresented communities. Executive Officer Wayne Nastri commented that the funding allocations for this program have already been negotiated by CARB, U.S. EPA and Volkswagen, and that these allocations are set. Staff added that through the Replace Your Ride Program, SCAQMD offers incentives for installing EV chargers with the purchase of a plug-in electric vehicle and will continue to look for other opportunities to install infrastructure in the communities referenced.

Mayor Pro Tem Mitchell further added that another part of the VW Settlement under the Electrify America Program also provides funding for electric vehicle supply equipment (EVSE). Information on funding Cycle 2 of the ZEV Investment Plan for California may be found at the following link:
https://www.arb.ca.gov/msprog/vw_info/vsi/vw-zevinvest/documents/c2zevplan_100318.pdf .

Council Member Robinson inquired about proportion of funding to SCAQMD relative to other air districts. Mayor Pro Tem Mitchell explained that the funds assigned to each air district will be made available to entities throughout the state and are not limited to the air district to which they were assigned. She further commented that she and staff believe funds allocated to the combustion category, which includes optional low NOx trucks, is too low. Mr. Nastri indicated that CARB agreed to consider transferring any unspent funds to another category based on demand and other factors; so, there may be an opportunity to get more funding for the combustion category.

Supervisor Perez is also interested in helping underserved areas and requested a separate briefing to understand the different sources of funds, especially for public transportation agencies such as SunLine Transit.

Moved by Perez; seconded by Mitchell; unanimously approved.

Ayes: Buscaino, Mitchell, Perez, Robinson and Solis

Noes: None

Absent: McCallon

4. Develop and Demonstrate Zero Emissions Heavy-Duty Trucks, Freight Handling Equipment, EV Infrastructure and Renewable Energy

SCAQMD received an award of \$44,839,686 to develop and demonstrate zero emissions heavy-duty trucks, freight handling equipment, EV infrastructure and renewable energy under CARB's Low Carbon Transportation Greenhouse Gas Reduction Fund (GGRF) Investments. Volvo Group North America and its project partners are providing \$41,855,308. These actions are to recognize \$44,839,686 and transfer \$14,000,000 (\$4,000,000 for SCAQMD's project cost-share and \$10,000,000 for temporary advance of funds) from the Clean Fuels Program Fund (31) into the GHG Reduction Projects Special Revenue Fund (67). This action is to also execute contracts in an amount not to exceed \$46,688,250 to implement this project. Out of the \$2,151,436 allocated in CARB's grant for administrative expenses, these actions are to reimburse the General Fund up to \$1,972,936 from Fund 67 for administrative costs and transfer \$178,500 from Fund 67 to Fund 31 to execute a contract modification for administrative project implementation support. Finally, these actions are to authorize the Executive Officer to execute a contract modification and redistribute administrative funds to augment project funds on an as-needed basis.

Mayor Pro Tem Mitchell commented that she does not have a financial interest, but is required to identify for the record that she is a Board Member of CARB which is involved in this item.

Supervisor Solis asked staff to elaborate about SCE's Make Ready Project Funds. Staff explained that SCE may be able to provide funding of \$600K to \$1M towards EV Infrastructure as part of their CPUC application. Supervisor Solis asked if this project or future projects could consider the city of Commerce. Staff clarified that the Volvo project will not directly affect the city of Commerce, but staff will continue to identify future projects that can include the city of Commerce.

Supervisor Perez asked if the Volvo project would directly or indirectly benefit the Coachella Valley. Staff replied there would be indirect benefits since the commercialization of these technologies will eventually serve the entire region. Council Member Robinson asked if cargo weights were taken into consideration in the project, as even the 12L NZ engine appears to be underpowered for long haul at full cargo weight. Staff responded that cargo weights and duty cycles are considered for technologies such as electric and fuel cells. Fuel cells seem to be better suited for the longer haul and maximum loads, and staff is working on larger (13-15L) liquid fueled engines for long-haul operations.

Moved by Mitchell; seconded by Robinson; unanimously approved.

Ayes: Buscaino, Mitchell, Perez, Robinson and Solis

Noes: None

Absent: McCallon

5. Approve Awards for Heavy-Duty Diesel Drayage Truck Replacement Projects

May 2015, the Board declared the existing CNG fueling station equipment at SCAQMD headquarters as surplus and authorized execution of a property usage agreement and contract with FirstCNG, LLC, (Titan Diamond Bar) to upgrade the fast-fill CNG fueling station at SCAQMD and operate and maintain the station for five years. Over the past three years there has been a series of company name changes to the CNG station and now American CNG Energy proposes to assume ownership of the station under an assignment provision in the contract. This action is to approve assignment to, and execute a contract with, American CNG Energy to upgrade the fast-fill CNG fueling station at SCAQMD headquarters and operate and maintain the station for five years.

Moved by Robinson; seconded by Solis; unanimously approved.

Ayes: Buscaino, Mitchell, Perez, Robinson and Solis

Noes: None

Absent: McCallon

6. Recognize Revenue and Execute Agreements for Installation and Maintenance of Air Filtration Systems

SCAQMD has executed a settlement agreement with Rainbow Transfer/Recycling, Inc., to install and maintain air filtration systems at schools. This action is to recognize up to \$250,000 into the Air Filtration Fund (75). These actions are to also execute a contract to install and maintain air filtration systems at schools in an amount not to exceed \$250,000 from the Air Filtration Fund (75) and execute an agreement with the local school district in Huntington Beach near the transfer facility.

Supervisor Solis left the meeting at 1:03 pm.

Moved by Robinson; seconded by Mitchell; unanimously approved.

Ayes: Buscaino, Mitchell, Perez and Robinson

Noes: None

Absent: McCallon and Solis

WRITTEN REPORT

7. Clean Fuels Program Draft 2018 Plan Update

Every fall, staff has brought the Clean Fuels Program Draft Plan Update before the Board Technology Committee to solicit input on the proposed distribution of potential project funds for the upcoming year before requesting final approval for the Plan Update each year in early spring. Staff proposes continued support for a wide portfolio of technologies, but with particular emphasis on heavy duty truck technologies with zero and near-zero emissions for goods movement applications to create a pathway towards achieving 2023 attainment as well as a continued focus on preparing for hydrogen vehicle deployments and EV charging infrastructure. This item was presented at the October 19, 2018 Technology Committee as a written report.

Based on a query by Council Member Robinson, staff explained that the Engine System category includes funding for the development, demonstration and certification of engines in the 6-7L and larger 13-15L displacement, in an effort to provide solutions for smaller and long-haul trucks that cannot utilize the currently certified 8.9L and 12L near-zero engines.

Mayor Pro Tem Mitchell inquired if Clean Fuels Funds could be used for incentive programs. Staff responded that these funds can be used for early commercial deployments, such as beta test engines.

OTHER MATTERS:

8. Other Business

There was no other business.

9. Public Comment Period

Erin Donnette of World Energy, which recently purchased the AltAir bio refinery in Paramount, invited everyone to attend a press event on October 24.

10. Next Meeting Date

The next regular Technology Committee meeting is scheduled for Friday, November 16, 2018 at noon.

Adjournment

The meeting adjourned at 1:15 p.m.

Attachment

Attendance Record

ATTACHMENT

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
TECHNOLOGY COMMITTEE MEETING
Attendance Record –October 19, 2018**

Council Member Joe Buscaino (videoconference)	SCAQMD Board Member
Mayor Pro Tem Judith Mitchell	SCAQMD Board Member
Supervisor V. Manuel Perez (videoconference)	SCAQMD Board Member
Council Member Dwight Robinson	SCAQMD Board Member
Supervisor Hilda L. Solis (videoconference).....	SCAQMD Board Member
Mark Abramowitz	Board Consultant (Lyou)
Buford Crites	Board Consultant (Perez)
David Czamanske.....	Board Consultant (Cacciotti)
Ron Ketcham.....	Board Consultant (McCallon)
Drew Delaney.....	Associates Environmental
Erin Donnette	World Survey
Kathy Gleeson.....	World Survey
Ryan Fouse.....	Sukut Equipment
Daniel McGivney	SoCalGas
Naveen Berry	SCAQMD Staff
Jennifer De la Loza.....	SCAQMD Staff
Bay Gilchrist	SCAQMD Staff
Drue Hargis.....	SCAQMD Staff
Joseph Impullitti.....	SCAQMD Staff
Pat Krayser.....	SCAQMD Staff
Patricia Kwon.....	SCAQMD Staff
Fred Minassian	SCAQMD Staff
Lisa Mirisola	SCAQMD Staff
Matt Miyasato	SCAQMD Staff
Wayne Nastri.....	SCAQMD Staff
Adewale Oshinuga	SCAQMD Staff
Walter Shen.....	SCAQMD Staff
Veronica Sosa.....	SCAQMD Staff
Veera Tyagi.....	SCAQMD Staff
Mei Wang.....	SCAQMD Staff
Vicki White	SCAQMD Staff
Jill Whynot.....	SCAQMD Staff
Paul Wright	SCAQMD Staff

BOARD MEETING DATE: November 2, 2018

AGENDA NO. 25

REPORT: Mobile Source Air Pollution Reduction Review Committee

SYNOPSIS: The MSRC conducted its annual Retreat with its Technical Advisory Committee on Tuesday, October 23, 2018 at the South Coast Air Quality Management District Headquarters in Diamond Bar. The Retreat, which included regular meeting business items, was to initiate development of the two-year FYs 2018-20 Work Program. The MSRC's next meeting is currently scheduled for Thursday, November 15, 2018, at 2:00 p.m., in Conference Room CC8.

RECOMMENDED ACTION:
Receive and file.

Naveen Berry
SCAQMD Liaison to MSRC

MMM:NB:psc

Joint MSRC & MSRC-TAC Annual Retreat

On October 23, 2018, the MSRC conducted its annual Retreat with its technical Advisory Committee to initiate development of its upcoming FYs 2018-20 AB 2766 Discretionary Fund Work Program, for which an estimated \$46.5 million will be available for projects. A few highlights from the Retreat include the following:

SCAQMD, CARB, and CEC discussed air quality issues and priorities. SCAG provided the MSRC an update on its agency's activities and priorities in relation to the MSRC's goals and mission. MSRC staff provided a historical look at how the MSRC Work Programs have evolved and the air quality benefits that have been realized.

FYs 2014-16 Programmatic Outreach Services

The Better World Group (BWG) currently provides the MSRC with programmatic outreach assistance under Contract #MS16030, which will expire on December 31, 2019. BWG recently informed MSRC staff that their owner and CEO will be retiring at the end of 2018. On or before January 1, 2019, BWG will become a new legal entity named Better World Group Advisors, Inc. (BWGA) and have new co-owners. With the exception of the current owner, the same BWG staff would continue to provide service

to the MSRC. Given the current contract termination date, it is anticipated that the regular process of re-competing MSRC's programmatic outreach function will be initiated around the second quarter of 2019. In order to minimize any interruption in programmatic outreach, MSRC and SCAQMD Legal staff recommend execution of a novation agreement. There would be no change to the contract value, tasks or term. The MSRC considered and approved a modification to novate the contract to Better World Group Advisors, Inc. This contract modification will be considered by the SCAQMD Board at its November 5, 2018 meeting.

FYs 2016-18 Local Government Partnership Program

The MSRC approved the release of Local Government Partnership PON2018-01 under the FYs 2016-18 Work Program. The Invitation to Negotiate (ITN), with a targeted funding level of \$21,180,650, focuses on providing funds for projects to support SCAQMD's 2016 AQMP. Cities and counties which have opted into the AB 2766 motor vehicle registration surcharge fee program are eligible to participate. The majority of participants would be allocated maximum funding equivalent to their annual AB 2766 Subvention Fund allocation; however, those whose annual Subvention Fund allocation is less than \$50,000 would be eligible to receive a maximum of \$50,000, and the maximum allocation for any single city or county would be \$3,000,000. MSRC funding could be used for light-duty zero emission vehicle purchases and leases, medium- and heavy-duty zero emission vehicle purchases, near-zero emission heavy-duty alternative fuel vehicle purchases and repower, electric vehicle charging station installation, and construction or expansion of alternative fuel refueling infrastructure, subject to match funding requirements as outlined in the ITN. Additionally, those jurisdictions eligible for a maximum contribution of \$50,000 would have the option to pursue traffic signal synchronization, bicycle active transportation, and first mile/last mile strategies. The ITN includes an open application period commencing with its release on September 1, 2017, and closing August 2, 2018. The MSRC previously approved awards totaling \$15,997,747 in response to this solicitation. The MSRC approved two additional awards totaling \$337,108 as part of the FYs 2016-18 Work Program, as follows:

- a. A contract with the City of Coachella in an amount not to exceed \$58,020 to install at least two electric vehicle charging stations; and
- b. A contract with the City of San Bernardino in an amount not to exceed \$279,088 to procure up to two medium-duty and up to three heavy-duty zero-emission vehicles and install at least three electric vehicle charging stations.

These contract awards will be considered by the SCAQMD Board at its November 5, 2018 meeting.

Contract Modification Requests

The MSRC considered four contract modification requests and took the following actions:

1. For Cathedral City, Contract #ML14072, which provides \$136,000 to purchase vehicles, install electric vehicle charging and bike racks and conduct bicycle education campaign, authorize a 18-month term extension, as well as a reduced scope to eliminate tasks and funding associated with the purchase of medium- and heavy-duty CNG vehicles;
2. For Long Beach Transit # MS16121, which provides \$600,000 to purchase 40 near-zero CNG vehicles, authorize a term extension until November 30, 2026 to complete the work and meet the five-year operational requirements, as well as modifying the scope to repower 39 vehicles and purchase 1 vehicle because they were able to utilize another funding source for the other bus purchases;
3. For San Bernardino County Transportation Authority (SBCTA), Contract #MS16091, which provides \$1,000,000 for signal synchronization upgrades, authorize a 14-month term extension due to longer than expected time necessary for data collection, corridor re-timing efforts and coordination with sixteen local jurisdictions and change the contractor name from San Bernardino Associated Governments to SBCTA; and
4. For Capistrano Unified School District, awarded \$116,000 for expansion of a limited access CNG station, authorize a modified project description to expand the station and train technicians, with no change to the award amount.

Contracts Administrator's Report

The MSRC's AB 2766 Contracts Administrator provides a written status report on all open contracts from FY 2004-05 through the present. The Contracts Administrator's Report for August 30 through September 26, 2018 is attached (*Attachment 1*) for your information.

Attachment

Attachment 1 – October 2018 Contracts Administrator's Report

MSRC Agenda Item No. 1

DATE: October 23, 2018

FROM: Cynthia Ravenstein

SUBJECT: AB 2766 Contracts Administrator's Report

SYNOPSIS: This report covers key issues addressed by MSRC staff, status of open contracts, and administrative scope changes from August 30 to September 26, 2018.

RECOMMENDATION: Receive and file report

WORK PROGRAM IMPACT: None

Contract Execution Status

2016-18 Work Program

On July 8, 2016, the SCAQMD Governing Board approved an award under the Event Center Transportation Program. This contract is executed.

On October 7, 2016, the SCAQMD Governing Board approved three awards under the Event Center Transportation Program and one award for a Regional Active Transportation Partnership Program. These contracts are executed.

On January 6, 2017, the SCAQMD Governing Board approved an award for development, hosting and maintenance of a new MSRC website. This contract is executed.

On April 7, 2017, the SCAQMD Governing Board approved an award under the Event Center Transportation Program. This contract is executed.

On June 2, 2017, the SCAQMD Governing Board approved an award under the Event Center Transportation Program. This contract is executed.

On July 7, 2017, the SCAQMD Governing Board approved an award under the Event Center Transportation Program. This contract is executed.

On September 1, 2017, the SCAQMD Governing Board approved one award under the Event Center Transportation Program and one award under the Natural Gas Infrastructure Program. These contracts are with the prospective contractor for signature or executed.

On October 6, 2017, the SCAQMD Governing Board approved two awards under the Event Center Transportation Program and one award under the Natural Gas Infrastructure Program. These contracts are executed.

On December 1, 2017, the SCAQMD Governing Board approved sole source awards for a Hydrogen Infrastructure Partnership Program, for a Southern California Future Communities Partnership Program, and for electric vehicle charging infrastructure planning analysis. These contracts are with the prospective contractor for signature or executed. The MSRC has replaced the award to the California Energy Commission with a Program Opportunity Notice for the Hydrogen Infrastructure Partnership Program.

On February 2, 2018, the SCAQMD Governing Board approved one award under the Event Center Transportation Program, two awards under the Natural Gas Infrastructure Program, four awards under the Local Government Partnership Program, and two awards under the County Transportation Commission Partnership Program. These contracts are under development or executed.

On March 2, 2018, the SCAQMD Governing Board approved one award under the Major Event Center Transportation Program, two awards under the Natural Gas Infrastructure Program, and one award under the Local Government Partnership Program. These contracts are undergoing internal review, with the prospective contractor for signature, or executed.

On April 6, 2018, the SCAQMD Governing Board approved one award under the Natural Gas Infrastructure Program and eight awards under the Local Government Partnership Program. These contracts are with the prospective contractor for signature, with the SCAQMD Board Chair for signature, or executed.

On May 4, 2018, the SCAQMD Governing Board approved twenty-seven awards under the Local Government Partnership Program and one award under the County Transportation Commission Partnership Program. These contracts are under development, undergoing internal review, with the prospective contractor for signature, with the SCAQMD Board Chair for signature, or executed.

On June 1, 2018, the SCAQMD Governing Board approved six awards under the Local Government Partnership Program, one award under the Natural Gas Infrastructure Program, and one award under the County Transportation Commission Partnership Program. These contracts are undergoing internal review, with the prospective contractor for signature, or executed.

On July 6, 2018, the SCAQMD Governing Board approved nine awards under the Local Government Partnership Program. These contracts are undergoing internal review or with the prospective contractor for signature.

On September 7, 2018, the SCAQMD Governing Board approved nineteen awards under the Local Government Partnership Program, three awards under the County Transportation Commission Partnership Program, one award under the Major Event Center Transportation Program, and twenty awards under the Natural Gas Infrastructure Program. These contracts are under development or undergoing internal review.

2014-16 Work Program

On December 5, 2014, the SCAQMD Governing Board approved an award under the AB118 Enhanced Fleet Maintenance Program. This contract is executed.

On June 5, 2015, the SCAQMD Governing Board approved two awards under the Event Center Transportation Program and one award to provide low-emission transportation services to the Special Olympics World Games. These contracts are executed.

On September 4, 2015, the SCAQMD Governing Board approved 25 awards under the Local Government Match Program and one award under the Transportation Control Measure Partnership Program. These contracts are executed.

On October 2, 2015, the SCAQMD Governing Board approved 11 awards under the Local Government Match Program and one award under the Alternative Fuel Infrastructure Program. These contracts are executed.

On November 6, 2015, the SCAQMD Governing Board approved 37 awards under the Local Government Match Program. These contracts are executed.

On December 4, 2015, the SCAQMD Governing Board approved one award under the Major Event Center Transportation Program, one award under the Alternative Fuel Infrastructure Program, and one award under the Transportation Control Measure Partnership Program. These contracts are executed.

On January 8, 2016, the SCAQMD Governing Board approved two awards under the Major Event Center Transportation Program, one award under the Local Government Match Program, and one award under the Transportation Control Measure Partnership Program. These contracts are executed.

On March 4, 2016, the SCAQMD Governing Board approved two awards under the Alternative Fuel Infrastructure Program. These contracts are executed.

On April 1, 2016, the SCAQMD Governing Board approved one award under the Major Event Center Transportation Program and five awards under the Transportation Control Measure Partnership Program. These contracts are executed.

On May 6, 2016, the SCAQMD Governing Board approved one award under the Major Event Center Transportation Program and one award under the Transportation Control Measure Partnership Program. These contracts are executed.

On June 3, 2016, the SCAQMD Governing Board approved one award under the Alternative Fuel Infrastructure Program. This contract is executed.

On October 7, 2016, the SCAQMD Governing Board approved ten awards under the Alternative Fuel Infrastructure Program and five awards under the Near-Zero Natural Gas Engine Incentives Program. These contracts are with the prospective contractor for signature or executed.

During this period, VNG Lakeview declined their award and \$150,000 reverted to the AB 2766 Discretionary Fund.

On January 6, 2017, the SCAQMD Governing Board approved an award under the Alternative Fuel Infrastructure Program and an award under the Near-Zero Natural Gas Engine Incentives Program. These contracts are executed.

Work Program Status

Contract Status Reports for work program years with open (including “Open/Complete”) and/or pending contracts are attached.

FY 2004-05 Work Program Contracts

One contract from this work program year is open.

FY 2004-05 Invoices Paid

No invoices were paid during this period.

FY 2006-07 Work Program Contracts

No contracts from this work program year are open; and one is in “Open/Complete” status.

FY 2006-07 Invoices Paid

No invoices were paid during this period.

FY 2007-08 Work Program Contracts

3 contracts from this work program year are open; and 2 are in “Open/Complete” status.

FY 2007-08 Invoices Paid

No invoices were paid during this period.

FY 2008-09 Work Program Contracts

One contract from this work program year is open; and 4 are in “Open/Complete” status.

FY 2008-09 Invoices Paid

No invoices were paid during this period.

FY 2010-11 Work Program Contracts

4 contracts from this work program year are open; and 31 are in “Open/Complete” status. One contract closed during this period: City of Ontario, Contract #ML11039 – Purchase 6 Heavy-Duty Natural Gas Vehicles.

FY 2010-11 Invoices Paid

No invoices were paid during this period.

FY 2011-12 Work Program Contracts

9 contracts from this work program year are open, and 34 are in “Open/Complete” status. One replacement contract is also pending execution.

FY 2011-12 Invoices Paid

No invoices were paid during this period.

FYs 2012-14 Work Program Contracts

30 contracts from this work program year are open, and 25 are in “Open/Complete” status. One replacement contract is also pending execution.

FYs 2012-14 Invoices Paid

One invoice in the amount of \$293,442.00 was paid during this period.

FYs 2014-16 Work Program Contracts

67 contracts from this work program year are open, and 18 are in “Open/Complete” status. 3 contracts closed during this period: City of Long Beach, Contract #ML16066 – Implement an “Open Streets” Event; Los Angeles County Metropolitan Transportation Authority, Contract #MS16001 – Clean Fuel Transit Service to Dodger Stadium; and Foothill Transit, Contract #MS16099 – Provide Special Bus Service to Los Angeles County Fair.

FYs 2014-16 Invoices Paid

Four invoices totaling \$777,827.03 were paid during this period.

FYs 2016-18 Work Program Contracts

45 contracts from this work program year are open.

FYs 2016-18 Invoices Paid

Four invoices totaling \$464,433.86 were paid during this period.

Administrative Scope Changes

No administrative scope changes were initiated during the period of August 30 to September 26, 2018.

Attachments

- FY 2004-05 through FYs 2016-18 (except FY 2005-06 and FY 2009-10) Contract Status Reports



AB2766 Discretionary Fund Program Invoices

August 30 to September 26, 2018

Contract Admin.	MSRC Chair	MSRC Liaison	Finance	Contract #	Contractor	Invoice #	Amount
<i>2012-2014 Work Program</i>							
9/26/2018				MS14072	San Bernardino County Transportation Authority	2	\$305,000.00
9/12/2018	9/25/2018	9/25/2018	10/3/2018	MS14075	Fullerton Joint Union High School District	1718-02	\$293,442.00
Total: \$598,442.00							
<i>2014-2016 Work Program</i>							
9/25/2018	9/25/2018	9/25/2018	10/3/2018	ML16020	City of Pomona	007849-Fin	\$440,000.00
9/18/2018	9/25/2018	9/25/2018	10/3/2018	MS16115	City of Santa Monica	768-C	\$256,500.00
9/7/2018	9/7/2018	9/12/2018	9/13/2018	MS16030	The Better World Group	1686	\$37,767.99
8/30/2018	9/7/2018	9/12/2018	9/13/2018	MS16086	San Bernardino County Transportation Authority	5	\$43,559.04
Total: \$777,827.03							
<i>2016-2018 Work Program</i>							
9/25/2018				MS18011	Southern California Regional Rail Authority (Metrolink)	005298-FINA	\$221,725.12
9/18/2018	9/25/2018	9/25/2018	10/3/2018	MS18003	Geographics	18-21076	\$373.00
9/7/2018	9/7/2018	9/12/2018	9/13/2018	MS18004	Orange County Transportation Authority	FA140075	\$192,929.13
8/30/2018	9/7/2018	9/12/2018	9/13/2018	MS18008	Foothill Transit	008.LACFair	\$49,406.61
Total: \$464,433.86							

Total This Period: \$1,840,702.89



FYs 2004-05 Through 2016-18 AB2766 Contract Status Report

10/18/2018

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
<i>FY 2004-2005 Contracts</i>									
<i>Open Contracts</i>									
ML05014	Los Angeles County Department of P	5/21/2007	11/20/2008	12/20/2018	\$204,221.00	\$0.00	Traffic Signal Synchronization	\$204,221.00	No
Total: 1									
<i>Declined/Cancelled Contracts</i>									
ML05005	City of Highland				\$20,000.00	\$0.00	2 Medium Duty CNG Vehicles	\$20,000.00	No
ML05008	Los Angeles County Department of P				\$140,000.00	\$0.00	7 Heavy Duty LPG Street Sweepers	\$140,000.00	No
ML05010	Los Angeles County Department of P				\$20,000.00	\$0.00	1 Heavy Duty CNG Bus	\$20,000.00	No
MS05030	City of Inglewood				\$31,662.00	\$0.00	2 CNG Street Sweepers	\$31,662.00	No
MS05032	H&C Disposal				\$34,068.00	\$0.00	2 CNG Waste Haulers	\$34,068.00	No
MS05044	City of Colton				\$78,720.00	\$0.00	CNG Station Upgrade	\$78,720.00	No
Total: 6									
<i>Closed Contracts</i>									
ML05006	City of Colton Public Works	7/27/2005	7/26/2006		\$30,000.00	\$30,000.00	3 Medium Duty CNG Vehicles	\$0.00	Yes
ML05011	Los Angeles County Department of P	8/10/2006	12/9/2007	6/9/2008	\$52,409.00	\$51,048.46	3 Heavy Duty LPG Shuttle Vans	\$1,360.54	Yes
ML05013	Los Angeles County Department of P	1/5/2007	7/4/2008	1/4/2013	\$313,000.00	\$313,000.00	Traffic Signal Synchronization	\$0.00	Yes
ML05015	City of Lawndale	7/27/2005	7/26/2006		\$10,000.00	\$10,000.00	1 Medium Duty CNG Vehicle	\$0.00	Yes
ML05016	City of Santa Monica	9/23/2005	9/22/2006	9/22/2007	\$350,000.00	\$350,000.00	6 MD CNG Vehicles, 1 LPG Sweep, 13 CNG	\$0.00	Yes
ML05017	City of Signal Hill	1/16/2006	7/15/2007		\$126,000.00	\$126,000.00	Traffic Signal Synchronization	\$0.00	Yes
ML05018	City of San Bernardino	4/19/2005	4/18/2006		\$40,000.00	\$40,000.00	4 M.D. CNG Vehicles	\$0.00	Yes
ML05019	City of Lakewood	5/6/2005	5/5/2006		\$10,000.00	\$10,000.00	1 M.D. CNG Vehicle	\$0.00	Yes
ML05020	City of Pomona	6/24/2005	6/23/2006		\$10,000.00	\$10,000.00	1 M.D. CNG Vehicle	\$0.00	Yes
ML05021	City of Whittier	7/7/2005	7/6/2006	4/6/2008	\$100,000.00	\$80,000.00	Sweeper, Aerial Truck, & 3 Refuse Trucks	\$20,000.00	Yes
ML05022	City of Claremont	9/23/2005	9/22/2006		\$20,000.00	\$20,000.00	2 M.D. CNG Vehicles	\$0.00	Yes
ML05024	City of Cerritos	4/18/2005	3/17/2006		\$10,000.00	\$10,000.00	1 M.D. CNG Vehicle	\$0.00	Yes
ML05025	City of Malibu	5/6/2005	3/5/2006		\$10,000.00	\$10,000.00	1 Medium-Duty CNG Vehicle	\$0.00	Yes
ML05026	City of Inglewood	1/6/2006	1/5/2007	2/5/2009	\$60,000.00	\$60,000.00	2 CNG Transit Buses, 1 CNG Pothole Patch	\$0.00	Yes
ML05027	City of Beaumont	2/23/2006	4/22/2007	6/22/2010	\$20,000.00	\$20,000.00	1 H.D. CNG Bus	\$0.00	Yes
ML05028	City of Anaheim	9/8/2006	9/7/2007	5/7/2008	\$85,331.00	\$85,331.00	Traffic signal coordination & synchronization	\$0.00	Yes
ML05029	Los Angeles World Airports	5/5/2006	9/4/2007		\$140,000.00	\$140,000.00	Seven CNG Buses	\$0.00	Yes
ML05071	City of La Canada Flintridge	1/30/2009	1/29/2011		\$20,000.00	\$20,000.00	1 CNG Bus	\$0.00	Yes
ML05072	Los Angeles County Department of P	8/24/2009	5/23/2010	1/23/2011	\$349,000.00	\$349,000.00	Traffic Signal Synchronization (LADOT)	\$0.00	Yes
MS05001	A-Z Bus Sales, Inc.	2/4/2005	12/31/2005	12/31/2006	\$1,385,000.00	\$1,385,000.00	CNG School Bus Buydown	\$0.00	Yes

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
MS05002	California Bus Sales	2/4/2005	12/31/2005	12/31/2006	\$1,800,000.00	\$1,800,000.00	CNG School Bus Buydown	\$0.00	Yes
MS05003	BusWest	1/28/2005	12/31/2005	12/31/2006	\$2,100,000.00	\$1,620,000.00	CNG School Bus Buydown	\$480,000.00	Yes
MS05004	Johnson/Ukropina Creative Marketin	11/27/2004	1/18/2006	4/18/2006	\$1,000,000.00	\$994,612.56	Implement "Rideshare Thursday" Campaign	\$5,387.44	Yes
MS05031	City of Ontario, Housing & Municipal	7/22/2005	3/21/2007		\$191,268.00	\$191,268.00	11 CNG Waste Haulers	\$0.00	Yes
MS05033	Waste Management of the Desert	9/26/2005	5/25/2007		\$202,900.00	\$202,900.00	10 CNG Waste Haulers	\$0.00	Yes
MS05034	Sukut Equipment, Inc.	9/9/2005	5/8/2007		\$1,151,136.00	\$1,151,136.00	Repower 12 Scrapers	\$0.00	Yes
MS05035	Varner Construction Inc.	11/28/2005	4/27/2007	2/27/2008	\$334,624.00	\$334,624.00	Repower 5 Off-Road H.D. Vehicles	\$0.00	Yes
MS05036	Camarillo Engineering	8/18/2005	1/17/2007		\$1,167,276.00	\$1,167,276.00	Repower 12 Scrapers	\$0.00	Yes
MS05037	Road Builders, Inc.	11/21/2005	4/20/2007	6/20/2008	\$229,302.00	\$229,302.00	Repower 2 Scrapers	\$0.00	Yes
MS05038	SunLine Transit Agency	3/30/2006	9/29/2007		\$135,000.00	\$135,000.00	15 CNG Buses	\$0.00	Yes
MS05039	Los Angeles County MTA	4/28/2006	4/27/2008		\$405,000.00	\$405,000.00	75 CNG Buses	\$0.00	Yes
MS05040	Orange County Transportation Autho	3/23/2006	12/22/2007	6/22/2008	\$200,000.00	\$200,000.00	25 CNG Buses	\$0.00	Yes
MS05041	The Regents of the University of Cali	9/5/2006	8/4/2007	9/4/2008	\$15,921.00	\$15,921.00	CNG Station Upgrade	\$0.00	Yes
MS05042	City of Ontario, Housing & Municipal	11/21/2005	9/20/2006	7/20/2007	\$117,832.00	\$74,531.27	CNG Station Upgrade	\$43,300.73	Yes
MS05043	Whittier Union High School District	9/23/2005	7/22/2006		\$15,921.00	\$15,921.00	CNG Station Upgrade	\$0.00	Yes
MS05045	City of Covina	9/9/2005	7/8/2006		\$10,000.00	\$7,435.61	CNG Station Upgrade	\$2,564.39	Yes
MS05046	City of Inglewood	1/6/2006	5/5/2007		\$139,150.00	\$56,150.27	CNG Station Upgrade	\$82,999.73	Yes
MS05047	Orange County Transportation Autho	10/20/2005	10/19/2006	1/19/2007	\$75,563.00	\$75,563.00	CNG Station Upgrade	\$0.00	Yes
MS05048	City of Santa Monica	7/24/2006	11/23/2007		\$150,000.00	\$150,000.00	CNG Station Upgrade	\$0.00	Yes
MS05049	Omnitrans	9/23/2005	2/22/2007		\$25,000.00	\$7,250.00	CNG Station Upgrade	\$17,750.00	Yes
MS05050	Gateway Cities Council of Governme	12/21/2005	4/20/2010		\$1,464,839.00	\$1,464,838.12	Truck Fleet Modernization Program	\$0.88	Yes
MS05051	Jagur Tractor	1/16/2006	4/15/2007	10/15/2007	\$660,928.00	\$660,928.00	Repower 6 Scrapers	\$0.00	Yes
MS05052	Caufield Equipment, Inc.	8/3/2005	1/2/2007		\$478,000.00	\$478,000.00	Repower 4 Scrapers	\$0.00	Yes
MS05070	Haaland Internet Productions (HIP D	6/24/2005	5/31/2007	11/30/2011	\$100,715.00	\$92,458.24	Design, Host & Maintain MSRC Website	\$8,256.76	Yes

Total: 44

Closed/Incomplete Contracts

ML05007	Los Angeles County Dept of Beache	6/23/2006	6/22/2007	12/22/2007	\$50,000.00	\$0.00	5 Medium Duty CNG Vehicles	\$50,000.00	No
ML05009	Los Angeles County Department of P	6/22/2006	12/21/2007	9/30/2011	\$56,666.00	\$0.00	2 Propane Refueling Stations	\$56,666.00	No
ML05012	Los Angeles County Department of P	11/10/2006	5/9/2008	1/9/2009	\$349,000.00	\$0.00	Traffic Signal Synchronization (LADOT)	\$349,000.00	No
ML05023	City of La Canada Flintridge	3/30/2005	2/28/2006	8/28/2008	\$20,000.00	\$0.00	1 CNG Bus	\$20,000.00	No

Total: 4

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
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FY 2006-2007 Contracts

Declined/Cancelled Contracts

ML07031	City of Santa Monica				\$180,000.00	\$0.00	Upgrade N.G. Station to Add Hythane	\$180,000.00	No
ML07032	City of Huntington Beach Public Wor				\$25,000.00	\$0.00	One H.D. CNG Vehicle	\$25,000.00	No
ML07035	City of Los Angeles, General Service				\$350,000.00	\$0.00	New CNG Refueling Station/Southeast Yard	\$350,000.00	No
ML07038	City of Palos Verdes Estates				\$25,000.00	\$0.00	One H.D. LPG Vehicle	\$25,000.00	No
MS07010	Palos Verdes Peninsula Transit Auth				\$80,000.00	\$0.00	Repower 4 Transit Buses	\$80,000.00	No
MS07014	Clean Energy Fuels Corp.				\$350,000.00	\$0.00	New L/CNG Station - SERRF	\$350,000.00	No
MS07015	Baldwin Park Unified School District				\$57,500.00	\$0.00	New CNG Station	\$57,500.00	No
MS07016	County of Riverside Fleet Services D				\$36,359.00	\$0.00	New CNG Station - Rubidoux	\$36,359.00	No
MS07017	County of Riverside Fleet Services D				\$33,829.00	\$0.00	New CNG Station - Indio	\$33,829.00	No
MS07018	City of Cathedral City				\$350,000.00	\$0.00	New CNG Station	\$350,000.00	No
MS07021	City of Riverside				\$350,000.00	\$0.00	New CNG Station	\$350,000.00	No
MS07050	Southern California Disposal Co.				\$320,000.00	\$0.00	Ten Nat. Gas Refuse Trucks	\$320,000.00	No
MS07062	Caltrans Division of Equipment				\$1,081,818.00	\$0.00	Off-Road Diesel Equipment Retrofit Program	\$1,081,818.00	No
MS07065	ECCO Equipment Corp.				\$174,525.00	\$0.00	Off-Road Diesel Equipment Retrofit Program	\$174,525.00	No
MS07067	Recycled Materials Company of Calif				\$99,900.00	\$0.00	Off-Road Diesel Equipment Retrofit Program	\$99,900.00	No
MS07069	City of Burbank	5/9/2008	3/8/2010	9/8/2011	\$8,895.00	\$0.00	Off-Road Diesel Equipment Retrofit Program	\$8,895.00	No
MS07074	Albert W. Davies, Inc.	1/25/2008	11/24/2009		\$39,200.00	\$0.00	Off-Road Diesel Equipment Retrofit Program	\$39,200.00	No
MS07081	Clean Diesel Technologies, Inc.				\$240,347.00	\$0.00	Off-Road Diesel Equipment Retrofit Program	\$240,347.00	No
MS07082	DCL International, Inc.				\$153,010.00	\$0.00	Off-Road Diesel Equipment Retrofit Program	\$153,010.00	No
MS07083	Dinex Exhausts, Inc.				\$52,381.00	\$0.00	Off-Road Diesel Equipment Retrofit Program	\$52,381.00	No
MS07084	Donaldson Company, Inc.				\$42,416.00	\$0.00	Off-Road Diesel Equipment Retrofit Program	\$42,416.00	No
MS07085	Engine Control Systems Limited				\$155,746.00	\$0.00	Off-Road Diesel Equipment Retrofit Program	\$155,746.00	No
MS07086	Huss, LLC				\$84,871.00	\$0.00	Off-Road Diesel Equipment Retrofit Program	\$84,871.00	No
MS07087	Mann+Hummel GmbH				\$189,361.00	\$0.00	Off-Road Diesel Equipment Retrofit Program	\$189,361.00	No
MS07088	Nett Technologies, Inc.				\$118,760.00	\$0.00	Off-Road Diesel Equipment Retrofit Program	\$118,760.00	No
MS07089	Rypos, Inc.				\$68,055.00	\$0.00	Off-Road Diesel Equipment Retrofit Program	\$68,055.00	No
MS07090	Sud-Chemie				\$27,345.00	\$0.00	Off-Road Diesel Equipment Retrofit Program	\$27,345.00	No
Total: 27									

Closed Contracts

ML07023	City of Riverside	6/20/2008	10/19/2014	7/19/2016	\$462,500.00	\$461,476.42	CNG Station Expansion/Purch. 14 H.D. Vehi	\$1,023.58	Yes
ML07024	City of Garden Grove	3/7/2008	9/6/2014	7/6/2016	\$75,000.00	\$75,000.00	Three H.D. CNG Vehicles	\$0.00	Yes
ML07025	City of San Bernardino	8/12/2008	7/11/2010		\$350,000.00	\$350,000.00	Maintenance Facility Modifications	\$0.00	Yes
ML07026	City of South Pasadena	6/13/2008	6/12/2014		\$25,000.00	\$25,000.00	One H.D. CNG Vehicle	\$0.00	Yes
ML07027	Los Angeles World Airports	6/3/2008	7/2/2014		\$25,000.00	\$25,000.00	One H.D. LNG Vehicle	\$0.00	Yes

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
ML07028	City of Los Angeles, General Service	3/13/2009	3/12/2014		\$350,000.00	\$350,000.00	New CNG Refueling Station/Hollywood Yard	\$0.00	Yes
ML07029	City of Los Angeles, General Service	3/13/2009	3/12/2014		\$350,000.00	\$350,000.00	New CNG Refueling Station/Venice Yard	\$0.00	Yes
ML07030	County of San Bernardino Public Wo	7/11/2008	9/10/2015		\$200,000.00	\$200,000.00	8 Natural Gas H.D. Vehicles	\$0.00	Yes
ML07033	City of La Habra	5/21/2008	6/20/2014	11/30/2013	\$25,000.00	\$25,000.00	One H.D. Nat Gas Vehicle	\$0.00	Yes
ML07034	City of Los Angeles, General Service	3/13/2009	3/12/2014		\$350,000.00	\$350,000.00	New CNG Refueling Station/Van Nuys Yard	\$0.00	Yes
ML07036	City of Alhambra	1/23/2009	2/22/2015		\$50,000.00	\$50,000.00	2 H.D. CNG Vehicles	\$0.00	Yes
ML07037	City of Los Angeles, General Service	10/8/2008	10/7/2015		\$255,222.00	\$255,222.00	Upgrade LNG/LCNG Station/East Valley Yar	\$0.00	Yes
ML07039	City of Baldwin Park	6/6/2008	6/5/2014	8/5/2015	\$50,000.00	\$50,000.00	Two N.G. H.D. Vehicles	\$0.00	Yes
ML07040	City of Moreno Valley	6/3/2008	9/2/2014		\$25,000.00	\$25,000.00	One Heavy-Duty CNG Vehicle	\$0.00	Yes
ML07041	City of La Quinta	6/6/2008	6/5/2014		\$25,000.00	\$25,000.00	One CNG Street Sweeper	\$0.00	Yes
ML07042	City of La Quinta	8/15/2008	9/14/2010		\$100,000.00	\$100,000.00	Street Sweeping Operations	\$0.00	Yes
ML07043	City of Redondo Beach	9/28/2008	7/27/2014	10/27/2016	\$125,000.00	\$125,000.00	Five H.D. CNG Transit Vehicles	\$0.00	Yes
ML07044	City of Santa Monica	9/8/2008	3/7/2015	3/7/2017	\$600,000.00	\$600,000.00	24 H.D. Nat. Gas Vehicles	\$0.00	Yes
ML07046	City of Culver City Transportation De	5/2/2008	5/1/2014		\$25,000.00	\$25,000.00	One H.D. Nat. Gas Vehicle	\$0.00	Yes
ML07047	City of Cathedral City	6/16/2008	9/15/2014	3/15/2015	\$225,000.00	\$225,000.00	Two H.D. Nat. Gas Vehicles/New CNG Fueli	\$0.00	Yes
ML07048	City of Cathedral City	9/19/2008	10/18/2010		\$100,000.00	\$84,972.45	Street Sweeping Operations	\$15,027.55	Yes
MS07001	A-Z Bus Sales, Inc.	12/28/2006	12/31/2007	2/29/2008	\$1,920,000.00	\$1,380,000.00	CNG School Bus Buydown	\$540,000.00	Yes
MS07002	BusWest	1/19/2007	12/31/2007	3/31/2008	\$840,000.00	\$840,000.00	CNG School Bus Buydown	\$0.00	Yes
MS07003	Westport Fuel Systems, Inc.	11/2/2007	12/31/2011	6/30/2013	\$1,500,000.00	\$1,499,990.00	Advanced Nat. Gas Engine Incentive Progra	\$10.00	Yes
MS07005	S-W Compressors	3/17/2008	3/16/2010		\$60,000.00	\$7,500.00	Mountain CNG School Bus Demo Program-	\$52,500.00	Yes
MS07006	Coachella Valley Association of Gov	2/28/2008	10/27/2008		\$400,000.00	\$400,000.00	Coachella Valley PM10 Reduction Street Sw	\$0.00	Yes
MS07007	Los Angeles World Airports	5/2/2008	11/1/2014		\$420,000.00	\$420,000.00	Purchase CNG 21 Transit Buses	\$0.00	Yes
MS07008	City of Los Angeles, Department of T	9/18/2009	5/17/2020	9/17/2017	\$1,900,000.00	\$1,900,000.00	Purchase 95 Transit Buses	\$0.00	Yes
MS07009	Orange County Transportation Autho	5/14/2008	4/13/2016		\$800,000.00	\$800,000.00	Purchase 40 Transit Buses	\$0.00	Yes
MS07011	L A Service Authority for Freeway E	3/12/2010	5/31/2011	9/30/2011	\$700,000.00	\$700,000.00	"511" Commuter Services Campaign	\$0.00	Yes
MS07012	City of Los Angeles, General Service	6/13/2008	6/12/2009	6/12/2010	\$50,000.00	\$50,000.00	Maintenance Facility Modifications	\$0.00	Yes
MS07013	Rainbow Disposal Company, Inc.	1/25/2008	3/24/2014	9/24/2014	\$350,000.00	\$350,000.00	New High-Volume CNG Station	\$0.00	Yes
MS07019	City of Cathedral City	1/9/2009	6/8/2010		\$32,500.00	\$32,500.00	Maintenance Facility Modifications	\$0.00	Yes
MS07020	Avery Petroleum	5/20/2009	7/19/2015		\$250,000.00	\$250,000.00	New CNG Station	\$0.00	Yes
MS07049	Palm Springs Disposal Services	10/23/2008	11/22/2014	9/22/2016	\$96,000.00	\$96,000.00	Three Nat. Gas Refuse Trucks	\$0.00	Yes
MS07051	City of San Bernardino	8/12/2008	12/11/2014		\$480,000.00	\$480,000.00	15 Nat. Gas Refuse Trucks	\$0.00	Yes
MS07052	City of Redlands	7/30/2008	11/29/2014		\$160,000.00	\$160,000.00	Five Nat. Gas Refuse Trucks	\$0.00	Yes
MS07053	City of Claremont	7/31/2008	12/30/2014		\$96,000.00	\$96,000.00	Three Nat. Gas Refuse Trucks	\$0.00	Yes
MS07054	Republic Services, Inc.	3/7/2008	9/6/2014	9/6/2016	\$1,280,000.00	\$1,280,000.00	40 Nat. Gas Refuse Trucks	\$0.00	Yes
MS07055	City of Culver City Transportation De	7/8/2008	9/7/2014		\$192,000.00	\$192,000.00	Six Nat. Gas Refuse Trucks	\$0.00	Yes
MS07056	City of Whittier	9/5/2008	3/4/2015		\$32,000.00	\$32,000.00	One Nat. Gas Refuse Trucks	\$0.00	Yes
MS07057	CR&R, Inc.	7/31/2008	8/30/2014	6/30/2015	\$896,000.00	\$896,000.00	28 Nat. Gas Refuse Trucks	\$0.00	Yes

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
MS07058	The Better World Group	11/17/2007	11/16/2009	11/16/2011	\$247,690.00	\$201,946.21	MSRC Programmatic Outreach Services	\$45,743.79	Yes
MS07059	County Sanitation Districts of L.A. Co	9/5/2008	9/4/2010	7/14/2012	\$231,500.00	\$231,500.00	Off-Road Diesel Equipment Retrofit Program	\$0.00	Yes
MS07060	Community Recycling & Resource R	3/7/2008	1/6/2010	7/6/2011	\$177,460.00	\$98,471.00	Off-Road Diesel Equipment Retrofit Program	\$78,989.00	Yes
MS07061	City of Los Angeles, Department of	10/31/2008	8/30/2010	2/28/2013	\$40,626.00	\$40,626.00	Off-Road Diesel Equipment Retrofit Program	\$0.00	Yes
MS07063	Shimmick Construction Company, In	4/26/2008	2/25/2010	8/25/2011	\$80,800.00	\$11,956.37	Off-Road Diesel Equipment Retrofit Program	\$68,843.63	Yes
MS07064	Altfillisch Contractors, Inc.	9/19/2008	7/18/2010	1/18/2011	\$160,000.00	\$155,667.14	Off-Road Diesel Equipment Retrofit Program	\$4,332.86	Yes
MS07068	Sukut Equipment Inc.	1/23/2009	11/22/2010	5/22/2012	\$26,900.00	\$26,900.00	Off-Road Diesel Equipment Retrofit Program	\$0.00	Yes
MS07070	Griffith Company	4/30/2008	2/28/2010	8/28/2012	\$168,434.00	\$125,504.00	Off-Road Diesel Equipment Retrofit Program	\$42,930.00	Yes
MS07071	Tiger 4 Equipment Leasing	9/19/2008	7/18/2010	1/18/2013	\$210,937.00	\$108,808.97	Off-Road Diesel Equipment Retrofit Program	\$102,128.03	Yes
MS07072	City of Culver City Transportation De	4/4/2008	2/3/2010	8/3/2011	\$72,865.00	\$72,865.00	Off-Road Diesel Equipment Retrofit Program	\$0.00	Yes
MS07075	Dan Copp Crushing	9/17/2008	7/16/2010	1/16/2012	\$73,600.00	\$40,200.00	Off-Road Diesel Equipment Retrofit Program	\$33,400.00	Yes
MS07076	Reed Thomas Company, Inc.	8/15/2008	6/14/2010	3/14/2012	\$339,073.00	\$100,540.00	Off-Road Diesel Equipment Retrofit Program	\$238,533.00	Yes
MS07077	USA Waste of California, Inc.	5/1/2009	12/31/2014		\$160,000.00	\$160,000.00	Five Nat. Gas Refuse Trucks (Santa Ana)	\$0.00	Yes
MS07078	USA Waste of California, Inc.	5/1/2009	12/31/2014	12/31/2015	\$256,000.00	\$256,000.00	Eight Nat. Gas Refuse Trucks (Dewey's)	\$0.00	Yes
MS07079	Riverside County Transportation Co	1/30/2009	7/29/2013	12/31/2011	\$20,000.00	\$15,165.45	BikeMetro Website Migration	\$4,834.55	Yes
MS07080	City of Los Angeles Bureau of Sanita	10/31/2008	8/30/2010	8/28/2016	\$63,192.00	\$62,692.00	Off-Road Diesel Equipment Retrofit Program	\$500.00	No
MS07091	BusWest	10/16/2009	3/15/2010		\$33,660.00	\$33,660.00	Provide Lease for 2 CNG School Buses	\$0.00	Yes
MS07092	Riverside County Transportation Co	9/1/2010	10/31/2011		\$350,000.00	\$350,000.00	"511" Commuter Services Campaign	\$0.00	Yes

Total: 60

Closed/Incomplete Contracts

ML07045	City of Inglewood	2/6/2009	4/5/2015		\$75,000.00	\$25,000.00	3 H.D. Nat. Gas Vehicles	\$50,000.00	No
MS07004	BusWest	7/2/2007	7/1/2009		\$90,928.00	\$68,196.00	Provide Lease for 2 CNG School Buses	\$22,732.00	No
MS07066	Skanska USA Civil West California D	6/28/2008	4/27/2010	10/27/2010	\$111,700.00	\$36,128.19	Off-Road Diesel Equipment Retrofit Program	\$75,571.81	No
MS07073	PEED Equipment Co.	10/31/2008	8/30/2010		\$11,600.00	\$0.00	Off-Road Diesel Equipment Retrofit Program	\$11,600.00	No

Total: 4

Open/Complete Contracts

MS07022	CSULA Hydrogen Station and Resea	10/30/2009	12/29/2015	10/29/2019	\$250,000.00	\$250,000.00	New Hydrogen Fueling Station	\$0.00	Yes
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Total: 1

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
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FY 2007-2008 Contracts

Open Contracts

ML08028	City of Santa Monica	9/11/2009	9/10/2016	5/10/2019	\$600,000.00	\$0.00	24 CNG Heavy-Duty Vehicles	\$600,000.00	No
MS08007	United Parcel Service West Region	12/10/2008	10/9/2014	4/9/2019	\$300,000.00	\$270,000.00	10 H.D. Nat. Gas Vehicles	\$30,000.00	Yes
MS08013	United Parcel Service West Region	12/10/2008	10/9/2014	3/9/2019	\$480,000.00	\$432,000.00	12 H.D. Nat. Gas Yard Tractors	\$48,000.00	No

Total: 3

Declined/Cancelled Contracts

ML08032	City of Irvine	5/1/2009	8/31/2010		\$9,000.00	\$0.00	36 Vehicles (Diagnostic)	\$9,000.00	No
ML08041	City of Los Angeles, Dept of Transpo	8/6/2010	7/5/2011	12/5/2011	\$8,800.00	\$0.00	73 Vehicles (Diagnostic)	\$8,800.00	No
ML08049	City of Cerritos	3/20/2009	1/19/2015	2/19/2017	\$25,000.00	\$0.00	1 CNG Heavy-Duty Vehicle	\$25,000.00	No
ML08051	City of Colton				\$75,000.00	\$0.00	3 CNG Heavy-Duty Vehicles	\$75,000.00	No
ML08080	City of Irvine	5/1/2009	5/31/2015		\$50,000.00	\$0.00	Two Heavy-Duty Nat. Gas Vehicles	\$50,000.00	No
MS08002	Orange County Transportation Autho				\$1,500,000.00	\$0.00	Big Rig Freeway Service Patrol	\$1,500,000.00	No
MS08008	Diversified Truck Rental & Leasing				\$300,000.00	\$0.00	10 H.D. Nat. Gas Vehicles	\$300,000.00	No
MS08010	Orange County Transportation Autho				\$10,000.00	\$0.00	20 H.D. Nat. Gas Vehicles	\$10,000.00	No
MS08011	Green Fleet Systems, LLC				\$10,000.00	\$0.00	30 H.D. Nat. Gas Vehicles	\$10,000.00	No
MS08052	Burrtec Waste Industries, Inc.	12/24/2008	11/23/2014	11/23/2015	\$100,000.00	\$0.00	New CNG Station - Fontana	\$100,000.00	No
MS08054	Clean Energy Fuels Corp.				\$400,000.00	\$0.00	New LNG Station - Fontana	\$400,000.00	No
MS08055	Clean Energy Fuels Corp.	11/26/2009	3/25/2016	3/25/2017	\$400,000.00	\$0.00	New LNG Station - Long Beach-Pier S	\$400,000.00	No
MS08059	Burrtec Waste Industries, Inc.	12/24/2008	11/23/2014		\$100,000.00	\$0.00	New CNG Station - San Bernardino	\$100,000.00	No
MS08060	Burrtec Waste Industries, Inc.	12/24/2008	11/23/2014		\$100,000.00	\$0.00	New CNG Station - Azusa	\$100,000.00	No
MS08062	Go Natural Gas	9/25/2009	1/24/2016	1/24/2017	\$400,000.00	\$0.00	New CNG Station - Rialto	\$400,000.00	No
MS08074	Fontana Unified School District	11/14/2008	12/13/2014		\$200,000.00	\$0.00	Expansion of Existing CNG station	\$200,000.00	No
MS08077	Hythane Company, LLC				\$144,000.00	\$0.00	Upgrade Station to Hythane	\$144,000.00	No

Total: 17

Closed Contracts

ML08023	City of Villa Park	11/7/2008	10/6/2012		\$6,500.00	\$5,102.50	Upgrade of Existing Refueling Facility	\$1,397.50	Yes
ML08024	City of Anaheim	7/9/2010	7/8/2017	1/8/2018	\$425,000.00	\$425,000.00	9 LPG Buses and 8 CNG Buses	\$0.00	Yes
ML08026	Los Angeles County Department of P	7/20/2009	7/19/2016		\$250,000.00	\$250,000.00	10 LPG Heavy-Duty Vehicles	\$0.00	Yes
ML08027	Los Angeles County Department of P	7/20/2009	1/19/2011	1/19/2012	\$6,901.00	\$5,124.00	34 Vehicles (Diagnostic)	\$1,777.00	Yes
ML08029	City of Gardena	3/19/2009	1/18/2015		\$25,000.00	\$25,000.00	1 Propane Heavy-Duty Vehicle	\$0.00	Yes
ML08030	City of Azusa	5/14/2010	3/13/2016		\$25,000.00	\$25,000.00	1 CNG Heavy-Duty Vehicle	\$0.00	No
ML08031	City of Claremont	3/27/2009	3/26/2013	3/26/2015	\$97,500.00	\$97,500.00	Upgrade of Existing CNG Station, Purchase	\$0.00	Yes
ML08033	County of San Bernardino Public Wo	4/3/2009	2/2/2010		\$14,875.00	\$14,875.00	70 Vehicles (Diagnostic)	\$0.00	Yes
ML08034	County of San Bernardino Public Wo	3/27/2009	7/26/2015		\$150,000.00	\$150,000.00	8 CNG Heavy-Duty Vehicles	\$0.00	Yes
ML08035	City of La Verne	3/6/2009	11/5/2009		\$11,925.00	\$11,925.00	53 Vehicles (Diagnostic)	\$0.00	Yes

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
ML08036	City of South Pasadena	5/12/2009	7/11/2013		\$169,421.00	\$169,421.00	New CNG Station	\$0.00	Yes
ML08037	City of Glendale	5/20/2009	5/19/2015		\$325,000.00	\$325,000.00	13 CNG Heavy-Duty Vehicles	\$0.00	Yes
ML08038	Los Angeles Department of Water an	7/16/2010	7/15/2017		\$1,050,000.00	\$1,050,000.00	42 CNG Heavy-Duty Vehicles	\$0.00	Yes
ML08039	City of Rancho Palos Verdes	6/5/2009	8/4/2015		\$50,000.00	\$50,000.00	2 LPG Transit Buses	\$0.00	Yes
ML08042	City of Ontario, Housing & Municipal	5/1/2009	1/31/2016		\$175,000.00	\$175,000.00	7 CNG Heavy-Duty Vehicles	\$0.00	Yes
ML08044	City of Chino	3/19/2009	3/18/2015		\$25,000.00	\$25,000.00	1 CNG Heavy-Duty Vehicle	\$0.00	Yes
ML08045	City of Santa Clarita	2/20/2009	6/19/2010		\$3,213.00	\$3,150.00	14 Vehicles (Diagnostic)	\$63.00	Yes
ML08046	City of Paramount	2/20/2009	2/19/2015		\$25,000.00	\$25,000.00	1 CNG Heavy-Duty Vehicle	\$0.00	Yes
ML08047	City of Culver City Transportation De	5/12/2009	8/11/2015		\$150,000.00	\$150,000.00	6 CNG Heavy-Duty Vehicles	\$0.00	Yes
ML08048	City of Santa Clarita	2/20/2009	6/19/2015		\$25,000.00	\$25,000.00	1 CNG Heavy-Duty Vehicle	\$0.00	Yes
ML08050	City of Laguna Beach Public Works	8/12/2009	4/11/2016	10/11/2016	\$75,000.00	\$75,000.00	3 LPG Trolleys	\$0.00	Yes
MS08001	Los Angeles County MTA	12/10/2010	6/9/2014		\$1,500,000.00	\$1,499,999.66	Big Rig Freeway Service Patrol	\$0.34	Yes
MS08003	A-Z Bus Sales, Inc.	5/2/2008	12/31/2008	2/28/2009	\$1,480,000.00	\$1,400,000.00	Alternative Fuel School Bus Incentive Progra	\$80,000.00	Yes
MS08004	BusWest	5/2/2008	12/31/2008		\$1,440,000.00	\$1,440,000.00	Alternative Fuel School Bus Incentive Progra	\$0.00	Yes
MS08005	Burrtec Waste Industries, Inc.	10/23/2008	11/22/2014	10/22/2015	\$450,000.00	\$450,000.00	15 H.D. Nat. Gas Vehicles - Azusa	\$0.00	Yes
MS08006	Burrtec Waste Industries, Inc.	10/23/2008	11/22/2014	10/22/2015	\$450,000.00	\$450,000.00	15 H.D. Nat. Gas Vehicles - Saugus	\$0.00	Yes
MS08009	Los Angeles World Airports	12/24/2008	12/23/2014		\$870,000.00	\$870,000.00	29 H.D. Nat. Gas Vehicles	\$0.00	Yes
MS08012	California Cartage Company, LLC	12/21/2009	10/20/2015	4/20/2016	\$480,000.00	\$480,000.00	12 H.D. Nat. Gas Yard Tractors	\$0.00	Yes
MS08014	City of San Bernardino	12/5/2008	6/4/2015		\$390,000.00	\$360,000.00	13 H.D. Nat. Gas Vehicles	\$30,000.00	Yes
MS08015	Yosemite Waters	5/12/2009	5/11/2015		\$180,000.00	\$117,813.60	11 H.D. Propane Vehicles	\$62,186.40	Yes
MS08016	TransVironmental Solutions, Inc.	1/23/2009	12/31/2010	9/30/2011	\$227,198.00	\$80,351.34	Rideshare 2 School Program	\$146,846.66	Yes
MS08017	Omnitrans	12/13/2008	12/12/2015	12/12/2016	\$900,000.00	\$900,000.00	30 CNG Buses	\$0.00	Yes
MS08018	Los Angeles County Department of P	8/7/2009	10/6/2016	4/6/2018	\$60,000.00	\$60,000.00	2 CNG Vehicles	\$0.00	Yes
MS08019	Enterprise Rent-A-Car Company of L	2/12/2010	7/11/2016		\$300,000.00	\$300,000.00	10 CNG Vehicles	\$0.00	Yes
MS08020	Ware Disposal Company, Inc.	11/25/2008	2/24/2016		\$900,000.00	\$900,000.00	30 CNG Vehicles	\$0.00	Yes
MS08021	CalMet Services, Inc.	1/9/2009	1/8/2016	7/8/2016	\$900,000.00	\$900,000.00	30 CNG Vehicles	\$0.00	Yes
MS08022	SunLine Transit Agency	12/18/2008	3/17/2015		\$311,625.00	\$311,625.00	15 CNG Buses	\$0.00	Yes
MS08053	City of Los Angeles, Bureau of Sanit	2/18/2009	12/17/2015		\$400,000.00	\$400,000.00	New LNG/CNG Station	\$0.00	Yes
MS08056	Clean Energy Fuels Corp.	11/26/2009	2/25/2015		\$400,000.00	\$400,000.00	New LNG Station - POLB-Anah. & I	\$0.00	Yes
MS08057	Orange County Transportation Autho	5/14/2009	7/13/2015		\$400,000.00	\$400,000.00	New CNG Station - Garden Grove	\$0.00	Yes
MS08058	Clean Energy Fuels Corp.	11/26/2009	3/25/2016	3/25/2017	\$400,000.00	\$400,000.00	New CNG Station - Ontario Airport	\$0.00	Yes
MS08061	Clean Energy Fuels Corp.	12/4/2009	3/3/2015		\$400,000.00	\$400,000.00	New CNG Station - L.A.-La Cienega	\$0.00	Yes
MS08063	Go Natural Gas	9/25/2009	1/24/2016	1/24/2017	\$400,000.00	\$400,000.00	New CNG Station - Moreno Valley	\$0.00	Yes
MS08064	Hemet Unified School District	1/9/2009	3/8/2015		\$75,000.00	\$75,000.00	Expansion of Existing Infrastructure	\$0.00	Yes
MS08065	Pupil Transportation Cooperative	11/20/2008	7/19/2014		\$10,500.00	\$10,500.00	Existing CNG Station Modifications	\$0.00	Yes
MS08066	Clean Energy Fuels Corp.	11/26/2009	2/25/2015		\$400,000.00	\$400,000.00	New CNG Station - Palm Spring Airport	\$0.00	Yes
MS08067	Trillium CNG	3/19/2009	6/18/2015	6/18/2016	\$311,600.00	\$254,330.00	New CNG Station	\$57,270.00	Yes

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
MS08069	Perris Union High School District	6/5/2009	8/4/2015	8/4/2016	\$225,000.00	\$225,000.00	New CNG Station	\$0.00	Yes
MS08070	Clean Energy Fuels Corp.	11/26/2009	2/25/2015		\$400,000.00	\$400,000.00	New CNG Station - Paramount	\$0.00	Yes
MS08071	ABC Unified School District	1/16/2009	1/15/2015		\$63,000.00	\$63,000.00	New CNG Station	\$0.00	Yes
MS08072	Clean Energy Fuels Corp.	12/4/2009	3/3/2015		\$400,000.00	\$354,243.38	New CNG Station - Burbank	\$45,756.62	Yes
MS08073	Clean Energy Fuels Corp.	11/26/2009	2/25/2015		\$400,000.00	\$400,000.00	New CNG Station - Norwalk	\$0.00	Yes
MS08075	Disneyland Resort	12/10/2008	2/1/2015		\$200,000.00	\$200,000.00	Expansion of Existing CNG Infrastructure	\$0.00	Yes
MS08076	Azusa Unified School District	10/17/2008	11/16/2014	1/31/2017	\$172,500.00	\$172,500.00	New CNG station and maint. Fac. Modificati	\$0.00	Yes
MS08078	SunLine Transit Agency	12/10/2008	6/9/2015	2/9/2016	\$189,000.00	\$189,000.00	CNG Station Upgrade	\$0.00	Yes
MS09002	A-Z Bus Sales, Inc.	11/7/2008	12/31/2009	12/31/2010	\$2,520,000.00	\$2,460,000.00	Alternative Fuel School Bus Incentive Progra	\$60,000.00	Yes
MS09004	A-Z Bus Sales, Inc.	1/30/2009	3/31/2009		\$156,000.00	\$156,000.00	Alternative Fuel School Bus Incentive Progra	\$0.00	Yes
MS09047	BusWest	7/9/2010	12/31/2010	4/30/2011	\$480,000.00	\$480,000.00	Alternative Fuel School Bus Incentive Progra	\$0.00	Yes

Total: 58

Closed/Incomplete Contracts

ML08025	Los Angeles County Department of P	10/30/2009	3/29/2011		\$75,000.00	\$0.00	150 Vehicles (Diagnostic)	\$75,000.00	No
MS08068	Regents of the University of Californi	11/5/2010	11/4/2017	11/4/2019	\$400,000.00	\$0.00	Hydrogen Station	\$400,000.00	No
MS08079	ABC Unified School District	1/16/2009	12/15/2009	12/15/2010	\$50,000.00	\$0.00	Maintenance Facility Modifications	\$50,000.00	No

Total: 3

Open/Complete Contracts

ML08040	City of Riverside	9/11/2009	9/10/2016	3/10/2019	\$455,500.00	\$455,500.00	16 CNG Vehicles, Expand CNG Station & M	\$0.00	Yes
ML08043	City of Desert Hot Springs	9/25/2009	3/24/2016	3/24/2021	\$25,000.00	\$25,000.00	1 CNG Heavy-Duty Vehicle	\$0.00	Yes

Total: 2

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
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FY 2008-2009 Contracts

Open Contracts

ML09033	City of Beverly Hills	3/4/2011	5/3/2017	1/3/2019	\$550,000.00	\$100,000.00	10 Nat. Gas Heavy-Duty Vehicles & CNG St	\$450,000.00	No
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Total: 1

Declined/Cancelled Contracts

ML09017	County of San Bernardino Public Wo	1/28/2010	7/27/2016		\$200,000.00	\$0.00	8 Nat. Gas Heavy-Duty Vehicles	\$200,000.00	No
ML09018	Los Angeles Department of Water an	7/16/2010	9/15/2012		\$850,000.00	\$0.00	Retrofit 85 Off-Road Vehicles w/DECS	\$850,000.00	No
ML09019	City of San Juan Capistrano Public	12/4/2009	11/3/2010		\$10,125.00	\$0.00	Remote Vehicle Diagnostics/45 Vehicles	\$10,125.00	No
ML09022	Los Angeles County Department of P				\$8,250.00	\$0.00	Remote Vehicle Diagnostics/15 Vehicles	\$8,250.00	No
ML09025	Los Angeles County Department of P	10/15/2010	12/14/2012	6/14/2013	\$50,000.00	\$0.00	Remote Vehicle Diagnostics/85 Vehicles	\$50,000.00	No
ML09028	Riverside County Waste Manageme				\$140,000.00	\$0.00	Retrofit 7 Off-Road Vehicles w/DECS	\$140,000.00	No
ML09039	City of Inglewood				\$310,000.00	\$0.00	Purchase 12 H.D. CNG Vehicles and Remot	\$310,000.00	No
ML09040	City of Cathedral City				\$83,125.00	\$0.00	Purchase 3 H.D. CNG Vehicles and Remote	\$83,125.00	No
ML09044	City of San Dimas				\$425,000.00	\$0.00	Install CNG Station and Purchase 1 CNG S	\$425,000.00	No
ML09045	City of Orange				\$125,000.00	\$0.00	Purchase 5 CNG Sweepers	\$125,000.00	No
MS09003	FuelMaker Corporation				\$296,000.00	\$0.00	Home Refueling Apparatus Incentives	\$296,000.00	No

Total: 11

Closed Contracts

ML09007	City of Rancho Cucamonga	2/26/2010	4/25/2012		\$117,500.00	\$62,452.57	Maintenance Facility Modification	\$55,047.43	Yes
ML09008	City of Culver City Transportation De	1/19/2010	7/18/2016	7/18/2017	\$175,000.00	\$175,000.00	8 Nat. Gas Heavy-Duty Vehicles	\$0.00	Yes
ML09010	City of Palm Springs	1/8/2010	2/7/2016		\$25,000.00	\$25,000.00	1 Nat. Gas Heavy-Duty Vehicle	\$0.00	Yes
ML09011	City of San Bernardino	2/19/2010	5/18/2016		\$250,000.00	\$250,000.00	10 Nat. Gas Heavy-Duty Vehicles	\$0.00	Yes
ML09012	City of Gardena	3/12/2010	11/11/2015		\$25,000.00	\$25,000.00	1 Nat. Gas Heavy-Duty Vehicle	\$0.00	Yes
ML09013	City of Riverside Public Works	9/10/2010	12/9/2011	7/31/2013	\$144,470.00	\$128,116.75	Traffic Signal Synchr./Moreno Valley	\$16,353.25	Yes
ML09014	City of Riverside Public Works	9/10/2010	12/9/2011	7/31/2013	\$113,030.00	\$108,495.94	Traffic Signal Synchr./Corona	\$4,534.06	Yes
ML09015	City of Riverside Public Works	9/10/2010	12/9/2011	7/31/2013	\$80,060.00	\$79,778.52	Traffic Signal Synchr./Co. of Riverside	\$281.48	Yes
ML09016	County of San Bernardino Public Wo	1/28/2010	3/27/2014		\$50,000.00	\$50,000.00	Install New CNG Station	\$0.00	Yes
ML09020	County of San Bernardino	8/16/2010	2/15/2012		\$49,770.00	\$49,770.00	Remote Vehicle Diagnostics/252 Vehicles	\$0.00	Yes
ML09021	City of Palm Desert	7/9/2010	3/8/2012		\$39,450.00	\$38,248.87	Traffic Signal Synchr./Rancho Mirage	\$1,201.13	Yes
ML09023	Los Angeles County Department of P	12/10/2010	12/9/2017		\$50,000.00	\$50,000.00	2 Heavy-Duty Alternative Fuel Transit Vehicl	\$0.00	Yes
ML09024	Los Angeles County Department of P	10/15/2010	12/14/2012	6/14/2013	\$400,000.00	\$0.00	Maintenance Facility Modifications	\$400,000.00	No
ML09027	Los Angeles County Department of P	7/23/2010	3/22/2012	6/22/2012	\$150,000.00	\$150,000.00	Freeway Detector Map Interface	\$0.00	Yes
ML09029	City of Whittier	11/6/2009	4/5/2016		\$25,000.00	\$25,000.00	1 Nat. Gas Heavy-Duty Vehicle	\$0.00	Yes
ML09030	City of Los Angeles GSD/Fleet Servi	6/18/2010	6/17/2011		\$22,310.00	\$22,310.00	Remote Vehicle Diagnostics/107 Vehicles	\$0.00	Yes
ML09031	City of Los Angeles, Department of	10/29/2010	10/28/2017		\$825,000.00	\$825,000.00	33 Nat. Gas Heavy-Duty Vehicles	\$0.00	Yes
ML09032	Los Angeles World Airports	4/8/2011	4/7/2018		\$175,000.00	\$175,000.00	7 Nat. Gas Heavy-Duty Vehicles	\$0.00	Yes

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
ML09034	City of La Palma	11/25/2009	6/24/2015		\$25,000.00	\$25,000.00	1 LPG Heavy-Duty Vehicle	\$0.00	Yes
ML09035	City of Fullerton	6/17/2010	6/16/2017	6/16/2018	\$450,000.00	\$450,000.00	2 Heavy-Duty CNG Vehicles & Install CNG	\$0.00	Yes
ML09037	City of Redondo Beach	6/18/2010	6/17/2016		\$50,000.00	\$50,000.00	Purchase Two CNG Sweepers	\$0.00	Yes
ML09038	City of Chino	9/27/2010	5/26/2017		\$250,000.00	\$250,000.00	Upgrade Existing CNG Station	\$0.00	Yes
ML09041	City of Los Angeles, Bureau of Sanit	10/1/2010	9/30/2017		\$875,000.00	\$875,000.00	Purchase 35 H.D. Nat. Gas Vehicles	\$0.00	Yes
ML09042	Los Angeles Department of Water an	12/10/2010	12/9/2017		\$1,400,000.00	\$1,400,000.00	Purchase 56 Dump Trucks	\$0.00	Yes
ML09043	City of Covina	10/8/2010	4/7/2017	10/7/2018	\$179,591.00	\$179,591.00	Upgrade Existing CNG Station	\$0.00	Yes
ML09046	City of Newport Beach	5/20/2010	5/19/2016		\$162,500.00	\$162,500.00	Upgrade Existing CNG Station, Maintenance	\$0.00	Yes
ML09047	Los Angeles County Department of P	8/13/2014	8/12/2015	11/12/2015	\$400,000.00	\$272,924.53	Maintenance Facility Modifications	\$127,075.47	No
MS09001	Administrative Services Co-Op/Long	3/5/2009	6/30/2012	12/31/2013	\$225,000.00	\$150,000.00	15 CNG Taxicabs	\$75,000.00	Yes
MS09005	Gas Equipment Systems, Inc.	6/19/2009	10/18/2010		\$71,000.00	\$71,000.00	Provide Temp. Fueling for Mountain Area C	\$0.00	Yes

Total: 29

Open/Complete Contracts

ML09009	City of South Pasadena	11/5/2010	12/4/2016	3/4/2019	\$125,930.00	\$125,930.00	CNG Station Expansion	\$0.00	Yes
ML09026	Los Angeles County Department of P	10/15/2010	10/14/2017	4/14/2019	\$150,000.00	\$80,411.18	3 Off-Road Vehicles Repowers	\$69,588.82	Yes
ML09036	City of Long Beach Fleet Services B	5/7/2010	5/6/2017	11/6/2022	\$875,000.00	\$875,000.00	Purchase 35 Natural Gas Refuse Trucks	\$0.00	Yes

Total: 3

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
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FY 2010-2011 Contracts

Open Contracts

ML11029	City of Santa Ana	9/7/2012	3/6/2020	3/6/2023	\$262,500.00	\$75,000.00	Expansion of Existing CNG Station, Install N	\$187,500.00	No
ML11032	City of Gardena	3/2/2012	9/1/2018	10/1/2020	\$102,500.00	\$102,500.00	Purchase Heavy-Duty CNG Vehicle, Install	\$0.00	No
ML11045	City of Newport Beach	2/3/2012	8/2/2018	3/2/2021	\$30,000.00	\$0.00	Purchase 1 Nat. Gas H.D. Vehicle	\$30,000.00	No
MS11065	Temecula Valley Unified School Distr	8/11/2012	1/10/2019		\$50,000.00	\$46,112.64	Expansion of Existing CNG Station	\$3,887.36	No

Total: 4

Declined/Cancelled Contracts

ML11038	City of Santa Monica	5/18/2012	7/17/2018		\$400,000.00	\$0.00	Maintenance Facility Modifications	\$400,000.00	No
MS11013	Go Natural Gas, Inc.				\$150,000.00	\$0.00	New CNG Station - Huntington Beach	\$150,000.00	No
MS11014	Go Natural Gas, Inc.				\$150,000.00	\$0.00	New CNG Station - Santa Ana	\$150,000.00	No
MS11015	Go Natural Gas, Inc.				\$150,000.00	\$0.00	New CNG Station - Inglewood	\$150,000.00	No
MS11046	Luis Castro				\$40,000.00	\$0.00	Repower One Heavy-Duty Vehicle	\$40,000.00	No
MS11047	Ivan Borjas				\$40,000.00	\$0.00	Repower One Heavy-Duty Vehicle	\$40,000.00	No
MS11048	Phase II Transportation				\$1,080,000.00	\$0.00	Repower 27 Heavy-Duty Vehicles	\$1,080,000.00	No
MS11049	Ruben Caceras				\$40,000.00	\$0.00	Repower One Heavy-Duty Vehicle	\$40,000.00	No
MS11050	Carlos Arrue				\$40,000.00	\$0.00	Repower One Heavy-Duty Vehicle	\$40,000.00	No
MS11051	Francisco Vargas				\$40,000.00	\$0.00	Repower One Heavy-Duty Vehicle	\$40,000.00	No
MS11053	Jose Ivan Soltero				\$40,000.00	\$0.00	Repower One Heavy-Duty Vehicle	\$40,000.00	No
MS11054	Albino Meza				\$40,000.00	\$0.00	Repower One Heavy-Duty Vehicle	\$40,000.00	No
MS11059	Go Natural Gas				\$150,000.00	\$0.00	New Public Access CNG Station - Paramou	\$150,000.00	No
MS11063	Standard Concrete Products				\$310,825.00	\$0.00	Retrofit Two Off-Road Vehicles under Showc	\$310,825.00	No
MS11070	American Honda Motor Company				\$100,000.00	\$0.00	Expansion of Existing CNG Station	\$100,000.00	No
MS11072	Trillium USA Company DBA Californi				\$150,000.00	\$0.00	New Public Access CNG Station	\$150,000.00	No
MS11077	DCL America Inc.				\$263,107.00	\$0.00	Retrofit of 13 Off-Road Diesel Vehicles with	\$263,107.00	No
MS11083	Cattrac Construction, Inc.				\$500,000.00	\$0.00	Install DECS on Eight Off-Road Vehicles	\$500,000.00	No
MS11084	Ivanhoe Energy Services and Develo				\$66,750.00	\$0.00	Retrofit One H.D. Off-Road Vehicle Under S	\$66,750.00	No
MS11088	Diesel Emission Technologies				\$32,750.00	\$0.00	Retrofit Three H.D. Off-Road Vehicles Under	\$32,750.00	No
MS11089	Diesel Emission Technologies				\$9,750.00	\$0.00	Retrofit One H.D. Off-Road Vehicle Under S	\$9,750.00	No
MS11090	Diesel Emission Technologies				\$14,750.00	\$0.00	Retrofit One H.D. Off-Road Vehicle Under S	\$14,750.00	No

Total: 22

Closed Contracts

ML11007	Coachella Valley Association of Gov	7/29/2011	7/28/2012		\$250,000.00	\$249,999.96	Regional PM10 Street Sweeping Program	\$0.04	Yes
ML11022	City of Anaheim	3/16/2012	7/15/2018		\$150,000.00	\$150,000.00	Purchase of 5 H.D. Vehicles	\$0.00	Yes
ML11026	City of Redlands	3/2/2012	10/1/2018		\$90,000.00	\$90,000.00	Purchase 3 Nat. Gas H.D. Vehicles	\$0.00	Yes
ML11027	City of Los Angeles, Dept. of Genera	5/4/2012	7/3/2015	1/3/2016	\$300,000.00	\$300,000.00	Maintenance Facility Modifications	\$0.00	Yes

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
ML11028	City of Glendale	1/13/2012	5/12/2018		\$300,000.00	\$300,000.00	Purchase 10 H.D. CNG Vehicles	\$0.00	Yes
ML11030	City of Fullerton	2/3/2012	3/2/2018		\$109,200.00	\$109,200.00	Purchase 2 Nat. Gas H.D. Vehicles, Retrofit	\$0.00	Yes
ML11035	City of La Quinta	11/18/2011	11/17/2012		\$25,368.00	\$25,368.00	Retrofit 3 On-Road Vehicles w/DECS	\$0.00	Yes
ML11039	City of Ontario, Housing & Municipal	1/27/2012	9/26/2018		\$180,000.00	\$180,000.00	Purchase 6 Nat. Gas H.D. Vehicles	\$0.00	Yes
ML11042	City of Chino	2/17/2012	4/16/2018		\$30,000.00	\$30,000.00	Purchase 1 Nat. Gas H.D. Vehicle, Repower	\$0.00	Yes
MS11001	Mineral LLC	4/22/2011	4/30/2013	4/30/2015	\$111,827.00	\$103,136.83	Design, Develop, Host and Maintain MSRC	\$8,690.17	Yes
MS11002	A-Z Bus Sales, Inc.	7/15/2011	12/31/2011	6/30/2013	\$1,705,000.00	\$1,705,000.00	Alternative Fuel School Bus Incentive Progra	\$0.00	Yes
MS11003	BusWest	7/26/2011	12/31/2011	12/31/2012	\$1,305,000.00	\$1,305,000.00	Alternative Fuel School Bus Incentive Progra	\$0.00	Yes
MS11004	Los Angeles County MTA	9/9/2011	2/29/2012		\$450,000.00	\$299,743.34	Clean Fuel Transit Service to Dodger Stadiu	\$150,256.66	Yes
MS11006	Orange County Transportation Autho	10/7/2011	2/29/2012	8/31/2012	\$268,207.00	\$160,713.00	Metrolink Service to Angel Stadium	\$107,494.00	Yes
MS11017	CR&R, Inc.	3/2/2012	2/1/2018		\$100,000.00	\$100,000.00	Expansion of existing station - Garden Grove	\$0.00	Yes
MS11018	Orange County Transportation Autho	10/14/2011	1/31/2012		\$211,360.00	\$211,360.00	Express Bus Service to Orange County Fair	\$0.00	Yes
MS11052	Krisda Inc	9/27/2012	6/26/2013		\$120,000.00	\$120,000.00	Repower Three Heavy-Duty Vehicles	\$0.00	Yes
MS11056	The Better World Group	12/30/2011	12/29/2013	12/29/2015	\$206,836.00	\$186,953.46	Programmatic Outreach Services	\$19,882.54	Yes
MS11057	Riverside County Transportation Co	7/28/2012	3/27/2013		\$100,000.00	\$89,159.40	Develop and Implement 511 "Smart Phone"	\$10,840.60	Yes
MS11058	L A Service Authority for Freeway E	5/31/2013	4/30/2014		\$123,395.00	\$123,395.00	Implement 511 "Smart Phone" Application	\$0.00	Yes
MS11061	Eastern Municipal Water District	3/29/2012	5/28/2015		\$11,659.00	\$1,450.00	Retrofit One Off-Road Vehicle under Showc	\$10,209.00	Yes
MS11062	Load Center	9/7/2012	1/6/2016	12/6/2016	\$175,384.00	\$169,883.00	Retrofit Six Off-Road Vehicles under Showc	\$5,501.00	Yes
MS11074	SunLine Transit Agency	5/11/2012	7/31/2012		\$41,849.00	\$22,391.00	Transit Service for Coachella Valley Festival	\$19,458.00	Yes
MS11080	Southern California Regional Rail Au	4/6/2012	7/31/2012		\$26,000.00	\$26,000.00	Metrolink Service to Auto Club Speedway	\$0.00	Yes
MS11086	DCL America Inc.	6/7/2013	10/6/2016		\$500,000.00	\$359,076.96	Retrofit Eight H.D. Off-Road Vehicles Under	\$140,923.04	Yes
MS11087	Cemex Construction Material Pacific,	10/16/2012	2/15/2016		\$448,766.00	\$448,760.80	Retrofit 13 H.D. Off-Road Vehicles Under Sh	\$5.20	Yes
MS11091	California Cartage Company, LLC	4/5/2013	8/4/2016	2/4/2018	\$55,000.00	\$0.00	Retrofit Two H.D. Off-Road Vehicles Under	\$55,000.00	No
MS11092	Griffith Company	2/15/2013	6/14/2016	12/14/2017	\$390,521.00	\$78,750.00	Retrofit 17 H.D. Off-Road Vehicles Under Sh	\$311,771.00	No

Total: 28

Closed/Incomplete Contracts

MS11064	City of Hawthorne	7/28/2012	8/27/2018	8/27/2019	\$175,000.00	\$0.00	New Limited Access CNG Station	\$175,000.00	No
MS11076	SA Recycling, LLC	5/24/2012	9/23/2015		\$424,801.00	\$0.00	Retrofit of 13 Off-Road Diesel Vehicles with	\$424,801.00	No
MS11081	Metropolitan Stevedore Company	9/7/2012	1/6/2016		\$45,416.00	\$0.00	Install DECS on Two Off-Road Vehicles	\$45,416.00	No
MS11082	Baumot North America, LLC	8/2/2012	12/1/2015		\$65,958.00	\$4,350.00	Install DECS on Four Off-Road Vehicles	\$61,608.00	Yes
MS11085	City of Long Beach Fleet Services B	8/23/2013	12/22/2016		\$159,012.00	\$0.00	Retrofit Seven H.D. Off-Road Vehicles Unde	\$159,012.00	No

Total: 5

Open/Complete Contracts

ML11020	City of Indio	2/1/2013	3/31/2019	9/30/2020	\$15,000.00	\$9,749.50	Retrofit one H.D. Vehicles w/DECS, repower	\$5,250.50	Yes
ML11021	City of Whittier	1/27/2012	9/26/2018	6/26/2019	\$210,000.00	\$210,000.00	Purchase 7 Nat. Gas H.D. Vehicles	\$0.00	Yes
ML11023	City of Rancho Cucamonga	4/20/2012	12/19/2018	9/19/2020	\$260,000.00	\$260,000.00	Expand Existing CNG Station, 2 H.D. Vehicl	\$0.00	Yes
ML11024	County of Los Angeles, Dept of Publi	12/5/2014	6/4/2022		\$90,000.00	\$90,000.00	Purchase 3 Nat. Gas H.D. Vehicles	\$0.00	Yes

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
ML11025	County of Los Angeles Department o	3/14/2014	9/13/2021		\$150,000.00	\$150,000.00	Purchase 5 Nat. Gas H.D. Vehicles	\$0.00	Yes
ML11031	City of Culver City Transportation De	12/2/2011	12/1/2018		\$300,000.00	\$300,000.00	Purchase 10 H.D. Nat. Gas Vehicles	\$0.00	Yes
ML11033	City of Los Angeles, Bureau of Sanit	3/16/2012	1/15/2019		\$1,080,000.00	\$1,080,000.00	Purchase 36 LNG H.D. Vehicles	\$0.00	Yes
ML11034	City of Los Angeles, Department of	5/4/2012	1/3/2019		\$630,000.00	\$630,000.00	Purchase 21 H.D. CNG Vehicles	\$0.00	Yes
ML11036	City of Riverside	1/27/2012	1/26/2019	3/26/2021	\$670,000.00	\$670,000.00	Install New CNG Station, Purchase 9 H.D. N	\$0.00	Yes
ML11037	City of Anaheim	12/22/2012	12/21/2019		\$300,000.00	\$300,000.00	Purchase 12 Nat. Gas H.D. Vehicles	\$0.00	Yes
ML11040	City of South Pasadena	5/4/2012	1/3/2019	1/3/2022	\$30,000.00	\$30,000.00	Purchase 1 Nat. Gas H.D. Vehicle	\$0.00	Yes
ML11041	City of Santa Ana	9/7/2012	11/6/2018	1/6/2021	\$265,000.00	\$244,651.86	Purchase 7 LPG H.D. Vehicles, Retrofit 6 H.	\$20,348.14	Yes
ML11043	City of Hemet Public Works	2/3/2012	2/2/2019		\$60,000.00	\$60,000.00	Purchase 2 H.D. Nat. Gas Vehicles	\$0.00	Yes
ML11044	City of Ontario, Housing & Municipal	1/27/2012	6/26/2019		\$400,000.00	\$400,000.00	Expand Existing CNG Station	\$0.00	Yes
MS11008	USA Waste of California, Inc.	10/24/2013	4/23/2020		\$125,000.00	\$125,000.00	Expansion of Existing LCNG Station	\$0.00	Yes
MS11009	USA Waste of California, Inc.	10/24/2013	4/23/2020		\$125,000.00	\$125,000.00	Expansion of Existing LCNG Station	\$0.00	Yes
MS11010	Border Valley Trading	8/26/2011	10/25/2017	4/25/2020	\$150,000.00	\$150,000.00	New LNG Station	\$0.00	Yes
MS11011	EDCO Disposal Corporation	12/30/2011	4/29/2019		\$100,000.00	\$100,000.00	New CNG Station - Signal Hill	\$0.00	Yes
MS11012	EDCO Disposal Corporation	12/30/2011	4/29/2019		\$100,000.00	\$100,000.00	New CNG Station - Buena Park	\$0.00	Yes
MS11016	CR&R Incorporated	4/12/2013	10/11/2019		\$100,000.00	\$100,000.00	New CNG Station - Perris	\$0.00	Yes
MS11019	City of Corona	11/29/2012	4/28/2020		\$225,000.00	\$225,000.00	Expansion of Existing CNG Station	\$0.00	Yes
MS11055	KEC Engineering	2/3/2012	8/2/2018	8/2/2019	\$200,000.00	\$200,000.00	Repower 5 H.D. Off-Road Vehicles	\$0.00	Yes
MS11060	Rowland Unified School District	8/17/2012	1/16/2019	1/16/2020	\$175,000.00	\$175,000.00	New Limited Access CNG Station	\$0.00	Yes
MS11066	Torrance Unified School District	11/19/2012	9/18/2018		\$42,296.00	\$42,296.00	Expansion of Existing CNG Station	\$0.00	Yes
MS11067	City of Redlands	5/24/2012	11/23/2018	11/23/2019	\$85,000.00	\$85,000.00	Expansion of Existing CNG Station	\$0.00	Yes
MS11068	Ryder System Inc.	7/28/2012	10/27/2018		\$175,000.00	\$175,000.00	New Public Access L/CNG Station (Fontana)	\$0.00	Yes
MS11069	Ryder System Inc.	7/28/2012	8/27/2018		\$175,000.00	\$175,000.00	New Public Access L/CNG Station (Orange)	\$0.00	Yes
MS11071	City of Torrance Transit Department	12/22/2012	1/21/2019	1/21/2020	\$175,000.00	\$175,000.00	New Limited Access CNG Station	\$0.00	Yes
MS11073	Los Angeles Unified School District	9/11/2015	2/10/2022		\$175,000.00	\$175,000.00	Expansion of Existing CNG Station	\$0.00	Yes
MS11079	Bear Valley Unified School District	2/5/2013	10/4/2019		\$175,000.00	\$175,000.00	New Limited Access CNG Station	\$0.00	Yes

Total: 30

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
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FY 2011-2012 Contracts

Open Contracts

ML12014	City of Santa Ana	11/8/2013	8/7/2020		\$384,000.00	\$4,709.00	9 H.D. Nat. Gas & LPG Trucks, EV Charging	\$379,291.00	No
ML12018	City of West Covina	10/18/2013	10/17/2020	8/17/2023	\$300,000.00	\$0.00	Expansion of Existing CNG Station	\$300,000.00	No
ML12043	City of Hemet	6/24/2013	9/23/2019		\$60,000.00	\$0.00	Two Heavy-Duty Nat. Gas Vehicles	\$60,000.00	No
ML12045	City of Baldwin Park DPW	2/14/2014	12/13/2020	6/13/2022	\$400,000.00	\$0.00	Install New CNG Station	\$400,000.00	No
ML12057	City of Coachella	8/28/2013	8/27/2019	1/27/2022	\$57,456.00	\$40,375.80	Purchase One Nat. Gas H.D. Vehicle/Street	\$17,080.20	No
ML12090	City of Palm Springs	10/9/2015	10/8/2021		\$21,163.00	\$0.00	EV Charging Infrastructure	\$21,163.00	No
MS12060	City of Santa Monica	4/4/2014	8/3/2017	8/3/2019	\$500,000.00	\$434,202.57	Implement Westside Bikeshare Program	\$65,797.43	No
MS12077	City of Coachella	6/14/2013	6/13/2020		\$225,000.00	\$0.00	Construct New CNG Station	\$225,000.00	No

Total: 8

Pending Execution Contracts

ML12091	City of Bellflower				\$100,000.00	\$0.00	EV Charging Infrastructure	\$100,000.00	No
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Total: 1

Declined/Cancelled Contracts

ML12016	City of Cathedral City	1/4/2013	10/3/2019		\$60,000.00	\$0.00	CNG Vehicle & Electric Vehicle Infrastructur	\$60,000.00	No
ML12038	City of Long Beach Public Works				\$26,000.00	\$0.00	Electric Vehicle Charging Infrastructure	\$26,000.00	No
ML12040	City of Duarte				\$30,000.00	\$0.00	One Heavy-Duty Nat. Gas Vehicle	\$30,000.00	No
ML12044	County of San Bernardino Public Wo				\$250,000.00	\$0.00	Install New CNG Station	\$250,000.00	No
ML12048	City of La Palma	1/4/2013	11/3/2018		\$20,000.00	\$0.00	Two Medium-Duty LPG Vehicles	\$20,000.00	No
ML12052	City of Whittier	3/14/2013	7/13/2019		\$165,000.00	\$0.00	Expansion of Existing CNG Station	\$165,000.00	No
ML12053	City of Mission Viejo				\$60,000.00	\$0.00	EV Charging Infrastructure	\$60,000.00	No
MS12007	WestAir Gases & Equipment				\$100,000.00	\$0.00	Construct New Limited-Access CNG Station	\$100,000.00	No
MS12027	C.V. Ice Company, Inc.	5/17/2013	11/16/2019		\$75,000.00	\$0.00	Purchase 3 Medium-Heavy Duty Vehicles	\$75,000.00	No
MS12030	Complete Landscape Care, Inc.				\$150,000.00	\$0.00	Purchase 6 Medium-Heavy Duty Vehicles	\$150,000.00	No
MS12067	Leatherwood Construction, Inc.	11/8/2013	3/7/2017		\$122,719.00	\$0.00	Retrofit Six Vehicles w/DECS - Showcase III	\$122,719.00	No
MS12070	Valley Music Travel/CID Entertainme				\$99,000.00	\$0.00	Implement Shuttle Service to Coachella Mus	\$99,000.00	No

Total: 12

Closed Contracts

ML12013	City of Pasadena	10/19/2012	3/18/2015	9/18/2015	\$200,000.00	\$65,065.00	Electric Vehicle Charging Infrastructure	\$134,935.00	Yes
ML12019	City of Palm Springs	9/6/2013	7/5/2015		\$38,000.00	\$16,837.00	EV Charging Infrastructure	\$21,163.00	Yes
ML12021	City of Rancho Cucamonga	9/14/2012	1/13/2020		\$40,000.00	\$40,000.00	Four Medium-Duty Nat. Gas Vehicles	\$0.00	Yes
ML12023	County of Los Angeles Internal Servi	8/1/2013	2/28/2015		\$250,000.00	\$192,333.00	EV Charging Infrastructure	\$57,667.00	Yes
ML12037	Coachella Valley Association of Gov	3/14/2013	3/13/2014		\$250,000.00	\$250,000.00	Street Sweeping Operations	\$0.00	Yes
ML12041	City of Anaheim Public Utilities Depa	4/4/2014	11/3/2015	11/3/2017	\$68,977.00	\$38,742.16	EV Charging Infrastructure	\$30,234.84	Yes
ML12042	City of Chino Hills	1/18/2013	3/17/2017		\$87,500.00	\$87,500.00	Expansion of Existing CNG Station	\$0.00	Yes

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
ML12049	City of Rialto Public Works	7/14/2014	9/13/2015		\$30,432.00	\$3,265.29	EV Charging Infrastructure	\$27,166.71	Yes
ML12050	City of Baldwin Park	4/25/2013	4/24/2014	10/24/2014	\$402,400.00	\$385,363.00	EV Charging Infrastructure	\$17,037.00	Yes
ML12054	City of Palm Desert	9/30/2013	2/28/2015		\$77,385.00	\$77,385.00	EV Charging Infrastructure	\$0.00	Yes
ML12056	City of Cathedral City	3/26/2013	5/25/2014		\$25,000.00	\$25,000.00	Regional Street Sweeping Program	\$0.00	Yes
ML12066	City of Manhattan Beach	1/7/2014	4/6/2015		\$5,900.00	\$5,900.00	Electric Vehicle Charging Infrastructure	\$0.00	Yes
MS12001	Los Angeles County MTA	7/1/2012	4/30/2013		\$300,000.00	\$211,170.00	Clean Fuel Transit Service to Dodger Stadium	\$88,830.00	Yes
MS12002	Orange County Transportation Autho	9/7/2012	4/30/2013		\$342,340.00	\$333,185.13	Express Bus Service to Orange County Fair	\$9,154.87	Yes
MS12003	Orange County Transportation Autho	7/20/2012	2/28/2013		\$234,669.00	\$167,665.12	Implement Metrolink Service to Angel Stadium	\$67,003.88	Yes
MS12005	USA Waste of California, Inc.	10/19/2012	8/18/2013		\$75,000.00	\$75,000.00	Vehicle Maintenance Facility Modifications	\$0.00	Yes
MS12006	Waste Management Collection & Re	10/19/2012	8/18/2013		\$75,000.00	\$75,000.00	Vehicle Maintenance Facility Modifications	\$0.00	Yes
MS12012	Rim of the World Unified School Dist	12/20/2012	5/19/2014		\$75,000.00	\$75,000.00	Vehicle Maintenance Facility Modifications	\$0.00	Yes
MS12025	Silverado Stages, Inc.	11/2/2012	7/1/2018		\$150,000.00	\$150,000.00	Purchase Six Medium-Heavy Duty Vehicles	\$0.00	Yes
MS12059	Orange County Transportation Autho	2/28/2013	12/27/2014		\$75,000.00	\$75,000.00	Maintenance Facilities Modifications	\$0.00	Yes
MS12061	Orange County Transportation Autho	3/14/2014	3/13/2017		\$224,000.00	\$114,240.00	Transit-Oriented Bicycle Sharing Program	\$109,760.00	Yes
MS12062	Fraser Communications	12/7/2012	5/31/2014		\$998,669.00	\$989,218.49	Develop & Implement "Rideshare Thursday"	\$9,450.51	Yes
MS12064	Anaheim Transportation Network	3/26/2013	12/31/2014		\$127,296.00	\$56,443.92	Implement Anaheim Circulator Service	\$70,852.08	Yes
MS12065	Orange County Transportation Autho	7/27/2013	11/30/2013		\$43,933.00	\$14,832.93	Ducks Express Service to Honda Center	\$29,100.07	Yes
MS12068	Southern California Regional Rail Au	3/1/2013	9/30/2013		\$57,363.00	\$47,587.10	Implement Metrolink Service to Autoclub Sp	\$9,775.90	Yes
MS12069	City of Irvine	8/11/2013	2/28/2014		\$45,000.00	\$26,649.41	Implement Special Transit Service to Solar	\$18,350.59	Yes
MS12076	City of Ontario, Housing & Municipal	3/8/2013	4/7/2015		\$75,000.00	\$75,000.00	Maintenance Facilities Modification	\$0.00	Yes
MS12078	Penske Truck Leasing Co., L.P.	1/7/2014	1/6/2016		\$75,000.00	\$73,107.00	Maintenance Facility Modifications - Vernon	\$1,893.00	Yes
MS12081	Penske Truck Leasing Co., L.P.	1/7/2014	1/6/2016		\$75,000.00	\$75,000.00	Maintenance Facility Modifications - Santa A	\$0.00	Yes
MS12085	Bear Valley Unified School District	4/25/2013	6/24/2014		\$75,000.00	\$75,000.00	Maintenance Facility Modifications	\$0.00	Yes
MS12087	Los Angeles County MTA	8/29/2013	11/28/2015		\$125,000.00	\$125,000.00	Implement Rideshare Incentives Program	\$0.00	Yes
MS12088	Orange County Transportation Autho	12/6/2013	3/5/2016		\$125,000.00	\$18,496.50	Implement Rideshare Incentives Program	\$106,503.50	Yes
MS12089	Riverside County Transportation Co	10/18/2013	9/17/2015		\$249,136.00	\$105,747.48	Implement Rideshare Incentives Program	\$143,388.52	No
MS12Hom	Mansfield Gas Equipment Systems				\$296,000.00	\$0.00	Home Refueling Apparatus Incentive Progra	\$296,000.00	No

Total: 34

Closed/Incomplete Contracts

ML12051	City of Bellflower	2/7/2014	2/6/2016	5/6/2018	\$100,000.00	\$0.00	EV Charging Infrastructure	\$100,000.00	No
MS12079	Penske Truck Leasing Co., L.P.	1/7/2014	1/6/2016		\$75,000.00	\$0.00	Maintenance Facility Modifications - Boyle H	\$75,000.00	No
MS12084	Airport Mobil Inc.	12/6/2013	5/5/2020		\$150,000.00	\$0.00	Install New CNG Infrastructure	\$150,000.00	No

Total: 3

Open/Complete Contracts

ML12015	City of Fullerton	4/25/2013	11/24/2020	11/24/2021	\$40,000.00	\$40,000.00	HD CNG Vehicle, Expand CNG Station	\$0.00	Yes
ML12017	City of Los Angeles, Bureau of Sanit	6/26/2013	5/25/2020	11/25/2021	\$950,000.00	\$950,000.00	32 H.D. Nat. Gas Vehicles	\$0.00	Yes
ML12020	City of Los Angeles, Department of	9/27/2012	3/26/2019	3/26/2020	\$450,000.00	\$450,000.00	15 H.D. Nat. Gas Vehicles	\$0.00	Yes

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
ML12022	City of La Puente	12/6/2013	6/5/2020		\$110,000.00	\$110,000.00	2 Medium-Duty and Three Heavy-Duty CNG	\$0.00	Yes
ML12039	City of Redlands	2/8/2013	10/7/2019		\$90,000.00	\$90,000.00	Three Heavy-Duty Nat. Gas Vehicles	\$0.00	Yes
ML12046	City of Irvine	8/11/2013	3/10/2021		\$30,000.00	\$30,000.00	One Heavy-Duty Nat. Gas Vehicle	\$0.00	Yes
ML12047	City of Orange	2/1/2013	1/31/2019		\$30,000.00	\$30,000.00	One Heavy-Duty Nat. Gas Vehicle	\$0.00	Yes
ML12055	City of Manhattan Beach	3/1/2013	12/31/2018		\$10,000.00	\$10,000.00	One Medium-Duty Nat. Gas Vehicle	\$0.00	Yes
MS12004	USA Waste of California, Inc.	10/24/2013	11/23/2019		\$175,000.00	\$175,000.00	Construct New Limited-Access CNG Station	\$0.00	Yes
MS12008	Bonita Unified School District	7/12/2013	12/11/2019	4/11/2021	\$175,000.00	\$175,000.00	Construct New Limited-Access CNG Station	\$0.00	Yes
MS12009	Sysco Food Services of Los Angeles	1/7/2014	4/6/2020		\$150,000.00	\$150,000.00	Construct New Public-Access LNG Station	\$0.00	Yes
MS12010	Murrieta Valley Unified School District	4/5/2013	9/4/2019		\$242,786.00	\$242,786.00	Construct New Limited-Access CNG Station	\$0.00	Yes
MS12011	Southern California Gas Company	6/14/2013	6/13/2019	5/28/2021	\$150,000.00	\$150,000.00	Construct New Public-Access CNG Station -	\$0.00	Yes
MS12024	Southern California Gas Company	6/13/2013	12/12/2019	11/12/2020	\$150,000.00	\$150,000.00	Construct New Public-Access CNG Station -	\$0.00	Yes
MS12026	U-Haul Company of California	3/14/2013	3/13/2019		\$500,000.00	\$353,048.26	Purchase 23 Medium-Heavy Duty Vehicles	\$146,951.74	Yes
MS12028	Dy-Dee Service of Pasadena, Inc.	12/22/2012	1/21/2019		\$45,000.00	\$40,000.00	Purchase 2 Medium-Duty and 1 Medium-He	\$5,000.00	Yes
MS12029	Community Action Partnership of Or	11/2/2012	11/1/2018		\$25,000.00	\$14,850.00	Purchase 1 Medium-Heavy Duty Vehicle	\$10,150.00	Yes
MS12031	Final Assembly, Inc.	11/2/2012	11/1/2018		\$50,000.00	\$32,446.00	Purchase 2 Medium-Heavy Duty Vehicles	\$17,554.00	Yes
MS12032	Fox Transportation	12/14/2012	12/13/2018		\$500,000.00	\$500,000.00	Purchase 20 Medium-Heavy Duty Vehicles	\$0.00	Yes
MS12033	Mike Diamond/Phace Management	12/22/2012	12/21/2018	6/21/2021	\$148,900.00	\$148,900.00	Purchase 20 Medium-Heavy Duty Vehicles	\$0.00	No
MS12034	Ware Disposal Company, Inc.	11/2/2012	11/1/2018	5/1/2022	\$133,070.00	\$133,070.00	Purchase 8 Medium-Heavy Duty Vehicles	\$0.00	No
MS12035	Disneyland Resort	1/4/2013	7/3/2019		\$25,000.00	\$18,900.00	Purchase 1 Medium-Heavy Duty Vehicle	\$6,100.00	Yes
MS12036	Jim & Doug Carter's Automotive/VS	1/4/2013	11/3/2018		\$50,000.00	\$50,000.00	Purchase 2 Medium-Heavy Duty Vehicles	\$0.00	Yes
MS12058	Krisda Inc	4/24/2013	1/23/2019		\$25,000.00	\$25,000.00	Repower One Heavy-Duty Off-Road Vehicle	\$0.00	Yes
MS12063	Custom Alloy Light Metals, Inc.	8/16/2013	2/15/2020		\$100,000.00	\$100,000.00	Install New Limited Access CNG Station	\$0.00	Yes
MS12071	Transit Systems Unlimited, Inc.	5/17/2013	12/16/2018		\$21,250.00	\$21,250.00	Expansion of Existing CNG Station	\$0.00	Yes
MS12072	99 Cents Only Stores	4/5/2013	9/4/2019		\$100,000.00	\$100,000.00	Construct New CNG Station	\$0.00	Yes
MS12073	FirstCNG, LLC	7/27/2013	12/26/2019		\$150,000.00	\$150,000.00	Construct New CNG Station	\$0.00	Yes
MS12074	Arcadia Unified School District	7/5/2013	9/4/2019		\$175,000.00	\$175,000.00	Expansion of Existing CNG Infrastructure	\$0.00	Yes
MS12075	CR&R Incorporated	7/27/2013	1/26/2021	1/26/2022	\$100,000.00	\$100,000.00	Expansion of Existing CNG Infrastructure	\$0.00	No
MS12080	City of Pasadena	11/8/2013	8/7/2020	2/7/2022	\$225,000.00	\$225,000.00	Expansion of Existing CNG Infrastructure	\$0.00	Yes
MS12082	City of Los Angeles, Bureau of Sanit	11/20/2013	2/19/2021	2/19/2023	\$175,000.00	\$175,000.00	Install New CNG Infrastructure	\$0.00	Yes
MS12083	Brea Olinda Unified School District	7/30/2015	2/29/2024		\$59,454.00	\$59,454.00	Install New CNG Infrastructure	\$0.00	Yes
MS12086	SuperShuttle International, Inc.	3/26/2013	3/25/2019		\$225,000.00	\$225,000.00	Purchase 23 Medium-Heavy Duty Vehicles	\$0.00	Yes

Total: 34

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
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FY 2012-2014 Contracts

Open Contracts

ML14012	City of Santa Ana	2/13/2015	10/12/2021		\$244,000.00	\$0.00	EV Charging and 7 H.D. LPG Vehicles	\$244,000.00	No
ML14018	City of Los Angeles, Department of	3/6/2015	9/5/2021	12/5/2022	\$810,000.00	\$720,000.00	Purchase 27 H.D. Nat. Gas Vehicles	\$90,000.00	No
ML14019	City of Corona Public Works	12/5/2014	6/4/2020	3/6/2023	\$178,263.00	\$15,468.52	EV Charging, Bicycle Racks, Bicycle Locker	\$162,794.48	No
ML14021	Riverside County Regional Park and	7/24/2014	12/23/2016	12/23/2018	\$250,000.00	\$0.00	Bicycle Trail Improvements	\$250,000.00	No
ML14023	County of Los Angeles Department o	10/2/2015	9/1/2017	9/1/2019	\$230,000.00	\$0.00	Maintenance Fac. Modifications-Westcheste	\$230,000.00	No
ML14024	County of Los Angeles Department o	10/2/2015	9/1/2017	9/1/2019	\$230,000.00	\$0.00	Maintenance Fac. Modifications-Baldwin Par	\$230,000.00	No
ML14025	County of Los Angeles Dept of Publi	10/2/2015	7/1/2018	7/1/2024	\$300,000.00	\$0.00	Construct New CNG Station in Malibu	\$300,000.00	No
ML14026	County of Los Angeles Dept of Publi	10/2/2015	5/1/2023	5/1/2024	\$300,000.00	\$0.00	Construct New CNG Station in Castaic	\$300,000.00	No
ML14027	County of Los Angeles Dept of Publi	10/2/2015	5/1/2023	6/1/2024	\$500,000.00	\$0.00	Construct New CNG Station in Canyon Coun	\$500,000.00	No
ML14030	County of Los Angeles Internal Servi	1/9/2015	3/8/2018	6/8/2019	\$425,000.00	\$25,000.00	Bicycle Racks, Outreach & Education	\$400,000.00	No
ML14049	City of Moreno Valley	7/11/2014	3/10/2021		\$105,000.00	\$48,250.00	One HD Nat Gas Vehicle, EV Charging, Bicy	\$56,750.00	No
ML14055	City of Highland	10/10/2014	3/9/2018	3/9/2019	\$500,000.00	\$0.00	Bicycle Lanes and Outreach	\$500,000.00	No
ML14060	County of Los Angeles Internal Servi	10/6/2017	1/5/2019		\$104,400.00	\$0.00	Electric Vehicle Charging Infrastructure	\$104,400.00	No
ML14062	City of San Fernando	3/27/2015	5/26/2021		\$387,091.00	\$0.00	Expand Existing CNG Fueling Station	\$387,091.00	No
ML14067	City of Duarte	12/4/2015	1/3/2023	6/3/2024	\$60,000.00	\$0.00	Purchase Two Electric Buses	\$60,000.00	No
ML14068	City of South Pasadena	9/12/2014	10/11/2015	1/11/2020	\$10,183.00	\$0.00	Electric Vehicle Charging Infrastructure	\$10,183.00	No
ML14069	City of Beaumont	3/3/2017	3/2/2025		\$200,000.00	\$0.00	Construct New CNG Infrastructure	\$200,000.00	No
ML14070	City of Rancho Cucamonga	9/3/2016	12/2/2018		\$365,245.00	\$0.00	Bicycle Trail Improvements	\$365,245.00	No
ML14072	City of Cathedral City	8/13/2014	1/12/2021		\$136,000.00	\$0.00	Medium & H.D. Vehicles, EV Charging, Bike	\$136,000.00	No
ML14093	County of Los Angeles Dept of Publi	8/14/2015	1/13/2019		\$150,000.00	\$0.00	San Gabriel BikeTrail Underpass Improveme	\$150,000.00	No
MS14037	Penske Truck Leasing Co., L.P.	4/7/2017	6/6/2020		\$75,000.00	\$0.00	Vehicle Maint. Fac. Modifications - Carson	\$75,000.00	No
MS14057	Los Angeles County MTA	11/7/2014	10/6/2019	10/6/2020	\$1,250,000.00	\$0.00	Implement Various Signal Synchronization P	\$1,250,000.00	No
MS14059	Riverside County Transportation Co	9/5/2014	3/4/2018	4/4/2020	\$1,250,000.00	\$0.00	Implement Various Signal Synchronization P	\$1,250,000.00	No
MS14072	San Bernardino County Transportatio	3/27/2015	3/26/2018	3/26/2020	\$1,250,000.00	\$573,800.00	Implement Various Signal Synchronization P	\$676,200.00	No
MS14076	Rialto Unified School District	6/17/2015	2/16/2022		\$225,000.00	\$225,000.00	New Public Access CNG Station	\$0.00	No
MS14079	Waste Resources, Inc.	9/14/2016	8/13/2022	8/13/2023	\$100,000.00	\$0.00	New Limited Access CNG Station	\$100,000.00	No
MS14082	Grand Central Recycling & Transfer	12/4/2015	3/3/2023	3/3/2024	\$150,000.00	\$0.00	Construct New Public Access CNG Station	\$150,000.00	No
MS14083	Hacienda La Puente Unified School	7/10/2015	3/9/2022		\$175,000.00	\$0.00	New Limited Access CNG Station	\$175,000.00	No

Total: 28

Pending Execution Contracts

ML14095	City of South Pasadena				\$142,096.00	\$0.00	Bicycle Trail Improvements	\$142,096.00	No
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Total: 1

Declined/Cancelled Contracts

ML14063	City of Hawthorne				\$32,000.00	\$0.00	Expansion of Existng CNG Infrastructure	\$32,000.00	No
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Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
MS14035	Penske Truck Leasing Co., L.P.				\$75,000.00	\$0.00	Vehicle Maint. Fac. Modifications - Sun Valle	\$75,000.00	No
MS14036	Penske Truck Leasing Co., L.P.				\$75,000.00	\$0.00	Vehicle Maint. Fac. Modifications - La Mirad	\$75,000.00	No
MS14038	Penske Truck Leasing Co., L.P.				\$75,000.00	\$0.00	Vehicle Maint. Fac. Modifications - Fontana	\$75,000.00	No
MS14043	City of Anaheim				\$175,000.00	\$0.00	Expansion of Existing CNG Station	\$175,000.00	No
MS14078	American Honda Motor Co., Inc.	9/4/2015	8/3/2022		\$150,000.00	\$0.00	New Public Access CNG Station	\$150,000.00	No
MS14085	Prologis, L.P.				\$100,000.00	\$0.00	New Limited Access CNG Station	\$100,000.00	No
MS14086	San Gabriel Valley Towing I				\$150,000.00	\$0.00	New Public Access CNG Station	\$150,000.00	No
MS14091	Serv-Wel Disposal				\$100,000.00	\$0.00	New Limited-Access CNG Infrastructure	\$100,000.00	No

Total: 9

Closed Contracts

ML14010	City of Cathedral City	8/13/2014	10/12/2015		\$25,000.00	\$25,000.00	Street Sweeping Operations	\$0.00	Yes
ML14011	City of Palm Springs	6/13/2014	1/12/2016		\$79,000.00	\$78,627.00	Bicycle Racks, Bicycle Outreach & Educatio	\$373.00	Yes
ML14015	Coachella Valley Association of Gov	6/6/2014	9/5/2015		\$250,000.00	\$250,000.00	Street Sweeping Operations	\$0.00	Yes
ML14020	County of Los Angeles Dept of Publi	8/13/2014	1/12/2018		\$150,000.00	\$0.00	San Gabriel BikeTrail Underpass Improveme	\$150,000.00	No
ML14029	City of Irvine	7/11/2014	6/10/2017		\$90,500.00	\$71,056.78	Bicycle Trail Improvements	\$19,443.22	Yes
ML14051	City of Brea	9/5/2014	1/4/2017	7/4/2018	\$450,000.00	\$450,000.00	Installation of Bicycle Trail	\$0.00	Yes
ML14054	City of Torrance	11/14/2014	4/13/2017	7/13/2017	\$350,000.00	\$319,908.80	Upgrade Maintenance Facility	\$30,091.20	Yes
ML14056	City of Redlands	9/5/2014	5/4/2016	5/4/2018	\$125,000.00	\$125,000.00	Bicycle Lanes	\$0.00	Yes
ML14065	City of Orange	9/5/2014	8/4/2015		\$10,000.00	\$10,000.00	Electric Vehicle Charging Infrastructure	\$0.00	Yes
ML14094	City of Yucaipa	6/9/2017	6/8/2018		\$84,795.00	\$84,795.00	Installation of Bicycle Lanes	\$0.00	Yes
MS14001	Los Angeles County MTA	3/6/2015	4/30/2015		\$1,216,637.00	\$1,199,512.68	Clean Fuel Transit Service to Dodger Stadiu	\$17,124.32	Yes
MS14002	Orange County Transportation Autho	9/6/2013	4/30/2014		\$576,833.00	\$576,833.00	Clean Fuel Transit Service to Orange Count	\$0.00	Yes
MS14003	Orange County Transportation Autho	8/1/2013	4/30/2014	10/30/2014	\$194,235.00	\$184,523.00	Implement Metrolink Service to Angel Stadiu	\$9,712.00	Yes
MS14004	Orange County Transportation Autho	9/24/2013	4/30/2014		\$36,800.00	\$35,485.23	Implement Express Bus Service to Solar De	\$1,314.77	Yes
MS14005	Transit Systems Unlimited, Inc.	4/11/2014	2/28/2016		\$515,200.00	\$511,520.00	Provide Expanded Shuttle Service to Hollyw	\$3,680.00	Yes
MS14007	Orange County Transportation Autho	6/6/2014	4/30/2015		\$208,520.00	\$189,622.94	Implement Special Metrolink Service to Ang	\$18,897.06	Yes
MS14008	Orange County Transportation Autho	8/13/2014	5/31/2015		\$601,187.00	\$601,187.00	Implement Clean Fuel Bus Service to Orang	\$0.00	Yes
MS14009	A-Z Bus Sales, Inc.	1/17/2014	12/31/2014	3/31/2015	\$388,000.00	\$388,000.00	Alternative Fuel School Bus Incentive Progra	\$0.00	Yes
MS14039	Waste Management Collection and	7/10/2015	4/9/2016		\$75,000.00	\$75,000.00	Vehicle Maint. Fac. Modifications - Irvine	\$0.00	Yes
MS14040	Waste Management Collection and	7/10/2015	4/9/2016		\$75,000.00	\$75,000.00	Vehicle Maint. Fac. Modifications - Santa An	\$0.00	Yes
MS14047	Southern California Regional Rail Au	3/7/2014	9/30/2014		\$49,203.00	\$32,067.04	Special Metrolink Service to Autoclub Speed	\$17,135.96	Yes
MS14048	BusWest	3/14/2014	12/31/2014	5/31/2015	\$940,850.00	\$847,850.00	Alternative Fuel School Bus Incentive Progra	\$93,000.00	Yes
MS14058	Orange County Transportation Autho	11/7/2014	4/6/2016	4/6/2017	\$1,250,000.00	\$1,250,000.00	Implement Various Signal Synchronization P	\$0.00	Yes
MS14073	Anaheim Transportation Network	1/9/2015	4/30/2017		\$221,312.00	\$221,312.00	Anaheim Resort Circulator Service	\$0.00	Yes
MS14087	Orange County Transportation Autho	8/14/2015	4/30/2016		\$239,645.00	\$195,377.88	Implement Special Metrolink Service to Ang	\$44,267.12	Yes
MS14088	Southern California Regional Rail Au	5/7/2015	9/30/2015		\$79,660.00	\$66,351.44	Special Metrolink Service to Autoclub Speed	\$13,308.56	Yes
MS14089	Top Shelf Consulting, LLC	1/18/2017	8/4/2016	3/31/2017	\$200,000.00	\$200,000.00	Enhanced Fleet Modernization Program	\$0.00	Yes

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
Total: 27									
Closed/Incomplete Contracts									
ML14050	City of Yucaipa	7/11/2014	9/10/2015	7/1/2016	\$84,795.00	\$0.00	Installation of Bicycle Lanes	\$84,795.00	No
ML14066	City of South Pasadena	9/12/2014	7/11/2016	2/11/2018	\$142,096.00	\$0.00	Bicycle Trail Improvements	\$142,096.00	No
MS14092	West Covina Unified School District	9/3/2016	12/2/2022		\$124,000.00	\$0.00	Expansion of Existing CNG Infrastructure	\$124,000.00	No
Total: 3									
Open/Complete Contracts									
ML14013	City of Los Angeles, Bureau of Sanit	10/7/2016	2/6/2025		\$400,000.00	\$400,000.00	Purchase 14 H.D. Nat. Gas Vehicles	\$0.00	Yes
ML14014	City of Torrance	9/5/2014	12/4/2019		\$56,000.00	\$56,000.00	EV Charging Infrastructure	\$0.00	Yes
ML14016	City of Anaheim	4/3/2015	9/2/2021		\$380,000.00	\$380,000.00	Purchase 2 H.D. Vehicles, Expansion of Exi	\$0.00	Yes
ML14022	County of Los Angeles Department o	10/2/2015	5/1/2022		\$270,000.00	\$270,000.00	Purchase 9 H.D. Nat. Gas Vehicles	\$0.00	Yes
ML14028	City of Fullerton	9/5/2014	1/4/2022		\$126,950.00	\$126,950.00	Expansion of Existing CNG Infrastructure	\$0.00	Yes
ML14031	Riverside County Waste Manageme	6/13/2014	12/12/2020		\$90,000.00	\$90,000.00	Purchase 3 H.D. CNG Vehicles	\$0.00	Yes
ML14032	City of Rancho Cucamonga	1/9/2015	1/8/2022		\$113,990.00	\$104,350.63	Expansion of Existing CNG Infrast., Bicycle L	\$9,639.37	Yes
ML14033	City of Irvine	7/11/2014	2/10/2021	2/10/2022	\$60,000.00	\$60,000.00	Purchase 2 H.D. CNG Vehicles	\$0.00	Yes
ML14034	City of Lake Elsinore	9/5/2014	5/4/2021		\$56,700.00	\$56,700.00	EV Charging Stations	\$0.00	Yes
ML14061	City of La Habra	3/11/2016	3/10/2022		\$41,600.00	\$41,270.49	Purchase Two Heavy-Duty Nat. Gas Vehicle	\$329.51	Yes
ML14064	City of Claremont	7/11/2014	7/10/2020	1/10/2021	\$60,000.00	\$60,000.00	Purchase Two Heavy-Duty Nat. Gas Vehicle	\$0.00	Yes
ML14071	City of Manhattan Beach	1/9/2015	11/8/2018		\$22,485.00	\$22,485.00	Electric Vehicle Charging Infrastructure	\$0.00	Yes
MS14041	USA Waste of California, Inc.	9/4/2015	10/3/2021		\$175,000.00	\$175,000.00	Limited-Access CNG Station, Vehicle Maint.	\$0.00	Yes
MS14042	Grand Central Recycling & Transfer	6/6/2014	9/5/2021		\$150,000.00	\$150,000.00	Expansion of Existing CNG Station	\$0.00	Yes
MS14044	TIMCO CNG Fund I, LLC	5/2/2014	11/1/2020		\$150,000.00	\$150,000.00	New Public-Access CNG Station in Santa A	\$0.00	Yes
MS14045	TIMCO CNG Fund I, LLC	6/6/2014	12/5/2020		\$150,000.00	\$150,000.00	New Public-Access CNG Station in Inglewoo	\$0.00	Yes
MS14046	Ontario CNG Station Inc.	5/15/2014	5/14/2020	11/14/2021	\$150,000.00	\$150,000.00	Expansion of Existing CNG Infrastructure	\$0.00	Yes
MS14052	Arcadia Unified School District	6/13/2014	10/12/2020		\$78,000.00	\$78,000.00	Expansion of an Existing CNG Fueling Statio	\$0.00	Yes
MS14053	Upland Unified School District	1/9/2015	7/8/2021		\$175,000.00	\$175,000.00	Expansion of Existing CNG Infrastructure	\$0.00	No
MS14074	Midway City Sanitary District	1/9/2015	3/8/2021		\$250,000.00	\$250,000.00	Limited-Access CNG Station & Facility Modif	\$0.00	Yes
MS14075	Fullerton Joint Union High School Di	7/22/2016	11/21/2023		\$300,000.00	\$293,442.00	Expansion of Existing CNG Infrastructure/Ma	\$6,558.00	Yes
MS14077	County Sanitation Districts of L.A. Co	3/6/2015	5/5/2021		\$175,000.00	\$175,000.00	New Limited Access CNG Station	\$0.00	Yes
MS14080	CR&R Incorporated	6/1/2015	8/31/2021	8/31/2022	\$200,000.00	\$200,000.00	Expansion of Existing CNG Infrastructure/Ma	\$0.00	No
MS14081	CR&R Incorporated	6/1/2015	5/30/2021		\$175,000.00	\$100,000.00	Expansion of Existing CNG Infrastructure/Ma	\$75,000.00	No
MS14084	US Air Conditioning Distributors	5/7/2015	9/6/2021		\$100,000.00	\$100,000.00	Expansion of Existing CNG Infrastructure	\$0.00	Yes
MS14090	City of Monterey Park	5/7/2015	5/6/2021		\$225,000.00	\$225,000.00	Expansion of Existing CNG Infrastructure	\$0.00	Yes
Total: 26									

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
FY 2014-2016 Contracts									
Open Contracts									
ML16005	City of Palm Springs	3/4/2016	10/3/2017		\$40,000.00	\$0.00	Install Bicycle Racks, and Implement Bicycl	\$40,000.00	No
ML16006	City of Cathedral City	4/27/2016	4/26/2022		\$55,000.00	\$0.00	Purchase 1 H.D. Nat. Gas Vehicle, Bicycle	\$55,000.00	No
ML16007	City of Culver City Transportation De	10/6/2015	4/5/2023		\$246,000.00	\$210,000.00	Purchase 7 H.D. Nat. Gas Vehicles, EV Cha	\$36,000.00	No
ML16008	City of Pomona	9/20/2016	11/19/2022	11/19/2023	\$60,000.00	\$0.00	Purchase 3 Medium-Duty and 1 Heavy-Duty	\$60,000.00	No
ML16009	City of Fountain Valley	10/6/2015	2/5/2018	2/5/2019	\$46,100.00	\$0.00	Install EV Charging Infrastructure	\$46,100.00	No
ML16010	City of Fullerton	10/7/2016	4/6/2023		\$370,500.00	\$0.00	Expand Existing CNG Station, EV Charging I	\$370,500.00	No
ML16013	City of Monterey Park	12/4/2015	7/3/2022	7/3/2023	\$90,000.00	\$0.00	Purchase 3 Heavy-Duty Nat. Gas Vehicles	\$90,000.00	No
ML16016	City of Los Angeles, Department of	2/5/2016	12/4/2022		\$630,000.00	\$540,000.00	Purchase 18 Heavy-Duty Nat. Gas Vehicles	\$90,000.00	No
ML16017	City of Long Beach	2/5/2016	8/4/2023		\$1,445,400.00	\$951,400.00	Purchase 50 Medium-Duty, 19 H.D. Nat. Ga	\$494,000.00	No
ML16018	City of Hermosa Beach	10/7/2016	1/6/2023		\$29,520.00	\$23,768.44	Purchase 2 M.D. Nat. Gas Vehicles, Bicycle	\$5,751.56	No
ML16019	City of Los Angeles, Dept of General	1/25/2017	3/24/2020		\$102,955.00	\$0.00	Install EV Charging Infrastructure	\$102,955.00	No
ML16021	City of Santa Clarita	10/7/2016	6/6/2024		\$49,400.00	\$0.00	Install EV Charging Infrastructure	\$49,400.00	No
ML16022	Los Angeles Department of Water an	5/5/2017	3/4/2024		\$360,000.00	\$0.00	Purchase 13 H.D. Nat. Gas Vehicles	\$360,000.00	No
ML16025	City of South Pasadena	6/22/2016	4/21/2023	4/21/2024	\$180,535.00	\$0.00	Purchase H.D. Nat. Gas Vehicle, Expand Ex	\$180,535.00	No
ML16032	City of Azusa	9/9/2016	4/8/2019	4/8/2020	\$474,925.00	\$0.00	Implement a "Complete Streets" Pedestrian	\$474,925.00	No
ML16034	City of Riverside	3/11/2016	10/10/2018	10/10/2019	\$500,000.00	\$0.00	Implement a "Complete Streets" Pedestrian	\$500,000.00	No
ML16036	City of Brea	3/4/2016	12/3/2018		\$500,000.00	\$0.00	Install a Class 1 Bikeway	\$500,000.00	No
ML16038	City of Palm Springs	4/1/2016	7/31/2022		\$230,000.00	\$0.00	Install Bicycle Lanes & Purchase 4 Heavy-D	\$230,000.00	No
ML16039	City of Torrance Transit Department	1/6/2017	9/5/2022		\$32,000.00	\$0.00	Install EV Charging Infrastructure	\$32,000.00	No
ML16040	City of Eastvale	1/6/2017	7/5/2022		\$110,000.00	\$0.00	Install EV Charging Infrastructure	\$110,000.00	No
ML16041	City of Moreno Valley	9/3/2016	1/2/2021	1/2/2022	\$20,000.00	\$0.00	Install EV Charging Infrastructure	\$20,000.00	No
ML16042	City of San Dimas	4/1/2016	12/31/2019	12/31/2020	\$55,000.00	\$0.00	Install EV Charging Infrastructure	\$55,000.00	No
ML16045	City of Anaheim	6/22/2016	8/21/2019		\$275,000.00	\$0.00	Maintenance Facility Modifications	\$275,000.00	No
ML16046	City of El Monte	4/1/2016	5/31/2021	5/31/2023	\$20,160.00	\$0.00	Install EV Charging Infrastructure	\$20,160.00	No
ML16047	City of Fontana	1/6/2017	8/5/2019		\$500,000.00	\$0.00	Enhance an Existing Class 1 Bikeway	\$500,000.00	No
ML16048	City of Placentia	3/26/2016	5/25/2021	6/25/2022	\$90,000.00	\$18,655.00	Install a Bicycle Locker and EV Charging Infr	\$71,345.00	No
ML16052	City of Rancho Cucamonga	9/3/2016	11/2/2019		\$315,576.00	\$0.00	Install Two Class 1 Bikeways	\$315,576.00	No
ML16053	City of Claremont	3/11/2016	7/10/2018	5/10/2020	\$498,750.00	\$0.00	Implement a "Complete Streets" Pedestrian	\$498,750.00	No
ML16054	City of Yucaipa	3/26/2016	7/26/2018	7/26/2019	\$120,000.00	\$0.00	Implement a "Complete Streets" Pedestrian	\$120,000.00	No
ML16056	City of Ontario	3/23/2016	9/22/2020	9/22/2021	\$150,000.00	\$0.00	Expansion of an Existing CNG Station	\$150,000.00	No
ML16057	City of Yucaipa	4/27/2016	1/26/2019		\$380,000.00	\$0.00	Implement a "Complete Streets" Pedestrian	\$380,000.00	No
ML16058	Los Angeles County Department of P	10/7/2016	4/6/2024		\$491,898.00	\$0.00	Purchase 15 H.D. Nat. Gas Vehicles and Ins	\$491,898.00	No
ML16060	City of Cudahy	2/5/2016	10/4/2017		\$73,910.00	\$0.00	Implement an "Open Streets" Event	\$73,910.00	No
ML16064	County of Orange, OC Parks	2/21/2017	10/20/2018		\$204,073.00	\$157,632.73	Implement "Open Streets" Events with Vario	\$46,440.27	No

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
ML16069	City of West Covina	3/10/2017	6/9/2021		\$54,199.00	\$0.00	Installation of EV Charging Infrastructure	\$54,199.00	No
ML16070	City of Beverly Hills	2/21/2017	6/20/2023		\$90,000.00	\$90,000.00	Purchase 3 H.D. Nat. Gas Vehicles	\$0.00	No
ML16071	City of Highland	5/5/2017	1/4/2020		\$264,500.00	\$0.00	Implement a "Complete Streets" Pedestrian	\$264,500.00	No
ML16075	City of San Fernando	10/27/2016	2/26/2019		\$354,000.00	\$0.00	Install a Class 1 Bikeway	\$354,000.00	No
ML16076	City of San Fernando	2/21/2017	8/20/2021		\$100,000.00	\$0.00	Install EV Charging Infrastructure	\$100,000.00	No
ML16077	City of Rialto	5/3/2018	10/2/2021		\$463,216.00	\$0.00	Pedestrian Access Improvements, Bicycle L	\$463,216.00	No
ML16083	City of El Monte	4/1/2016	4/30/2021	4/30/2023	\$57,210.00	\$0.00	Install EV Charging Infrastructure	\$57,210.00	No
ML16122	City of Wildomar	6/8/2018	6/7/2019		\$500,000.00	\$0.00	Install Bicycle Lanes	\$500,000.00	No
MS16029	Orange County Transportation Autho	1/12/2018	6/11/2020		\$851,883.00	\$0.00	Transportation Control Measure Partnership	\$851,883.00	No
MS16030	The Better World Group	12/19/2015	12/31/2017	12/31/2019	\$256,619.00	\$157,056.68	Programmic Outreach Services to the MSR	\$99,562.32	No
MS16082	Riverside County Transportation Co	9/3/2016	8/2/2018		\$590,759.00	\$337,519.71	Extended Freeway Service Patrols	\$253,239.29	No
MS16086	San Bernardino County Transportatio	9/3/2016	10/2/2021		\$800,625.00	\$229,589.91	Freeway Service Patrols	\$571,035.09	No
MS16087	Burrtec Waste & Recycling Services,	7/8/2016	3/7/2023		\$100,000.00	\$0.00	Construct New Limited-Access CNG Station	\$100,000.00	No
MS16090	Los Angeles County MTA	10/27/2016	4/26/2020		\$2,500,000.00	\$0.00	Expansion of the Willowbrook/Rosa Parks Tr	\$2,500,000.00	No
MS16091	San Bernardino County Transportatio	10/7/2016	11/6/2018		\$1,000,000.00	\$0.00	Traffic Signal Synchronization Projects	\$1,000,000.00	No
MS16092	San Bernardino County Transportatio	2/3/2017	1/2/2019		\$242,937.00	\$242,016.53	Implement a Series of "Open Streets" Event	\$920.47	No
MS16093	Orange County Transportation Autho	9/3/2016	3/2/2018	9/2/2018	\$1,553,657.00	\$0.00	Implement a Mobile Ticketing System	\$1,553,657.00	No
MS16094	Riverside County Transportation Co	1/25/2017	1/24/2022		\$1,909,241.00	\$0.00	MetroLink First Mile/Last Mile Mobility Strate	\$1,909,241.00	No
MS16096	San Bernardino County Transportatio	10/27/2016	12/26/2019		\$450,000.00	\$0.00	EV Charging Infrastructure	\$450,000.00	No
MS16097	Walnut Valley Unified School District	10/7/2016	11/6/2022		\$250,000.00	\$175,000.00	Expand CNG Station & Modify Maintenance	\$75,000.00	No
MS16102	Nasa Services, Inc.	2/21/2017	4/20/2023		\$100,000.00	\$90,000.00	Construct a Limited-Access CNG Station	\$10,000.00	No
MS16103	Arrow Services, Inc.	2/3/2017	4/2/2023		\$100,000.00	\$100,000.00	Construct a Limited-Access CNG Station	\$0.00	Yes
MS16105	Huntington Beach Union High School	3/3/2017	7/2/2024		\$175,000.00	\$0.00	Expansion of Existing CNG Infrastructure	\$175,000.00	No
MS16110	City of Riverside	10/6/2017	2/5/2025		\$300,000.00	\$0.00	Expansion of Existing CNG Station and Mai	\$300,000.00	No
MS16112	Orange County Transportation Autho	4/14/2017	3/13/2024		\$1,470,000.00	\$465,000.00	Repower Up to 98 Transit Buses	\$1,005,000.00	No
MS16113	Los Angeles County MTA	5/12/2017	4/11/2024		\$1,875,000.00	\$0.00	Repower Up to 125 Transit Buses	\$1,875,000.00	No
MS16115	City of Santa Monica	4/14/2017	7/13/2025		\$870,000.00	\$256,500.00	Repower 58 Transit Buses	\$613,500.00	No
MS16117	Omnitrans	4/21/2017	6/20/2023		\$175,000.00	\$166,250.00	Expansion of Existing CNG Infrastructure	\$8,750.00	No
MS16118	Omnitrans	4/21/2017	6/20/2023		\$175,000.00	\$166,250.00	Expansion of Existing CNG Infrastructure	\$8,750.00	No
MS16119	Omnitrans	4/21/2017	8/20/2022		\$150,000.00	\$0.00	New Public Access CNG Station	\$150,000.00	No
MS16120	Omnitrans	4/7/2017	5/6/2025		\$945,000.00	\$0.00	Repower 63 Existing Buses	\$945,000.00	No
MS16121	Long Beach Transit	11/3/2017	4/2/2024		\$600,000.00	\$0.00	Purchase 40 New Transit Buses with Near-Z	\$600,000.00	No

Total: 66

Pending Execution Contracts

MS16106	City of Lawndale				\$175,000.00	\$0.00	Expansion of Existing CNG Infrastructure	\$175,000.00	No
MS16123	Orange County Transportation Autho				\$91,760.00	\$0.00	Install La Habra Union Pacific Bikeway	\$91,760.00	No
MS16124	Riverside County Transportation Co				\$253,239.00	\$0.00	Extended Freeway Service Patrols	\$253,239.00	No

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
Total: 3									
Declined/Cancelled Contracts									
ML16014	City of Dana Point				\$153,818.00	\$0.00	Extend an Existing Class 1 Bikeway	\$153,818.00	No
ML16065	City of Temple City				\$500,000.00	\$0.00	Implement a "Complete Streets" Pedestrian	\$500,000.00	No
ML16067	City of South El Monte				\$73,329.00	\$0.00	Implement an "Open Streets" Event	\$73,329.00	No
ML16074	City of La Verne	7/22/2016	1/21/2023		\$365,000.00	\$0.00	Install CNG Fueling Station	\$365,000.00	No
MS16043	LBA Realty Company LLC				\$100,000.00	\$0.00	Install Limited-Access CNG Station	\$100,000.00	No
MS16080	Riverside County Transportation Co				\$1,200,000.00	\$0.00	Passenger Rail Service for Coachella and St	\$1,200,000.00	No
MS16098	Long Beach Transit				\$198,957.00	\$0.00	Provide Special Bus Service to Stub Hub Ce	\$198,957.00	No
MS16104	City of Perris				\$175,000.00	\$0.00	Expansion of Existing CNG Infrastructure	\$175,000.00	No
MS16107	Athens Services				\$100,000.00	\$0.00	Construct a Limited-Access CNG Station	\$100,000.00	No
MS16108	VNG 5703 Gage Avenue, LLC				\$150,000.00	\$0.00	Construct Public-Access CNG Station in Bell	\$150,000.00	No
MS16109	Sanitation Districts of Los Angeles C				\$275,000.00	\$0.00	Expansion of an Existing L/CNG Station	\$275,000.00	No
MS16111	VNG 925 Lakeview Avenue, LLC				\$150,000.00	\$0.00	Construct Public Access CNG Station in Pla	\$150,000.00	No
Total: 12									
Closed Contracts									
ML16015	City of Yorba Linda	3/4/2016	11/3/2017		\$85,000.00	\$85,000.00	Install Bicycle Lanes	\$0.00	No
ML16020	City of Pomona	4/1/2016	2/1/2018	8/1/2018	\$440,000.00	\$440,000.00	Install Road Surface Bicycle Detection Syste	\$0.00	No
ML16026	City of Downey	5/6/2016	9/5/2017		\$40,000.00	\$40,000.00	Install EV Charging Infrastructure	\$0.00	No
ML16028	City of Azusa	9/9/2016	4/8/2018		\$25,000.00	\$25,000.00	Enhance Existing Class 1 Bikeway	\$0.00	Yes
ML16031	City of Cathedral City	12/19/2015	2/18/2017		\$25,000.00	\$25,000.00	Street Sweeping in Coachella Valley	\$0.00	Yes
ML16033	Coachella Valley Association of Gov	4/27/2016	4/26/2018		\$250,000.00	\$250,000.00	Street Sweeping Operations in Coachella Va	\$0.00	Yes
ML16035	City of Wildomar	4/1/2016	11/1/2017		\$500,000.00	\$0.00	Install Bicycle Lanes	\$500,000.00	No
ML16049	City of Buena Park	4/1/2016	11/30/2018		\$429,262.00	\$429,262.00	Installation of a Class 1 Bikeway	\$0.00	Yes
ML16051	City of South Pasadena	2/12/2016	1/11/2017	12/11/2017	\$320,000.00	\$258,691.25	Implement "Open Streets" Event with Variou	\$61,308.75	Yes
ML16066	City of Long Beach Public Works	1/13/2017	9/12/2018		\$75,050.00	\$63,763.62	Implement an "Open Streets" Event	\$11,286.38	Yes
ML16068	Riverside County Dept of Public Heal	12/2/2016	8/1/2018		\$171,648.00	\$171,648.00	Implement "Open Streets" Events with Vario	\$0.00	Yes
ML16073	City of Long Beach Public Works	1/13/2017	7/12/2017		\$50,000.00	\$50,000.00	Implement an "Open Streets" Event	\$0.00	Yes
ML16078	City of Moreno Valley	5/6/2016	11/5/2017	5/5/2018	\$32,800.00	\$31,604.72	Install Bicycle Infrastructure & Implement Bi	\$1,195.28	Yes
MS16001	Los Angeles County MTA	4/1/2016	4/30/2017		\$1,350,000.00	\$1,332,039.84	Clean Fuel Transit Service to Dodger Stadiu	\$17,960.16	Yes
MS16002	Orange County Transportation Autho	10/6/2015	5/31/2016		\$722,266.00	\$703,860.99	Clean Fuel Transit Service to Orange Count	\$18,405.01	Yes
MS16003	Special Olympics World Games Los	10/9/2015	12/30/2015		\$380,304.00	\$380,304.00	Low-Emission Transportation Service for Sp	\$0.00	Yes
MS16004	Mineral LLC	9/4/2015	7/3/2017	1/3/2018	\$27,690.00	\$9,300.00	Design, Develop, Host and Maintain MSRC	\$18,390.00	Yes
MS16084	Transit Systems Unlimited, Inc.	5/6/2016	2/28/2018		\$565,600.00	\$396,930.00	Implement Special Shuttle Service from Uni	\$168,670.00	No
MS16085	Southern California Regional Rail Au	3/11/2016	9/30/2016		\$78,033.00	\$64,285.44	Special MetroLink Service to Autoclub Spee	\$13,747.56	No
MS16089	Orange County Transportation Autho	7/8/2016	4/30/2017		\$128,500.00	\$128,500.00	Implement Special Bus Service to Angel Sta	\$0.00	Yes
MS16095	Orange County Transportation Autho	7/22/2016	5/31/2017		\$694,645.00	\$672,864.35	Implement Special Bus Service to Orange C	\$21,780.65	Yes

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
MS16099	Foothill Transit	3/3/2017	3/31/2017		\$50,000.00	\$50,000.00	Provide Special Bus Service to the Los Ange	\$0.00	Yes
MS16100	Southern California Regional Rail Au	5/5/2017	9/30/2017		\$80,455.00	\$66,169.43	Provide Metrolink Service to Autoclub Speed	\$14,285.57	Yes

Total: 23

Open/Complete Contracts

ML16011	City of Claremont	10/6/2015	6/5/2022		\$90,000.00	\$90,000.00	Purchase 3 Heavy-Duty Nat. Gas Vehicles	\$0.00	Yes
ML16012	City of Carson	1/15/2016	10/14/2022		\$60,000.00	\$60,000.00	Purchase 2 Heavy-Duty Nat. Gas Vehicles	\$0.00	Yes
ML16023	City of Banning	12/11/2015	12/10/2021		\$30,000.00	\$30,000.00	Purchase 1 H.D. Nat. Gas Vehicle	\$0.00	Yes
ML16024	City of Azusa	4/27/2016	2/26/2022		\$30,000.00	\$30,000.00	Purchase 1 H.D. Nat. Gas Vehicle	\$0.00	Yes
ML16027	City of Whittier	1/8/2016	11/7/2022		\$30,000.00	\$30,000.00	Purchase 1 H.D. Nat. Gas Vehicle	\$0.00	Yes
ML16037	City of Rancho Cucamonga	2/5/2016	11/4/2022		\$30,000.00	\$30,000.00	Purchase One Heavy-Duty Natural Gas Vehi	\$0.00	Yes
ML16050	City of Westminster	5/6/2016	7/5/2020	5/5/2022	\$115,000.00	\$93,925.19	Installation of EV Charging Infrastructure	\$21,074.81	No
ML16055	City of Ontario	5/6/2016	5/5/2022		\$270,000.00	\$270,000.00	Purchase Nine Heavy-Duty Natural-Gas Veh	\$0.00	Yes
ML16059	City of Burbank	4/1/2016	2/28/2022		\$180,000.00	\$180,000.00	Purchase 6 H.D. Nat. Gas Vehicles	\$0.00	No
ML16061	City of Murrieta	4/27/2016	1/26/2020		\$11,642.00	\$9,398.36	Installation of EV Charging Infrastructure	\$2,243.64	Yes
ML16062	City of Colton	6/3/2016	7/2/2020		\$25,000.00	\$21,003.82	Installation of EV Charging Infrastructure	\$3,996.18	Yes
ML16063	City of Glendora	3/4/2016	4/3/2022		\$30,000.00	\$30,000.00	Purchase One H.D. Nat. Gas Vehicle	\$0.00	Yes
ML16072	City of Palm Desert	3/4/2016	1/4/2020	1/3/2022	\$56,000.00	\$56,000.00	Installation of EV Charging Infrastructure	\$0.00	Yes
ML16079	City of Yucaipa	4/1/2016	3/31/2020		\$5,000.00	\$5,000.00	Purchase Electric Lawnmower	\$0.00	Yes
MS16081	EDCO Disposal Corporation	3/4/2016	10/3/2022		\$150,000.00	\$150,000.00	Expansion of Existing Public Access CNG St	\$0.00	Yes
MS16088	Transit Systems Unlimited, Inc.	5/12/2017	1/11/2023		\$17,000.00	\$17,000.00	Expansion of Existing CNG Station	\$0.00	Yes
MS16114	City of Norwalk	3/3/2017	6/2/2024		\$45,000.00	\$32,170.00	Purchase 3 Transit Buses	\$12,830.00	Yes
MS16116	Riverside Transit Agency	3/3/2017	1/2/2023		\$10,000.00	\$9,793.00	Purchase One Transit Bus	\$207.00	No

Total: 18

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
FY 2016-2018 Contracts									
Open Contracts									
ML18019	City of Hidden Hills	5/3/2018	5/2/2022		\$49,999.00	\$10,000.00	Purchase Two Light-Duty ZEVs and EVSE	\$39,999.00	No
ML18020	City of Colton	5/3/2018	4/2/2024		\$67,881.00	\$0.00	Purchase One Medium-Duty and One Heavy	\$67,881.00	No
ML18021	City of Signal Hill	4/6/2018	1/5/2022		\$49,661.00	\$0.00	Install EVSE	\$49,661.00	No
ML18022	City of Desert Hot Springs	5/3/2018	1/2/2020		\$50,000.00	\$0.00	Traffic Signal and Synchronization Project	\$50,000.00	No
ML18028	City of Artesia	6/28/2018	3/27/2025		\$50,000.00	\$0.00	Install EVSE	\$50,000.00	No
ML18030	City of Grand Terrace	6/28/2018	3/27/2022		\$45,000.00	\$0.00	Install EVSE	\$45,000.00	No
ML18031	City of Diamond Bar	9/7/2018	11/6/2025		\$73,930.00	\$0.00	Install EVSE, Purchase up to 2-LD Vehicles	\$73,930.00	No
ML18033	City of Duarte	8/8/2018	2/7/2025		\$50,000.00	\$0.00	Purchase 1-HD ZEV	\$50,000.00	No
ML18034	City of Calabasas	6/8/2018	3/7/2022		\$50,000.00	\$0.00	Install EVSE	\$50,000.00	No
ML18035	City of Westlake Village	8/8/2018	11/7/2022		\$50,000.00	\$0.00	Install EVSE	\$50,000.00	No
ML18036	City of Indian Wells	8/8/2018	5/7/2023		\$50,000.00	\$0.00	Install EVSE	\$50,000.00	No
ML18037	City of Westminster	6/28/2018	6/27/2024		\$120,900.00	\$0.00	Install EVSE, Purchase up to 3-LD ZEV & 1-	\$120,900.00	No
ML18039	City of Redlands	6/28/2018	7/27/2024		\$87,000.00	\$0.00	Purchase 1 Medium/Heavy-Duty ZEV and In	\$87,000.00	No
ML18040	City of Agoura Hills	7/13/2018	6/12/2022		\$50,000.00	\$0.00	Install EV Charging Infrastructure	\$50,000.00	No
ML18041	City of West Hollywood	8/8/2018	12/7/2023		\$50,000.00	\$0.00	Install EV Charging Infrastructure	\$50,000.00	No
ML18042	City of San Fernando	6/28/2018	2/27/2024		\$10,000.00	\$0.00	Purchase 1 Lighty-Duty ZEV	\$10,000.00	No
ML18043	City of Yorba Linda	9/7/2018	12/6/2023		\$87,990.00	\$0.00	Install EV Charging Infrastructure	\$87,990.00	No
ML18044	City of Malibu	8/8/2018	10/7/2022		\$50,000.00	\$0.00	Install EV Charging Infrastructure	\$50,000.00	No
ML18045	City of Culver City Transportation De	6/28/2018	6/27/2025		\$51,000.00	\$0.00	Purchase Light-Duty ZEV	\$51,000.00	No
ML18047	City of Whittier	8/8/2018	4/7/2026		\$113,910.00	\$0.00	Purchase 5 Heavy-Duty Near ZEVs	\$113,910.00	No
ML18048	City of Lynwood	6/28/2018	10/27/2024		\$93,500.00	\$0.00	Purchase Up to 3 Medium-Duty Zero-Emissi	\$93,500.00	No
ML18049	City of Downey	7/6/2018	5/5/2023		\$148,260.00	\$0.00	Install EVSE	\$148,260.00	No
ML18050	City of Irvine	9/7/2018	8/6/2028		\$330,490.00	\$0.00	Purchase 1 Medium/Heavy-Duty ZEV and In	\$330,490.00	No
ML18052	City of Garden Grove	8/8/2018	10/7/2022		\$53,593.00	\$0.00	Purchase 4 L.D. ZEVs and Infrastructure	\$53,593.00	No
ML18053	City of Paramount	9/7/2018	3/6/2023		\$72,580.00	\$0.00	Install EV Charging Infrastructure	\$72,580.00	No
ML18054	City of La Habra Heights	8/8/2018	4/7/2022		\$9,200.00	\$0.00	Purchase 1 L.D. ZEV	\$9,200.00	No
ML18062	City of Beaumont	8/8/2018	9/7/2024		\$25,000.00	\$0.00	Purchase 1 Heavy-Duty Near-ZEV	\$25,000.00	No
ML18067	City of Pico Rivera	9/7/2018	11/6/2022		\$83,500.00	\$0.00	Instal EVSE	\$83,500.00	No
ML18071	City of Chino Hills	9/7/2018	10/6/2022		\$30,000.00	\$0.00	Purchase 2 Light-Duty ZEVs and Install EVS	\$30,000.00	No
MS18001	Los Angeles County MTA	6/29/2017	4/30/2018		\$807,945.00	\$468,050.00	Provide Clean Fuel Transit Service to Dodge	\$339,895.00	No
MS18002	Southern California Association of G	6/9/2017	11/30/2018	6/30/2019	\$2,500,000.00	\$419,111.87	Regional Active Transportation Partnership	\$2,080,888.13	No
MS18003	Geographics	2/21/2017	2/20/2021		\$56,953.00	\$49,637.36	Design, Host and Maintain MSRC Website	\$7,315.64	No
MS18004	Orange County Transportation Autho	8/3/2017	4/30/2019		\$503,272.00	\$216,260.53	Provide Special Rail Service to Angel Stadiu	\$287,011.47	No
MS18005	Orange County Transportation Autho	1/5/2018	4/30/2019		\$834,222.00	\$405,709.29	Clean Fuel Bus Service to OC Fair	\$428,512.71	No

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
MS18006	Anaheim Transportation Network	10/6/2017	2/28/2020		\$219,564.00	\$9,488.22	Implement Anaheim Circulator Service	\$210,075.78	No
MS18008	Foothill Transit	1/12/2018	3/31/2019		\$100,000.00	\$49,406.61	Special Transit Service to LA County Fair	\$50,593.39	No
MS18009	Penske Truck Leasing Co., L.P.	8/8/2018	12/7/2020		\$82,500.00	\$0.00	Modify Maintenance Facility & Train Technici	\$82,500.00	No
MS18010	Southern California Regional Rail Au	12/28/2017	7/31/2019		\$351,186.00	\$148,570.20	Implement Special Metrolink Service to Unio	\$202,615.80	No
MS18011	Southern California Regional Rail Au	2/9/2018	6/30/2018		\$239,565.00	\$221,725.12	Special Train Service to Festival of Lights	\$17,839.88	No
MS18012	City of Hermosa Beach	2/2/2018	2/1/2024		\$36,000.00	\$0.00	Construct New Limited-Access CNG Station	\$36,000.00	No
MS18015	Southern California Association of G	7/13/2018	2/28/2021		\$2,000,000.00	\$0.00	Southern California Future Communities Par	\$2,000,000.00	No
MS18018	City of Norwalk	6/8/2018	9/7/2019		\$75,000.00	\$0.00	Vehicle Maintenance Facility Modifications	\$75,000.00	No
MS18023	Riverside County Transportation Co	6/28/2018	6/27/2021		\$500,000.00	\$0.00	Weekend Freeway Service Patrols	\$500,000.00	No
MS18024	Riverside County Transportation Co	6/28/2018	8/27/2021		\$1,500,000.00	\$0.00	Vanpool Incentive Program	\$1,500,000.00	No
MS18029	Irvine Ranch Water District	8/8/2018	10/7/2024		\$190,000.00	\$0.00	Install New Limited Access CNG Station & T	\$190,000.00	No

Total: 45

Pending Execution Contracts

ML18032	City of Arcadia				\$74,650.00	\$0.00	Purchase 1-HD ZEV & 1-HD Near-ZEV	\$74,650.00	No
ML18038	City of Anaheim				\$221,500.00	\$0.00	Purchase 5 Light-Duty ZEVs and Install EVS	\$221,500.00	No
ML18046	City of Santa Ana				\$385,000.00	\$0.00	Purchase 6 Light-Duty ZEVs, 9 Heavy-Duty	\$385,000.00	No
ML18051	City of Rancho Cucamonga				\$227,040.00	\$0.00	Purchase 9 Light-Duty ZEVs, 2 Med-Duty Z	\$227,040.00	No
ML18055	City of Long Beach Fleet Services B				\$622,220.00	\$0.00	Install EVSE	\$622,220.00	No
ML18056	City of Chino				\$103,868.00	\$0.00	Install EV Charging Infrastructure	\$103,868.00	No
ML18057	City of Carson				\$106,250.00	\$0.00	Purchase 5 Zero-Emission Vehicles and Infr	\$106,250.00	No
ML18058	City of Perris				\$94,624.00	\$0.00	Purchase 1 Med. H.D. ZEV and EV Chargin	\$94,624.00	No
ML18059	City of Glendale Water & Power				\$260,500.00	\$0.00	Install Electric Vehicle Charging Infrastructur	\$260,500.00	No
ML18060	County of Los Angeles Internal Servi				\$1,367,610.00	\$0.00	Purchase 29 Light-Duty ZEVs, 1 Med/Heavy	\$1,367,610.00	No
ML18061	City of Moreno Valley				\$25,000.00	\$0.00	Purchase 1 Heavy-Duty Near-ZEV	\$25,000.00	No
ML18063	City of Riverside				\$383,610.00	\$0.00	Expand Existing CNG Fueling Station	\$383,610.00	No
ML18064	City of Eastvale				\$80,400.00	\$0.00	Purchase 2 Med. H.D. Zero Emission Vehicl	\$80,400.00	No
ML18068	City of Mission Viejo				\$125,690.00	\$0.00	Purchase 2 Light-Duty ZEVs, Install EVSE &	\$125,690.00	No
ML18069	City of Torrance				\$187,400.00	\$0.00	Purchase 4 Heavy-Duty Near ZEV and Instal	\$187,400.00	No
ML18070	City of Lomita				\$6,250.00	\$0.00	Purchase 1 Light-Duty ZEV	\$6,250.00	No
ML18072	City of Anaheim				\$239,560.00	\$0.00	Purchase 9 Light-Duty ZEVs & 2 Med/Hvy-D	\$239,560.00	No
ML18074	City of Buena Park				\$107,960.00	\$0.00	EV Charging Infrastructure	\$107,960.00	No
ML18076	City of Culver City Transportation De				\$1,130.00	\$0.00	Purchase Light-Duty ZEV	\$1,130.00	No
ML18077	City of Orange				\$59,776.00	\$0.00	Four Light-Duty ZEV and EV Charging Infr	\$59,776.00	No
ML18078	County of Riverside				\$425,000.00	\$0.00	17 Heavy-Duty Vehicles	\$425,000.00	No
ML18079	City of Pasadena				\$183,670.00	\$0.00	EV Charging Infrastructure	\$183,670.00	No
ML18080	City of Santa Monica				\$121,500.00	\$0.00	EV Charging Infrastructure	\$121,500.00	No
ML18081	City of Beaumont				\$31,870.00	\$0.00	EV Charging Infrastructure	\$31,870.00	No

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
ML18082	City of Los Angeles Bureau of Sanita				\$900,000.00	\$0.00	Purchase Medium-Duty Vehicles and EV Ch	\$900,000.00	No
ML18083	City of San Fernando				\$20,000.00	\$0.00	Implement Traffic Signal Synchronization	\$20,000.00	No
ML18084	City of South El Monte				\$30,000.00	\$0.00	EV Charging Infrastructure	\$30,000.00	No
ML18085	City of Orange				\$50,000.00	\$0.00	Purchase Two Heavy-Duty Near-Zero Emiss	\$50,000.00	No
ML18086	City of Los Angeles Bureau of Street				\$300,000.00	\$0.00	Install Sixty EV Charging Stations	\$300,000.00	No
ML18087	City of Murrieta				\$143,520.00	\$0.00	Install Four EV Charging Stations	\$143,520.00	No
ML18088	City of Big Bear Lake				\$50,000.00	\$0.00	Install Bicycle Trail	\$50,000.00	No
ML18089	City of Glendora				\$50,760.00	\$0.00	Purchase a medium-duty ZEV	\$50,760.00	No
ML18090	City of Santa Clarita				\$122,000.00	\$0.00	Install Eight EV Charging Stations	\$122,000.00	No
ML18091	City of Temecula				\$141,000.00	\$0.00	Install Sixteen EV Charging Stations	\$141,000.00	No
ML18092	City of South Pasadena				\$50,000.00	\$0.00	Procure Two Light-Duty ZEVs and Install EV	\$50,000.00	No
ML18093	City of Monterey Park				\$25,000.00	\$0.00	Purchase Heavy-Duty Near-ZEV	\$25,000.00	No
ML18094	City of Laguna Woods				\$50,000.00	\$0.00	Install Two EV Charging Stations	\$50,000.00	No
ML18095	City of Gardena				\$25,000.00	\$0.00	Purchase Heavy-Duty Near-ZEV	\$25,000.00	No
ML18096	City of Highland				\$70,210.00	\$0.00	Purchase Light-Duty ZEV and Install Three	\$70,210.00	No
ML18097	City of Temple City				\$16,000.00	\$0.00	Purchase Two Light-Duty ZEVs	\$16,000.00	No
ML18098	City of Redondo Beach				\$89,400.00	\$0.00	Install Six EV Charging Stations	\$89,400.00	No
ML18099	City of Laguna Hills				\$50,000.00	\$0.00	Install Six EV Charging Stations	\$50,000.00	No
ML18100	City of Brea				\$56,500.00	\$0.00	Install Thirteen EV Charging Stations	\$56,500.00	No
ML18101	City of Burbank				\$137,310.00	\$0.00	Install Twenty EV Charging Stations	\$137,310.00	No
ML18126	City of Lomita				\$26,500.00	\$0.00	Install bicycle racks and lanes	\$26,500.00	No
ML18127	City of La Puente				\$52,800.00	\$0.00	Purchase One Light-Duty ZEV, One Heavy-	\$52,800.00	No
ML18128	City of Aliso Viejo				\$65,460.00	\$0.00	Purchase Two Light-Duty ZEVs and Install S	\$65,460.00	No
ML18129	City of Yucaipa				\$63,097.00	\$0.00	Install Six EVSEs	\$63,097.00	No
ML18130	City of Lake Forest				\$106,480.00	\$0.00	Install Twenty-One EVSEs	\$106,480.00	No
ML18131	City of Los Angeles				\$19,294.00	\$0.00	Purchase Three Light-Duty ZEVs	\$19,294.00	No
ML18132	City of Montclair				\$50,000.00	\$0.00	Purchase Light-Duty ZEV and Install Eight E	\$50,000.00	No
ML18133	City of Rancho Mirage				\$50,000.00	\$0.00	Traffic Signal Synchronization	\$50,000.00	No
ML18134	City of Los Angeles				\$290,000.00	\$0.00	Purchase Five Medium-Duty ZEVs	\$290,000.00	No
ML18135	City of Azusa				\$55,000.00	\$0.00	Purchase Three Light-Duty ZEVs and One H	\$55,000.00	No
ML18136	City of Orange				\$42,500.00	\$0.00	Purchase Four Light-Duty ZEVs and Install	\$42,500.00	No
ML18137	City of Wildomar				\$50,000.00	\$0.00	Install Bicycle Trail	\$50,000.00	No
ML18138	City of La Canada Flintridge				\$50,000.00	\$0.00	Install Four EVSEs and Install Bicycle Racks	\$50,000.00	No
ML18139	City of Calimesa				\$50,000.00	\$0.00	Install Bicycle Lane	\$50,000.00	No
ML18140	City of Bell Gardens				\$50,000.00	\$0.00	Purchase Two Heavy-Duty Near-ZEVs	\$50,000.00	No
ML18141	City of Rolling Hills Estates				\$40,000.00	\$0.00	Purchase One Light-Duty ZEV and Install T	\$40,000.00	No
ML18142	City of La Quinta				\$51,780.00	\$0.00	Install Two EVSEs	\$51,780.00	No

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
ML18143	City of La Habra				\$80,700.00	\$0.00	Install Two EVSEs	\$80,700.00	No
ML18144	City of Fontana				\$269,090.00	\$0.00	Install Twelve EVSEs	\$269,090.00	No
ML18145	City of Los Angeles				\$1,400,000.00	\$0.00	Provide One Hundred Rebates to Purchaser	\$1,400,000.00	No
ML18146	City of South Gate				\$127,400.00	\$0.00	Purchase Five Light-Duty ZEVs and Install T	\$127,400.00	No
ML18147	City of Palm Springs				\$60,000.00	\$0.00	Install Eighteen EVSEs	\$60,000.00	No
ML18148	City of San Dimas				\$50,000.00	\$0.00	Implement Bike Share Program	\$50,000.00	No
ML18149	City of Sierra Madre				\$50,000.00	\$0.00	Implement Bike Share Program	\$50,000.00	No
ML18150	City of South El Monte				\$20,000.00	\$0.00	Implement Bike Share Program	\$20,000.00	No
ML18151	County of San Bernardino Departme				\$200,000.00	\$0.00	Purchase Eight Heavy-Duty Near Zero Emis	\$200,000.00	No
ML18152	County of San Bernardino Flood Con				\$108,990.00	\$0.00	Purchase Five Heavy-Duty Near Zero Emissi	\$108,990.00	No
ML18153	City of Cathedral City				\$52,215.00	\$0.00	Install EV Charging Infrastructure	\$52,215.00	No
ML18154	City of Hemet				\$30,000.00	\$0.00	Purchase Two Light-Duty ZEV and EV Char	\$30,000.00	No
ML18155	City of Claremont				\$50,000.00	\$0.00	Install EV Charging Infrastructure	\$50,000.00	No
ML18156	City of Covina				\$63,800.00	\$0.00	Purchase Four Light-Duty ZEVs and EV Cha	\$63,800.00	No
ML18157	City of Los Angeles Bureau of Street				\$85,000.00	\$0.00	Purchase One Medium-Duty ZEV	\$85,000.00	No
ML18158	City of Inglewood				\$146,000.00	\$0.00	Purchase 4 Light-Duty Zero Emission, 4 Me	\$146,000.00	No
ML18159	City of Rialto				\$135,980.00	\$0.00	Purchase Nine Light-Duty ZEVs and EV Cha	\$135,980.00	No
ML18160	City of Irwindale				\$14,263.00	\$0.00	Purchase Two Light-Duty ZEVs	\$14,263.00	No
ML18161	City of Indio				\$50,000.00	\$0.00	Purchase 1 Light-Duty Zero Emission, 1 Hea	\$50,000.00	No
ML18162	City of Costa Mesa				\$148,210.00	\$0.00	Purchase Four Light-Duty ZEVs and EV Cha	\$148,210.00	No
ML18163	City of San Clemente				\$85,000.00	\$0.00	Purchase Three Light-Duty ZEVs and EV Ch	\$85,000.00	No
ML18164	City of Pomona				\$200,140.00	\$0.00	Purchase Three Heavy-Duty ZEVs	\$200,140.00	No
ML18165	City of Baldwin Park				\$49,030.00	\$0.00	Expansion of Existing CNG Infrastructure	\$49,030.00	No
ML18166	City of Placentia				\$25,000.00	\$0.00	Purchase One Heavy-Duty Near-Zero Emiss	\$25,000.00	No
ML18167	City of Beverly Hills				\$50,000.00	\$0.00	Purchase Two Heavy-Duty Near-Zero Emiss	\$50,000.00	No
ML18168	City of Maywood				\$7,059.00	\$0.00	Purchase EV Charging Infrastructure	\$7,059.00	No
ML18169	City of Alhambra				\$111,980.00	\$0.00	Install EV Charging Infrastructure	\$111,980.00	No
ML18170	City of Laguna Niguel				\$85,100.00	\$0.00	Purchase Two Light-Duty ZEVs and EV Cha	\$85,100.00	No
ML18171	City of El Monte				\$119,757.00	\$0.00	Purchase One Heavy-Duty ZEVs and EV Ch	\$119,757.00	No
ML18172	City of Huntington Park				\$65,450.00	\$0.00	Purchase One Heavy-Duty ZEV	\$65,450.00	No
ML18173	City of Manhattan Beach				\$49,000.00	\$0.00	Purchase Two Light-Duty ZEVs and EV Cha	\$49,000.00	No
ML18174	City of Bell				\$25,000.00	\$0.00	Purchase One Heavy-Duty ZEV	\$25,000.00	No
MS18014	Regents of the University of Californi				\$254,795.00	\$0.00	Planning for EV Charging Infrastructure Inve	\$254,795.00	No
MS18016	Southern California Regional Rail Au				\$87,764.00	\$0.00	Special Train Service to Auto Club Speedwa	\$87,764.00	No
MS18025	Los Angeles County MTA				\$1,324,560.00	\$0.00	Special Bus and Train Service to Dodger Sta	\$1,324,560.00	No
MS18026	Omnitrans				\$83,000.00	\$0.00	Modify Vehicles Maintenance Facility and Tr	\$83,000.00	No
MS18027	City of Gardena				\$365,000.00	\$0.00	Install New Limited Access CNG, Modify Mai	\$365,000.00	No

Cont.#	Contractor	Start Date	Original End Date	Amended End Date	Contract Value	Remitted	Project Description	Award Balance	Billing Complete?
MS18065	San Bernardino County Transportatio				\$2,000,000.00	\$0.00	Implement Metrolink Line Fare Discount Pro	\$2,000,000.00	No
MS18066	El Dorado National				\$100,000.00	\$0.00	Install New Limited-Access CNG Station	\$100,000.00	No
MS18073	Los Angeles County MTA				\$2,000,000.00	\$0.00	Purchase 40 Zero-Emission Transit Buses	\$2,000,000.00	No
MS18102	Orange County Transportation Autho				\$1,146,000.00	\$0.00	Implement OC Flex Micro-Transit Pilot Proje	\$1,146,000.00	No
MS18103	Orange County Transportation Autho				\$642,000.00	\$0.00	Install Hydrogen Detection System	\$642,000.00	No
MS18104	Orange County Transportation Autho				\$212,000.00	\$0.00	Implement College Pass Transit Fare Subsi	\$212,000.00	No
MS18105	Southern California Regional Rail Au				\$252,696.00	\$0.00	Special Train Service to the Festival of Light	\$252,696.00	No
MS18106	R.F. Dickson Co., Inc.				\$265,000.00	\$0.00	Expansion of Existing Infrastructure/Mechani	\$265,000.00	No
MS18107	Huntington Beach Union High School				\$225,000.00	\$0.00	Expansion of Existing Infrastructure	\$225,000.00	No
MS18108	Capistrano Unified School District				\$116,000.00	\$0.00	Expansion of Existing Infrastructure	\$116,000.00	No
MS18109	City of South Gate				\$175,000.00	\$0.00	Install New Limited-Access CNG Infrastructu	\$175,000.00	No
MS18110	Mountain View School District				\$275,000.00	\$0.00	Install New Limited-Access CNG Infrastructu	\$275,000.00	No
MS18111	Newport-Mesa Unified School Distric				\$175,000.00	\$0.00	Expansion of Existing CNG Infrastructure	\$175,000.00	No
MS18112	Banning Unified School District				\$275,000.00	\$0.00	Install New CNG Infrastructure	\$275,000.00	No
MS18113	City of Torrance				\$100,000.00	\$0.00	Expansion of Existing CNG Infrastructure	\$100,000.00	No
MS18114	Los Angeles County Department of P				\$175,000.00	\$0.00	Install New Limited-Access CNG Infrastructu	\$175,000.00	No
MS18115	City of Commerce				\$275,000.00	\$0.00	Expansion of Existing L/CNG Infrastructure	\$275,000.00	No
MS18116	Los Angeles County Department of P				\$175,000.00	\$0.00	Install New Limited-Access CNG Infrastructu	\$175,000.00	No
MS18117	City of San Bernardino				\$240,000.00	\$0.00	Expansion of Existing CNG Infrastructure/Me	\$240,000.00	No
MS18118	City of Beverly Hills				\$85,272.00	\$0.00	Expansion of Existing CNG Infrastructure	\$85,272.00	No
MS18119	LBA Realty Company XI LP				\$100,000.00	\$0.00	Install New Limited-Access CNG Infrastructu	\$100,000.00	No
MS18120	City of Redondo Beach				\$275,000.00	\$0.00	Install New Limited-Access CNG Infrastructu	\$275,000.00	No
MS18121	City of Montebello				\$70,408.00	\$0.00	Expansion of Existing CNG Infrastructure	\$70,408.00	No
MS18122	Universal Waste Systems, Inc.				\$200,000.00	\$0.00	Install New Limited Access CNG Infrastructur	\$200,000.00	No
MS18123	City Rent A Bin DBA Serv-Wel Dispo				\$200,000.00	\$0.00	Install New Limited-Access CNG Infrastructu	\$200,000.00	No
MS18124	County Sanitation Districts of Los An				\$275,000.00	\$0.00	Install New Limited-Access CNG Infrastructu	\$275,000.00	No
MS18125	US Gain				\$200,000.00	\$0.00	Install New Limited-Access CNG Infrastructu	\$200,000.00	No
MS18175	UC Irvine The Henry Samueli School				\$1,000,000.00	\$0.00	Expansion of Existing Hydrogran Station	\$1,000,000.00	No

Total: 126

Declined/Cancelled Contracts

ML18075	City of Orange				\$25,000.00	\$0.00	One Heavy-Duty Vehicle	\$25,000.00	No
MS18013	California Energy Commission				\$3,000,000.00	\$0.00	Advise MSRC and Administer Hydrogen Infr	\$3,000,000.00	No
MS18017	City of Banning				\$225,000.00	\$0.00	Expansion of Existing CNG Infrastructure	\$225,000.00	No

Total: 3

[↑ Back to Agenda](#)

BOARD MEETING DATE: November 2, 2018

AGENDA NO. 26

REPORT: California Air Resources Board Monthly Meeting

SYNOPSIS: The California Air Resources Board met on September 27 and 28 and on October 25, 2018 in Sacramento, CA. The following are summaries of those meetings.

RECOMMENDED ACTION:
Receive and file.

Judith Mitchell, Member
SCAQMD Governing Board

dg

The California Air Resources Board (CARB or Board) held a meeting on September 27 and 28, 2018 in Sacramento at the California Environmental Protection Agency Headquarters Building. Key items presented are summarized below.

CONSENT ITEMS

18-7-1: Public Meeting to Consider the California Infrastructure State Implementation Plan Revisions for the 0.070 Parts Per Million Federal 8-Hour Ozone Standard

The Board adopted revisions to the California Infrastructure State Implementation Plan (Infrastructure SIP) for the 0.070 parts per million (ppm) federal 8-hour ozone standard. The revisions address requirements that California demonstrates it has the infrastructure to meet the federal ozone standard as revised in 2015. This includes state's authority to adopt, implement, and enforce regulations in addition to sufficient personnel and resources. Infrastructure SIPs also include an "interstate transport" assessment of potential pollution impacts between upwind and downwind states. CARB's Infrastructure SIP demonstrates that California does not significantly contribute to nonattainment or interfere with maintenance of the 0.070 ppm 8-hour ozone standard in neighboring states. The Board directed CARB staff to submit the California Infrastructure SIP revisions to U.S. EPA.

18-7-2: Public Hearing to Consider Environmental Comments from John R. Lawson Rock & Oil, Inc. Regarding Board Item 18-1-4

The Board approved staff's responses to environmental comments submitted by John R. Lawson Rock & Oil, Inc., on July 18, 2018. These comments were made during the 15-day comment period for the California Phase 2 Greenhouse Gas rulemaking action taken at the February 8, 2018, Board hearing titled "Public Hearing to Consider Proposed California Greenhouse Gas Emissions Standards for Medium- and Heavy-Duty Engines and Vehicles, and Proposed Amendments to the Tractor-Trailer Greenhouse Gas Regulation."

DISCUSSION ITEMS

18-7-3: Public Meeting to Consider Assembly Bill 617 Community Air Protection Program – Community Selection and Program Requirements

The Board approved the Final Draft Community Air Protection Blueprint (Blueprint) and the selection of ten initial communities for the first year of implementation under the AB 617 Community Air Protection Program (Program). The Blueprint defines new community-focused actions to reduce air pollution in disproportionately burdened communities throughout the State. This includes development of new statewide regulatory strategies, targeted incentive funding, new tools and resources for making data more accessible, and supporting community participation through community air grants. The Blueprint also includes detailed requirements for preparing community emission reduction programs and conducting community air monitoring. Over the coming year, air districts will work with community members to develop community emissions reduction programs and implement community-level air monitoring in the ten initial communities. These community-level programs will be developed through a transparent, community-driven process. The initial communities will serve as models for identifying strategies and approaches that can be implemented in communities with similar air pollution challenges. CARB will also be moving forward with development of a comprehensive set of mobile source strategies. The Board also certified the Final Environmental Analysis, and approved the written responses to comments received on the Draft Environmental Analysis.

SCAQMD Staff Comments/Testimony: Wayne Nastri, Executive Officer, provided testimony to highlight SCAQMD's extensive outreach efforts to ensure that public input is integrated into the AB 617 program, and the enormous challenges in addressing the local air quality issues in disadvantaged communities in the South Coast District. He emphasized the strong collaboration between SCAQMD and CARB staff in developing the guidelines for this program, and stressed the need for sustained funding for this important program. He provided two key recommendations, which were to emphasize that this program does not substantially alter the regulatory authorities of CARB or SCAQMD, and that the priority of the AB 617 efforts must be work that results in actual local air quality improvements.

18-7-4: Public Hearing to Consider Amendments to the Low Carbon Fuel Standard Regulation and to the Regulation on Commercialization of Alternative Diesel Fuels

The Board approved amendments designed to strengthen the Low Carbon Fuel Standard regulation through 2030 in line with the Senate Bill 32 greenhouse gas reduction goals. The amendments will also increase deployment of zero-emission vehicles, adopt a credit generating protocol for carbon capture and sequestration, establish third-party verification of program data, and streamline the implementation of the regulation. As part of this rulemaking, the Board made amendments to the Alternative Diesel Fuels regulation based on a supplemental environmental analysis related to NOx emissions. The Board also certified the Final Environmental Analysis and approved the written response to comments received on the Draft Environmental Analysis.

18-7-5: Public Hearing to Consider Proposed Amendments to the Low-Emission Vehicle III Greenhouse Gas Emission Regulation

The Board adopted amendments to the Low-Emission Vehicle III (LEV III) greenhouse gas (GHG) emission regulation to clarify that the "deemed to comply" option for model years 2021 through 2025 is applicable only if the currently adopted federal regulations remain in effect. The "deemed to comply" option was adopted by CARB to allow compliance with U.S. EPA GHG standards as an alternative to California's regulation for vehicle model years 2012 to 2025. At the time, the U.S. EPA regulation was comparable to the GHG emission reductions in the California LEV III program. In 2018, however, U.S. EPA along with the National Highway Traffic Safety Administration published a Notice of Proposed Rulemaking that, if finalized, will weaken U.S. EPA's GHG standards. The approved amendments by the Board will ensure that any weakening of the federal standards will not reduce the requirements on model year 2021 to 2025 vehicles in California.

18-7-6: Public Hearing to Consider the Proposed Innovative Clean Transit Regulation, a Replacement of the Fleet Rule for Transit Agencies

The Board heard an update on the proposed Innovative Clean Transit (ICT) Regulation that seeks to transition buses in California to zero-emission by 2040. CARB staff is working with transit agencies to develop long-term strategies to transition buses to zero-emission technologies while maintaining or enhancing transit services and providing environmental benefits, especially in disadvantaged communities. The proposed ICT regulation will encourage early action and seek to ensure sufficient funding opportunities are available to transition to zero-emission buses. CARB staff anticipates the Board will consider approval of the ICT regulation in January 2019.

The California Air Resources Board's (CARB or Board) held a meeting on October 25, 2018 in Sacramento at the California Environmental Protection Agency Headquarters Building. Key items presented are summarized below.

CONSENT ITEMS

18-8-1: Public Meeting to Consider Six Research Proposals

The Board approved six research proposals developed in response to the Board-approved research projects for Fiscal Year 2018-2019. The approved research proposals are:

1. "Real-world Tire and Brake-wear Emissions," UC Riverside, \$400,000, Proposal No. 2817-289.
2. "Hybridization and Full Electrification Potential in Off-Road Applications," UC Riverside, \$350,000, Proposal No. 2818-289.
3. "Screening Method and Map for Evaluating Transportation Access Disparities and other Built Environment-related Social Determinants of Health," UC Los Angeles, \$349,812, Proposal No. 2819-289.
4. "Estimating Induced Travel from Capacity Expansions on Congested Corridors," UC Berkeley, \$249,371, Proposal No. 2820-289.
5. "Environmental Chamber Experiments to Improve Secondary Organic Aerosol Model Prediction," UC Riverside, \$450,000, Proposal No. 2821-289.
6. "Characterizing the Potential Health and Equity Impacts of Oil and Gas Extraction and Production Activities in California," UC Berkeley, \$299,988, Proposal No. 2822-289.

18-8-2: Public Meeting to Consider the Proposed Submission of California's Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities into the California State Implementation Plan

The Board adopted a resolution directing staff to submit California's Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities (Oil and Gas GHG standards regulation) to U.S. EPA as a revision to the California State Implementation Plan. The Oil and Gas GHG standards regulation in combination with local air district rules was determined by CARB staff to achieve an equivalent or greater level of control of ozone-forming emissions than the U.S. EPA Control Technology Guideline (CTG) entitled, *Control Techniques Guidelines for the Oil and Natural Gas Industry*. Submittal of the Oil and Gas GHG standards regulation to U.S. EPA will fulfill Clean Air Act Reasonably Available Control Technology requirements.

DISCUSSION ITEMS

18-8-4: Public Hearing to Consider Proposed Amendments to Enhanced Vapor Recovery Regulations to Standardize Gas Station Nozzle Spout Dimensions to Help Address Storage Tank Overpressure

The Board adopted amendments to the Enhanced Vapor Recovery Regulations to standardize gas station nozzle spout dimensions. This amendment was needed to reduce emissions from gas station storage tanks. Poor seals at the interface between vapor recovery nozzles and newer vehicle fill pipes contribute to overpressure of the gas station storage tanks and venting of gasoline vapors. Standardized nozzle spouts and improved compatibility with newer motor vehicle fill pipes will reduce vapor release from gasoline storage tanks thereby reducing near-source exposure to benzene as well as ozone formation. The amendments include 15-day changes to consider additional spout modifications.

18-8-5: Public Hearing to Consider Proposed Amendments to California Specifications for Fill Pipes and Openings of Motor Vehicle Fuel Tanks

The Board adopted amendments to Vehicle Fill Pipe Specifications to ensure new motor vehicle fill pipes form a good seal with Phase II recovery nozzles certified for use at California gasoline stations. The Vehicle Fill Pipe amendment together with the nozzle spout amendments in item 18-8-4 will provide for more secure seals at the nozzles/vehicle fill pipes interface reducing gasoline station overpressure and gasoline vapor venting. This amendment includes 15-day changes.

18-8-6: Public Meeting to Consider Approval of the Proposed Fiscal Year 2018-19 Funding Plan for Clean Transportation Incentives

The Board approved the Proposed Fiscal Year 2018-19 Funding Plan for Clean Transportation Incentives (2018-2019 Funding Plan). The 2018-2019 Funding Plan describes proposed investments from two related funding sources: the Low Carbon Transportation Program funded with Cap-and-Trade auction proceeds and the Air Quality Improvement Program. These programs provide incentives for clean vehicle and equipment projects to reduce greenhouse gas emissions and air pollution with a priority on benefiting disadvantaged and low-income communities and low-income households. The 2018-2019 Funding Plan builds on investments from previous funding cycles by continuing incentives for zero-emission and plug-in passenger cars, clean trucks and buses, and advanced technology freight projects.

SCAQMD Staff Comments/Testimony: Staff testified in support of the proposed 2018-2019 Funding Plan for Clean Transportation, focusing on the \$55 million for the Freight Equipment Advanced Demonstration and Pilot Commercial Deployment Project. Staff suggested retaining eligibility for new purchases for refuse trucks for the 8.9L low-NOx engine, and an increase in voucher amounts for 11.9L low-NOx engines for repowers and new purchases.

18-8-7: Public Meeting to Consider the San Joaquin Valley Supplement to the 2016 State Strategy for the State Implementation Plan

The Board adopted the San Joaquin Valley Supplement to the 2016 State Strategy for the State Implementation Plan (Valley State SIP Strategy). The Valley State SIP Strategy describes State commitments for additional mobile source measures in the Valley. These measures will accelerate deployment of cleaner on-road Heavy Duty vehicles in addition to agricultural and other off-road equipment. The Valley State SIP Strategy will help provide the emission reductions needed to attain the health-based annual and 24-hour federal air quality standards for PM_{2.5} in the San Joaquin Valley by 2025. The Board will consider the complete SJV PM_{2.5} plan, including District stationary source measures at the January 2019 Board Meeting.

18-8-11: Public Meeting to Consider the 2018 Updates to the California State Implementation Plan

The Board approved the 2018 Updates to the California State Implementation Plan (2018 SIP Updates). The 2018 SIP Updates are needed to address recent court decisions regarding U.S. EPA guidance on SIP development. The 2018 SIP Updates address reasonable further progress-related components for several recent ozone and PM_{2.5} SIP submittals by CARB. These include SIPs for Coachella Valley, Eastern Kern County, Imperial County, Sacramento Metropolitan Area, San Joaquin Valley, South Coast, Ventura County, and Western Mojave Desert. The 2018 SIP Updates also include enhanced State contingency measures for these areas, San Diego County, and Western Nevada County, in the event the areas fail to meet certain Clean Air Act deadlines. The 2018 SIP Updates will be submitted to U.S. EPA as a revision to the California SIP.

18-8-3: Public Hearing to Consider Proposed California Certification Procedures for Light-Duty Engine Packages for Use in New Light-Duty Specially-Produced Motor Vehicles for 2019 and Subsequent Model Years

The Board adopted the proposed California Regulation and Certification Procedures for Light-Duty Engine Packages for Use in New Light-Duty Specially-Produced Motor Vehicles (SPMV) for 2019 and Subsequent Model Years (SPMV regulation and certification procedures). The SPMV regulation and certification procedures will apply to manufacturers of light-duty engine packages for use by SPMV manufacturers (manufacturers with worldwide production of less than 5,000 vehicles annually) in new light-duty replica vehicles which resemble commercially produced heritage vehicles originally produced at least 25 years ago. The SPMV regulation and certification procedures require SPMVs to meet small volume manufacturer exhaust and evaporative emissions standards and OBD II requirements with some minor relaxation for evaporative system leak detection and include the same emissions warranty, defects reporting and recall requirements as other new vehicles. This proposal includes 15-day changes to consider modifications.

18-8-8: Public Meeting to Inform the Board of the California Air Resources Board Tribal Consultation Policy

The Board heard an informational item on the Draft California Air Resources Board Tribal Consultation Policy (Tribal Consultation Policy). In 2011, Governor Brown signed Executive Order B-10-11 that directed State agencies to consult with California Native American Tribes. The Tribal Consultation Policy commits CARB to engage in effective government-to-government consultations with California Native American Tribes. The policy will be posted on CARB's Tribal Relations website.

Attachments

CARB September 27 and 28 and October 25, 2018 Meeting Agendas



PUBLIC MEETING AGENDA

**Thursday, September 27, 2018
and
Friday, September 28, 2018**

LOCATION:

California Environmental Protection Agency
California Air Resources Board
Byron Sher Auditorium, 2nd Floor
1001 I Street
Sacramento, California 95814

This facility is accessible by public transit. For transit information, call (916) 321-BUSS, website:

<http://www.sacrt.com>

(This facility is accessible to persons with disabilities.)

TO SUBMIT WRITTEN COMMENTS ON AN AGENDA ITEM IN ADVANCE OF THE MEETING GO TO:

<http://www.arb.ca.gov/lispub/comm/bclist.php>

**Thursday
September 27, 2018
9:00 a.m.**

CONSENT CALENDAR:

The following items on the consent calendar will be presented to the Board immediately after the start of the public meeting, unless removed from the consent calendar either upon a Board member's request or if someone in the audience wishes to speak on them.

Consent Item #

18-7-1: Public Meeting to Consider the California Infrastructure State Implementation Plan Revisions for the 0.070 Parts Per Million Federal 8-Hour Ozone Standard

The Board will consider adopting revisions to the California Infrastructure State Implementation Plan (SIP) for the 0.070 parts per million federal 8-hour ozone standard. The revisions address requirements that California demonstrates it has the necessary infrastructure – meaning the authority to adopt, implement, and enforce regulations, and sufficient personnel and resources – to meet the federal ozone standard as revised in 2015. Infrastructure SIPs include an "interstate transport" assessment of potential pollution impacts between upwind/downwind states.

18-7-2: Public Hearing to Consider Environmental Comments from John R. Lawson Rock & Oil, Inc. Regarding Board Item 18-1-4.

The Board will consider staff's responses to environmental comments submitted by John R. Lawson Rock & Oil, Inc., on July 18, 2018, during the 15-day comment period for the California Phase 2 Greenhouse Gas rulemaking action – Board Item 18-1-4, the February 8, 2018 Board hearing, "Public Hearing to Consider Proposed California Greenhouse Gas Emissions Standards for Medium- and Heavy-Duty Engines and Vehicles, and Proposed Amendments to the Tractor-Trailer Greenhouse Gas Regulation".

DISCUSSION ITEMS:

Note: The following agenda items may be heard in a different order at the Board meeting.

Agenda Item #

18-7-3: Public Meeting to Consider Assembly Bill 617 Community Air Protection Program – Community Selection and Program Requirements

Spanish translation will be provided at the Board Meeting for this item, Item 18-7-3.

The Board will consider approving the Program requirements to implement community monitoring, community emission reduction programs, and community selection guidelines contained in the proposed Community Air Protection Blueprint, certifying the Final Environmental Analysis, and approving the written responses to comments received on the Draft Environmental Analysis; all in one Resolution. The Board will also consider staff's proposed list of communities to be selected for the first year of the Community Air Protection Program in a separate Resolution.

[More Information](#)

[Staff Presentation](#)

18-7-4: Public Hearing to Consider Amendments to the Low Carbon Fuel Standard Regulation and to the Regulation on Commercialization of Alternative Diesel Fuels

The Board will consider proposed amendments designed to strengthen the Low Carbon Fuel Standard (LCFS) regulation through 2030 in line with the Senate Bill 32 greenhouse gas reduction goals. The proposed amendments would also foster increased deployment of zero-emission vehicles, adopt a credit generating protocol for carbon capture and sequestration, establish third-party verification of program data, and streamline the implementation of the regulation. As part of this rulemaking the Board will consider proposed amendments to the Alternative Diesel Fuels regulation based on a supplemental environmental analysis related to NOx emissions. This is the second of two Board hearings on this item; the Board will consider certifying the Final Environmental Analysis, approving the written response to comments received on the Draft Environmental Analysis and adopting the amendments at this meeting. If needed, this item will carry over for adoption by the board on Friday, September 28.

[More Information](#)

[Staff Presentation](#)

**Friday
September 28, 2018
8:30 a.m.**

18-7-5 Public Hearing to Consider Proposed Amendments to the Low-Emission Vehicle III Greenhouse Gas Emission Regulation

The Board will consider adopting proposed amendments to the Low-Emission Vehicle III greenhouse gas emission regulation to clarify that the "deemed to comply" option for model years 2021 through 2025 is applicable only if the currently adopted federal regulations remain in effect.

[More Information](#)

[Staff Presentation](#)

18-7-6 Public Hearing to Consider the Proposed Innovative Clean Transit Regulation, a Replacement of the Fleet Rule for Transit Agencies

The Board will consider the staff proposal for the Innovative Clean Transit (ICT) Regulation that would require California transit agencies to gradually transition their buses to zero-emission technologies while enhancing services. The proposed ICT Regulation is structured to allow transit agencies to take advantage of incentive programs by acting early and in a manner to implement plans that are best suited for their own situations. This hearing will be the first of two planned Board hearings.

[More Information](#)

[Staff Presentation](#)

CLOSED SESSION

The Board will hold a closed session, as authorized by Government Code section 11126(e), to confer with, and receive advice from, its legal counsel regarding the following pending or potential litigation, and as authorized by Government Code section 11126(a):

American Fuels and Petrochemical Manufacturers, et al. v. Jane O’Keeffe, et al., U.S. District Court (D. Ore. Portland), Case No. 3:15-CV-00467; Plaintiffs’ appeal, U.S. Court of Appeals, Ninth Circuit, Case No. 15-35834.

California Air Resources Board v. United States Environmental Protection Agency, U.S. Court of Appeals, District of Columbia Circuit, Case No. 18-1085.

Electric Power Supply Association, et al. v. Star, et al., U.S. Court of Appeals, Seventh Circuit, Case No. 17-2445.

In re La Paloma Generating Company, LLC, U.S. Bankruptcy Court, District of Delaware, Case No. 16-bk-12700.

POET, LLC, et al. v. California Air Resources Board, et al., Superior Court of California (Fresno County), Case No. 09CECG04659; plaintiffs’ appeal, California Court of Appeal, Fifth District, Case No. F064045; California Supreme Court, Case No. S213394 [remanded to trial court]; plaintiff’s appeal of trial court order discharging peremptory writ of mandate, Court of Appeal, Fifth District, Case No. F073340.

POET, LLC, et al. v. California Air Resources Board, et al., Superior Court of California (Fresno County), Case No. 15CECG03380.

Rocky Mountain Farmers Union, et al. v. Corey, U.S. District Court (E.D. Cal. Fresno), Case No. 1:09-CV-02234-LJO-DLB; ARB interlocutory appeal, U.S. Court of Appeals, Ninth Circuit, Case No. 12-15131 [remanded to trial court].

American Fuels and Petrochemical Manufacturers, et al. v. Corey, et al., U.S. District Court (E.D. Cal. Fresno), Case No. 1:10-CV-00163-AWI-GSA; ARB’s interlocutory appeal, U.S. Court of Appeals, Ninth Circuit, Case No. 10-CV-00163 [remanded to trial court].

Sowinski v. California Air Resources Board, et al., U.S. District Court, Central District of California, Case No. 8:15-CV-02123; Orange County Superior Court, Case No. 30-2018-00970852-CU-IP-CXC.

State of California, et al. v. United States Environmental Protection Agency, U.S. Court of Appeals, District of Columbia Circuit, Case No. 18-1114.

State of California, et al. v. United States Bureau of Land Management, et al., U.S. District Court, Northern District of California Circuit, Case No. 3:17-cv-07186-WHO.

State of New York, et al. v. United States Environmental Protection Agency, U.S. District Court, District of Columbia, Case No. 1:18-cv-00773.

State of North Dakota, et al. v. United States Environmental Protection Agency, U.S. Court of Appeals, District of Columbia Circuit, Case No. 16-1242.

State of North Dakota v. United States Environmental Protection Agency, U.S. Court of Appeals, District of Columbia Circuit, Case No. 15-1381.

State of West Virginia et al. v. United States Environmental Protection Agency, U.S. Court of Appeals, District of Columbia Circuit, Case No. 15-1363.

State of Wyoming, et al. v. United States Department of the Interior, et al., U.S. District Court, District of Wyoming, Case No. 16-CV-285-SWS.

The Two Hundred, et al. v. California Air Resources Board, et al., Superior Court of California (Fresno County), Case No. 18CECG01494.

Truck Trailer Manufacturers Association, Inc. v. United States Environmental Protection Agency, et al., U.S. Court of Appeals, District of Columbia Circuit, Case No. 16-1430.

Valero Refining Co. California v. Hearing Board of the Bay Area Air Quality Management District et al., Court of Appeal, First Appellate District, Case No. A151004.

Alliance for California Business v. California Air Resources Board, et al., Glenn County Superior Court, Case No. 13CV01232; plaintiffs' appeal, Court of Appeal, Third District, Case No. C082828.

Alliance for California Business v. California State Transportation Agency, et al., Sacramento County Superior Court, Case No. 34-2016-80002491.

American Coatings Association, Inc. v. State of California and California Air Resources Board, Sacramento County Superior Court, Case No. 04CS01707.

Jack Cody dba Cody Transport v. California Air Resources Board, et al., Sacramento Superior Court, Case No. 34-2015-80002116; plaintiff's appeal, Court of Appeal, Third District, Case No. C083083.

Dalton Trucking, Inc. v. United States Environmental Protection Agency, U.S. Court of Appeals, District of Columbia Circuit, Case No. 13-1283 (dismissed), U.S. Court of Appeals, Ninth Circuit, Case No. 13-74019.

John R. Lawson Rock & Oil, Inc. et al. v. California Air Resources Board et al., Fresno County Superior Court, Case No. 14-CECG01494; ARB's appeal, Court of Appeal, Fifth District, Case No. F074003.

Murray Energy Corporation v. United States Environmental Protection Agency, U.S. Court of Appeals, District of Columbia Circuit, Case No. 15-1385.

State of California, et al. v. United States Environmental Protection Agency et al., U.S. District Court, Northern District of California, Oakland Division, Case No. 4:17-cv-6936-HSG.

States of New York, California, Vermont, and Maryland, and the Commonwealth of Pennsylvania v. National Highway Traffic Safety Administration, U.S. Court of Appeals, Second Circuit, Case Nos. 17-2780(L) and 17-2806.

State of New York, et al. v. United States Environmental Protection Agency et al., U.S. Court of Appeals, District of Columbia Circuit, Case No. 17-1185.

California Air Resources Board v. Adam Brothers Farming Inc., Santa Barbara County Superior Court, Case No. 16CV01758.

People v. Southern California Gas Company, Los Angeles Superior Court, Case No. BC 602973.

In re: Volkswagen "Clean Diesel" MDL, United States District Court, Northern District of California, Case No. 15-MD-2672-CRB (JSC).

Friends of Oceano Dunes, Inc. v. California Coastal Commission, et al., San Luis Obispo County Superior Court, Case No. 17CV-0576; U.S. District Court for the Central District of California, Case No. 2:17-cv-8733.

OPPORTUNITY FOR MEMBERS OF THE BOARD TO COMMENT ON MATTERS OF INTEREST

Board members may identify matters they would like to have noticed for consideration at future meetings and comment on topics of interest; no formal action on these topics will be taken without further notice.

OPEN SESSION TO PROVIDE AN OPPORTUNITY FOR MEMBERS OF THE PUBLIC TO ADDRESS THE BOARD ON SUBJECT MATTERS WITHIN THE JURISDICTION OF THE BOARD

Although no formal Board action may be taken, the Board is allowing an opportunity to interested members of the public to address the Board on items of interest that are within the Board's jurisdiction, but that do not specifically appear on the agenda. Each person will be allowed a maximum of three minutes to ensure that everyone has a chance to speak.

TO ELECTRONICALLY SUBMIT WRITTEN COMMENTS ON AN AGENDA ITEM IN ADVANCE OF THE MEETING GO TO:

<https://www.arb.ca.gov/lispub/comm/bclist.php>

(Note: not all agenda items are available for electronic submittals of written comments.)

PLEASE NOTE: No outside memory sticks or other external devices may be used at any time with the Board audio/visual system or any CARB computers. Therefore, PowerPoint presentations to be displayed at the Board meeting must be electronically submitted via email to the Clerk of the Board at cotb@arb.ca.gov no later than noon on the business day prior to the scheduled Board meeting.

IF YOU HAVE ANY QUESTIONS, PLEASE CONTACT THE CLERK OF THE BOARD:

1001 I Street, 23rd Floor, Sacramento, California 95814

(916) 322-5594

CARB Homepage: www.arb.ca.gov

SPECIAL ACCOMMODATION REQUEST

Consistent with California Government Code Section 7296.2, special accommodation or language needs may be provided for any of the following:

- An interpreter to be available at the hearing;
- Documents made available in an alternate format or another language;
- A disability-related reasonable accommodation.

To request these special accommodations or language needs, please contact the Clerk of the Board at (916) 322-5594 or by facsimile at (916) 322-3928 as soon as possible, but no later than 7 business days before the scheduled Board hearing. TTY/TDD/Speech to Speech users may dial 711 for the California Relay Service.

Consecuente con la sección 7296.2 del Código de Gobierno de California, una acomodación especial o necesidades lingüísticas pueden ser suministradas para cualquiera de los siguientes:

- Un intérprete que esté disponible en la audiencia
- Documentos disponibles en un formato alterno u otro idioma
- Una acomodación razonable relacionados con una incapacidad

Para solicitar estas comodidades especiales o necesidades de otro idioma, por favor llame a la oficina del Consejo al (916) 322-5594 o envíe un fax a (916) 322-3928 lo más pronto posible, pero no menos de 7 días de trabajo antes del día programado para la audiencia del Consejo. TTY/TDD/Personas que necesiten este servicio pueden marcar el 711 para el Servicio de Retransmisión de Mensajes de California.



PUBLIC MEETING AGENDA

**Thursday,
October 25, 2018**

LOCATION:

California Environmental Protection Agency
California Air Resources Board
Byron Sher Auditorium, 2nd Floor
1001 I Street
Sacramento, California 95814

This facility is accessible by public transit. For transit information, call (916) 321-BUSS, website:

<http://www.sacr.com>

(This facility is accessible to persons with disabilities.)

TO SUBMIT WRITTEN COMMENTS ON AN AGENDA ITEM IN ADVANCE OF THE MEETING GO TO:

<http://www.arb.ca.gov/lispub/comm/bclist.php>

**Thursday
October 25, 2018
9:00 a.m.**

CONSENT CALENDAR:

The following items on the consent calendar will be presented to the Board immediately after the start of the public meeting, unless removed from the consent calendar either upon a Board member's request or if someone in the audience wishes to speak on them.

Consent Item

18-8-1: Public Meeting to Consider Six Research Proposals

The Board will consider approval of six research proposals that were developed in response to the Board-approved research projects for Fiscal Year 2018-2019.

- 1) *"Real-world Tire and Brake-wear Emissions," University of California, Riverside, Proposal No. 2817-289.*
- 2) *"Hybridization and Full Electrification Potential in Off-Road Applications," University of California, Riverside, Proposal No. 2818-289*
- 3) *"Screening Method and Map for Evaluating Transportation Access Disparities and other Built Environment-related Social Determinants of Health," University of California, Los Angeles, Proposal No. 2819-289.*
- 4) *"Estimating Induced Travel from Capacity Expansions on Congested Corridors," University of California, Berkeley, Proposal No. 2820-289.*
- 5) *"Environmental Chamber Experiments to Improve Secondary Organic Aerosol Model Prediction," University of California, Riverside, Proposal No. 2821-289.*
- 6) *"Characterizing the Potential Health and Equity Impacts of Oil and Gas Extraction and Production Activities in California," University of California, Berkeley, Proposal No. 2822-289.*

18-8-2: Public Meeting to Consider the Proposed Submission of California's Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities into the California State Implementation Plan

The Board will consider adopting a resolution directing staff to submit California's Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities into the California State Implementation Plan (Oil and Gas SIP Submittal). If adopted, California Air Resources Board will submit the Oil and Gas SIP Submittal to the United States Environmental Protection Agency as a revision to the California State Implementation Plan.

DISCUSSION ITEMS:

Note: The following agenda items may be heard in a different order at the Board meeting.

Agenda Item #

18-8-4: Public Hearing to Consider Proposed Amendments to Enhanced Vapor Recovery Regulations to Standardize Gas Station Nozzle Spout Dimensions to Help Address Storage Tank Overpressure

The Board will consider amendments to Enhanced Vapor Recovery Regulations to standardize gas station nozzle spout dimensions to improve compatibility with newer motor vehicle fill pipes. This compatibility is necessary to reduce air ingestion at the nozzle, which will help reduce storage tank overpressure conditions.

18-8-5: Public Hearing to Consider Proposed Amendments to California Specifications for Fill Pipes and Openings of Motor Vehicle Fuel Tanks

The Board will consider amendments to Vehicle Fill Pipe Specifications to help ensure new motor vehicle fill pipes are compatible and form a good seal with Phase II recovery nozzles that are certified for use at California gasoline stations as a means to reduce overpressure.

18-8-6: Public Meeting to Consider Approval of the Proposed Fiscal Year 2018-19 Funding Plan for Clean Transportation Incentives

The Board will consider the Proposed Fiscal Year 2018-19 Funding Plan for Clean Transportation Incentives. The plan describes proposed investments from two related funding sources: the Low Carbon Transportation Program funded with Cap-and-Trade auction proceeds and the Air Quality Improvement Program. These programs provide incentives for clean vehicle and equipment projects to reduce greenhouse gas emissions and air pollution with a priority on benefiting disadvantaged and low-income communities and low-income households. Staff's proposal builds on investments from previous funding cycles by continuing incentives for zero-emission and plug-in passenger cars, clean trucks and buses, and advanced technology freight projects.

18-8-7: Public Meeting to Consider the San Joaquin Valley Supplement to the 2016 State Strategy for the State Implementation Plan

The Board will consider adopting the San Joaquin Valley Supplement to the 2016 State Strategy for the State Implementation Plan (Valley State SIP Strategy). The Valley State SIP Strategy describes the California Air Resources Board staff's proposal for a supplemental State commitment for additional mobile source measures and emission reductions to attain health-based annual and 24-hour federal air quality standards for PM2.5 in the San Joaquin Valley.

18-8-11: Public Meeting to Consider the 2018 Updates to the California State Implementation Plan

The Board will consider updates to State Implementation Plan submittals for several ozone and PM2.5 nonattainment areas. These updates are a result of recent court decisions regarding United States Environmental Protection Agency (U.S. EPA) guidance on certain elements of the area's plans. These updates address reasonable further progress-related components for Coachella Valley, Eastern Kern County, Imperial County, Sacramento Metropolitan Area, San Joaquin Valley, South Coast, Ventura County, and Western Mojave Desert. Updates also include enhanced enforcement activities as contingency measures for these areas and two additional areas -- San Diego County and Western Nevada County. If adopted, these updates will be submitted to U.S. EPA as a revision to the California State Implementation Plan.

18-8-3: Public Hearing to Consider Proposed California Certification Procedures for Light-Duty Engine Packages for Use in New Light-Duty Specially-Produced Motor Vehicles for 2019 and Subsequent Model Years

The Board will consider adopting the proposed California Regulation and Certification Procedures for Light-Duty Engine Packages for Use In New Light-Duty Specially-Produced Motor Vehicles for 2019 And Subsequent Model Years. California Air Resources Board staff is proposing regulations and certification procedures for manufacturers of light-duty engine packages for use in new light-duty specially constructed vehicles which resemble heritage vehicles originally produced at least 25 years ago.

18-8-8: Public Meeting to Inform the Board of the California Air Resources Board Tribal Consultation Policy

The Board will hear an informational item on the California Air Resources Board Tribal Consultation Policy. The California Air Resources Board is implementing a Tribal Consultation Policy to ensure it engages in effective government-to-government consultations with tribes to further its mission and to implement Executive Order B-10-11.

CLOSED SESSION

The Board will hold a closed session, as authorized by Government Code section 11126(e), to confer with, and receive advice from, its legal counsel regarding the following pending or potential litigation, and as authorized by Government Code section 11126(a):

American Fuels and Petrochemical Manufacturers, et al. v. Jane O'Keeffe, et al., U.S. District Court (D. Ore. Portland), Case No. 3:15-CV-00467; Plaintiffs' appeal, U.S. Court of Appeals, Ninth Circuit, Case No. 15-35834.

California Air Resources Board v. United States Environmental Protection Agency, U.S. Court of Appeals, District of Columbia Circuit, Case No. 18-1085.

Electric Power Supply Association, et al. v. Star, et al., U.S. Court of Appeals, Seventh Circuit, Case No. 17-2445.

POET, LLC, et al. v. California Air Resources Board, et al., Fresno County Superior Court, Case No. 09CECG04659; plaintiffs' appeal, California Court of Appeal, Fifth District, Case No. F064045; California Supreme Court, Case No. S213394 [remanded to trial court]; plaintiff's appeal of trial court order discharging peremptory writ of mandate, Court of Appeal, Fifth District, Case No. F073340.

POET, LLC, et al. v. California Air Resources Board, et al., Fresno County Superior Court, Case No. 15CECG03380.

Rocky Mountain Farmers Union, et al. v. Corey, U.S. District Court (E.D. Cal. Fresno), Case No. 1:09-CV-02234-LJO-DLB; ARB interlocutory appeal, U.S. Court of Appeals, Ninth Circuit, Case No. 12-15131 [remanded to trial court].

American Fuels and Petrochemical Manufacturers, et al. v. Corey, et al., U.S. District Court (E.D. Cal. Fresno), Case No. 1:10-CV-00163-AWI-GSA; ARB's interlocutory appeal, U.S. Court of Appeals, Ninth Circuit, Case No. 10-CV-00163 [remanded to trial court].

Sowinski v. California Air Resources Board, et al., U.S. District Court, Central District of California, Case No. 8:15-CV-02123; Orange County Superior Court, Case No. 30-2018-00970852-CU-IP-CXC.

State of California, et al. v. United States Environmental Protection Agency, U.S. Court of Appeals, District of Columbia Circuit, Case No. 18-1114.

State of California, et al. v. United States Bureau of Land Management, et al., U.S. District Court, Northern District of California Circuit, Case No. 3:17-cv-07186-WHO.

State of New York, et al. v. United States Environmental Protection Agency, U.S. District Court, District of Columbia, Case No. 1:18-cv-00773.

State of North Dakota, et al. v. United States Environmental Protection Agency, U.S. Court of Appeals, District of Columbia Circuit, Case No. 16-1242.

State of North Dakota v. United States Environmental Protection Agency, U.S. Court of Appeals, District of Columbia Circuit, Case No. 15-1381.

State of West Virginia et al. v. United States Environmental Protection Agency, U.S. Court of Appeals, District of Columbia Circuit, Case No. 15-1363.

State of Wyoming, et al. v. United States Department of the Interior, et al., U.S. District Court, District of Wyoming, Case No. 16-CV-285-SWS.

The Two Hundred, et al. v. California Air Resources Board, et al., Fresno County Superior Court, Case No. 18CECG01494.

Truck Trailer Manufacturers Association, Inc. v. United States Environmental Protection Agency, et al., U.S. Court of Appeals, District of Columbia Circuit, Case No. 16-1430.

Valero Refining Co. California v. Hearing Board of the Bay Area Air Quality Management District et al., Court of Appeal, First Appellate District, Case No. A151004.

Alliance for California Business v. California Air Resources Board, et al., Glenn County Superior Court, Case No. 13CV01232; plaintiffs' appeal, Court of Appeal, Third District, Case No. C082828.

Alliance for California Business v. California State Transportation Agency, et al., Sacramento County Superior Court, Case No. 34-2016-80002491.

American Coatings Association, Inc. v. State of California and California Air Resources Board, Sacramento County Superior Court, Case No. 04CS01707.

Jack Cody dba Cody Transport v. California Air Resources Board, et al., Sacramento Superior Court, Case No. 34-2015-80002116; plaintiff's appeal, Court of Appeal, Third District, Case No. C083083.

Dalton Trucking, Inc. v. United States Environmental Protection Agency, U.S. Court of Appeals, District of Columbia Circuit, Case No. 13-1283 (dismissed), U.S. Court of Appeals, Ninth Circuit, Case No. 13-74019.

John R. Lawson Rock & Oil, Inc. et al. v. California Air Resources Board et al., Fresno County Superior Court, Case No. 14-CECG01494; ARB's appeal, Court of Appeal, Fifth District, Case No. F074003.

Murray Energy Corporation v. United States Environmental Protection Agency, U.S. Court of Appeals, District of Columbia Circuit, Case No. 15-1385.

State of California, et al. v. United States Environmental Protection Agency et al., U.S. District Court, Northern District of California, Oakland Division, Case No. 4:17-cv-6936-HSG.

State of New York, et al. v. United States Environmental Protection Agency et al., U.S. Court of Appeals, District of Columbia Circuit, Case No. 17-1185.

California Air Resources Board v. Adam Brothers Farming Inc., Santa Barbara County Superior Court, Case No. 16CV01758.

People v. Southern California Gas Company, Los Angeles Superior Court, Case No. BC 602973.

In re: Volkswagen "Clean Diesel" MDL, United States District Court, Northern District of California, Case No. 15-MD-2672-CRB (JSC).

Friends of Oceano Dunes, Inc. v. California Coastal Commission, et al., San Luis Obispo County Superior Court, Case No. 17CV-0576; U.S. District Court for the Central District of California, Case No. 2:17-cv-8733.

OPPORTUNITY FOR MEMBERS OF THE BOARD TO COMMENT ON MATTERS OF INTEREST

Board members may identify matters they would like to have noticed for consideration at future meetings and comment on topics of interest; no formal action on these topics will be taken without further notice.

OPEN SESSION TO PROVIDE AN OPPORTUNITY FOR MEMBERS OF THE PUBLIC TO ADDRESS THE BOARD ON SUBJECT MATTERS WITHIN THE JURISDICTION OF THE BOARD

Although no formal Board action may be taken, the Board is allowing an opportunity to interested members of the public to address the Board on items of interest that are within the Board's jurisdiction, but that do not specifically appear on the agenda. Each person will be allowed a maximum of three minutes to ensure that everyone has a chance to speak.

TO ELECTRONICALLY SUBMIT WRITTEN COMMENTS ON AN AGENDA ITEM IN ADVANCE OF THE MEETING GO TO:

<https://www.arb.ca.gov/lispub/comm/bclist.php>

(Note: not all agenda items are available for electronic submittals of written comments.)

PLEASE NOTE: No outside memory sticks or other external devices may be used at any time with the Board audio/visual system or any CARB computers. Therefore, PowerPoint presentations to be displayed at the Board meeting must be electronically submitted via email to the Clerk of the Board at cotb@arb.ca.gov no later than noon on the business day prior to the scheduled Board meeting.

IF YOU HAVE ANY QUESTIONS, PLEASE CONTACT THE CLERK OF THE BOARD:

1001 I Street, 23rd Floor, Sacramento, California 95814

(916) 322-5594

CARB Homepage: www.arb.ca.gov

SPECIAL ACCOMMODATION REQUEST

Consistent with California Government Code Section 7296.2, special accommodation or language needs may be provided for any of the following:

- An interpreter to be available at the hearing;
- Documents made available in an alternate format or another language;
- A disability-related reasonable accommodation.

To request these special accommodations or language needs, please contact the Clerk of the Board at (916) 322-5594 or by facsimile at (916) 322-3928 as soon as possible, but no later than 7 business days before the scheduled Board hearing. TTY/TDD/Speech to Speech users may dial 711 for the California Relay Service.

Consecuente con la sección 7296.2 del Código de Gobierno de California, una acomodación especial o necesidades lingüísticas pueden ser suministradas para cualquiera de los siguientes:

- Un intérprete que esté disponible en la audiencia
- Documentos disponibles en un formato alterno u otro idioma
- Una acomodación razonable relacionados con una incapacidad

Para solicitar estas comodidades especiales o necesidades de otro idioma, por favor llame a la oficina del Consejo al (916) 322-5594 o envíe un fax a (916) 322-3928 lo más pronto posible, pero no menos de 7 días de trabajo antes del día programado para la audiencia del Consejo. TTY/TDD/Personas que necesiten este servicio pueden marcar el 711 para el Servicio de Retransmisión de Mensajes de California.

BOARD MEETING DATE: November 2, 2018

AGENDA NO. 27

PROPOSAL: Certify Final Mitigated Subsequent Environmental Assessment and Amend Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities

SYNOPSIS: The adoption Resolution of the 2016 AQMP directed staff to achieve additional NOx emission reductions and to transition the RECLAIM program to a command-and-control regulatory structure as soon as practicable. Proposed Amended Rule 1135 applies to RECLAIM and non-RECLAIM electricity generating facilities and is being amended to update NOx emission limits to reflect current BARCT, establish an ammonia emission limit, and provide implementation timeframes to facilitate the transition of the NOx RECLAIM program to a command-and-control regulatory structure. The provisions in the proposed amended rule apply to RECLAIM and non-RECLAIM electricity generating facilities. Other provisions are incorporated to remove obsolete provisions, update provisions for monitoring, reporting, and recordkeeping, and provide clarifications.

COMMITTEE: Stationary Source, August 17, 2018, Reviewed

RECOMMENDED ACTIONS:

Adopt the attached Resolution:

1. Certifying the Final Mitigated Subsequent Environmental Assessment for Proposed Amended Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities; and
2. Amending Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities.

Wayne Natri
Executive Officer

Background

Rule 1135 – Emissions of Oxides of Nitrogen from Electric Power Generating Systems was adopted in 1989 and currently applies to electric power generating steam boiler systems, repowered units, and alternative electricity generating sources. When RECLAIM program was adopted in 1993, electricity generating facilities were included in the NOx RECLAIM with the exception of electricity generating facilities that were owned and operated by the City of Burbank, City of Glendale, or the City of Pasadena that were allowed to opt-in to the program. The cities of Burbank and Pasadena opted-in to RECLAIM, while the City of Glendale remained regulated by command-and-control rules.

In response to an increased demand for power generation and delayed installation of controls by electricity generating facilities, in May 2001, the Board adopted Rule 2009 – Compliance Plan for Power Producing Facilities, which required installation of Best Available Retrofit Control Technology (BARCT) through compliance plans at electricity generating facilities. As a result, much of the equipment at electricity generating facilities has been retrofitted or replaced to meet lower NOx emission limits. Diesel internal combustion engines providing power to Santa Catalina Island were not subject to Rule 2009 because the facility did not qualify as a Power Producing Facility because its capacity was less than 50 Megawatts.

Proposed Amended Rule (PAR) 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities, is an industry-specific rule and applies to boilers, turbines, and engines at RECLAIM and non-RECLAIM electricity generating facilities that are investor-owned electric utilities, publicly owned electric utilities, or have a generation capacity of at least 50 megawatts of electrical power. PAR 1135 is being amended to facilitate the transition of the NOx RECLAIM program to a command-and-control regulatory structure and to implement Control Measure CMB-05 – Further NOx Reductions from RECLAIM Assessment.

Public Process

Development of PAR 1135 was conducted through a public process. Staff has held five working group meetings to discuss the provisions of the proposed amended rule: January 24, 2018, April 26, 2018, June 13, 2018, July 5, 2018, and September 25, 2018. A Public Workshop was held at the SCAQMD Headquarters in Diamond Bar on August 2, 2018. In addition, staff has also met individually with numerous facility operators.

Proposed Amendments

The proposed amended rule updates NOx emission limits to reflect current BARCT and provides implementation timeframes. As summarized in Tables 1 and 2 below, the provisions in PAR 1135 establish the following emissions limits: NOx and ammonia emission limits for boilers and gas turbines; and NOx, ammonia, carbon monoxide, volatile organic compounds, and particulate matter emission limits for internal combustion engines located on Santa Catalina Island. The compliance date for electric generating units is January 1, 2024.

Table 1
PAR 1135 Emissions Limits for Boilers and Gas Turbines

Equipment Type	NO_x (ppmv)	Ammonia (ppmv)	Oxygen Correction (%, dry)
Boiler	5	5	3
Combined Cycle Gas Turbine and Associated Duct Burner	2	5	15
Simple Cycle Gas Turbine	2.5	5	15

Table 2
PAR 1135 Emissions Limits for Diesel Internal Combustion Engines

NO_x (ppmv)¹	Ammonia (ppmv)¹	Carbon Monoxide (ppmv)¹	Volatile Organic Compounds (ppmv)¹	Particulate Matter (lbs/mmbtu)
45	5	250	30	0.0076

¹ – 15% oxygen, dry

PAR 1135 includes an alternative compliance approach to incentivize more reductions from diesel internal combustion engines located on Santa Catalina Island. The rule includes an additional two years for compliance if NO_x emissions are reduced by an additional 67%, with an extension of up to three years for compliance. The three-year time extension includes a mitigation fee of \$100,000 per year.

Regarding monitoring, reporting, and recordkeeping requirements, PAR 1135 will continue to implement Rule 2012 – Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Nitrogen (NO_x) Emissions for RECLAIM facilities and non-RECLAIM facilities will continue complying with either Rule 218 – Continuous Emission Monitoring or 40 CFR Part 75 – Continuous Emission Monitoring. PAR 1135 includes an exemption from the NO_x emission limits for low-use equipment that is permitted below a specified capacity factor and units that are permitted near the proposed NO_x concentration limits as these two scenarios far exceeded the cost-effectiveness threshold of \$50,000 per ton of NO_x reduced.

Key Issues

Through the rulemaking process, staff has worked with stakeholders to address comments and resolve a number of key issues. Three key issues remain: 1) Implementation schedule for diesel internal combustion engines located on Santa Catalina Island; 2) SCAQMD’s authority to base a BARCT emission limit based on equipment replacement; and 3) New Source Review (NSR) resolution before BARCT rules are adopted or amended.

Implementation Schedule for Diesel Engines on Santa Catalina Island

Southern California Edison (SCE) is concerned that the implementation schedule under PAR 1135 may prevent them from investing in lower-emission power generating technology and force them to replace their diesel internal combustion engines. PAR 1135 allows an alternative compliance approach with an additional two years for compliance in order to accommodate potential plans for less emissive electricity generating equipment than diesel internal combustion engines. To further incentivize lower emitting electricity generating technologies, PAR 1135 allows an extension of up to three years for Santa Catalina Island. Depending on the compliance option selected, SCE would have either eight or ten years to meet the emission limits of PAR 1135.

SCAQMD's Authority to Base a BARCT Emission Limit on Equipment Replacement

Industry stakeholders have commented that the SCAQMD does not have the authority base a BARCT emission limit on equipment replacement, and that SCAQMD's authority for establishing BARCT is limited to retrofits only. Staff disagrees with this interpretation of BARCT. The statutory definition of BARCT supports a broad interpretation, including replacement. Applicable dictionary definitions do not preclude the view that BARCT can include equipment replacement. Finally, even if a court were to conclude that BARCT cannot encompass equipment replacement, BARCT is not a limitation on SCAQMD authority. The SCAQMD retains broad statutory authority to adopt emission-control requirements for stationary sources, and that authority may require equipment replacement, as long as the requirement is not arbitrary and capricious.

Resolve New Source Review Issues Before Adopting or Amending BARCT Rules

Some industry stakeholders have commented that the adoption and amendment of landing rules that affect RECLAIM facilities should not proceed until NSR issues associated with the transition of RECLAIM facilities to a command-and-control regulatory structure are resolved. Staff has committed to not requiring RECLAIM facilities to exit the program until NSR issues are resolved. In addition, Rule 2002 - Allocations for Oxides of Nitrogen (NO_x) and Oxides of Sulfur (SO_x) allows a facility to stay in RECLAIM if they receive a Final Determination to exit RECLAIM. Facilities can begin implementation of provisions in PAR 1135 while in RECLAIM, and if there is an NSR event, the facility would be subject to RECLAIM NSR provisions under Rule 2005 – New Source Review for RECLAIM.

Emission Reductions and Cost Effectiveness Determination

In 1989, electricity generating facilities emitted more than 26 tons per day of NO_x and were one of the largest industry source categories of NO_x emissions. Emissions decreased to less than 10 tons per day of NO_x emissions by 2005. Since then, with equipment replacement and increased reliance on renewable energy sources, NO_x emissions have further decreased to less than 4 tons per day in 2016. As proposed, for diesel internal combustion engines, the rule would reduce NO_x by 0.1 tons per day with

average cost-effectiveness of approximately \$23,000 per ton of NO_x reduced. For natural gas boilers, the proposed amended rule would reduce NO_x by 1.6 tons per day with average cost-effectiveness of approximately \$5,630 per ton of NO_x reduced. Upon full implementation, PAR 1135 will reduce 1.7 tons per day of NO_x emissions with a remaining NO_x inventory of 1.8 tons per day.

California Environmental Quality Act

PAR 1135 is considered a “project” as defined by the California Environmental Quality Act (CEQA) and the SCAQMD is the designated lead agency. Pursuant to CEQA Guidelines Sections 15252, 15162(b), and 15251(l) (codified in SCAQMD Rule 110), the SCAQMD has prepared a Mitigated Subsequent Environmental Assessment (SEA) for PAR 1135 which relies on the March 2017 Final Program Environmental Impact Report (EIR) for the 2016 AQMP.

Socioeconomic Analysis

There are 31 electricity generating facilities subject to PAR 1135, all within the utility sector. Only three of the 31 facilities would have to modify their existing equipment in order to comply with PAR 1135. Twenty-seven electric generating units would qualify for the low-use provisions. However, three of these facilities will forego use of the low-use provision and instead retrofit their turbines to come into compliance with the PAR 1135 emission limits. Two cost scenarios were run for this rule proposal. The average annual cost of PAR 1135 is estimated to be \$7.4 - \$10 million between 2019 and 2045, for the low and high cost scenarios, respectively. The low cost scenario assumes a real interest rate of 1%, while the high cost scenario assumes a 4% real interest rate. Under the high cost scenario, the majority of the annual compliance costs of PAR 1135, \$7.2 million (72%), stem from installation of three natural gas turbines at a single facility.

PAR 1135 is expected to result in approximately 104 - 154 jobs on average forgone annually between 2019 and 2045, depending on the real interest rate assumed (1% - 4%). The projected job loss impacts represent about 0.0009% - 0.0014% of the total employment in the four-county region.

The 26 RECLAIM facilities that would be under PAR 1135 currently account for 9.1% of annual NO_x emissions and 19.5% of NO_x RECLAIM Trading Credit (RTC) holdings in the NO_x RECLAIM universe. The simultaneous transition of the 26 electricity generating facilities out of the NO_x RECLAIM program could potentially assert upward pressure on discrete-year NO_x RTC prices. However, many facilities will likely opt to temporarily remain in RECLAIM until NSR provisions for RECLAIM are resolved.

AQMP and Legal Mandates

Pursuant to Health & Safety Code Section 40460 (a), the SCAQMD is required to adopt an Air Quality Management Plan (AQMP) demonstrating compliance with all federal regulations and standards. The SCAQMD is required to adopt rules and regulations that carry out the objectives of the AQMP. PAR 1135 is part of a control measure (CMB-05) in the 2016 AQMP and will reduce NOx emissions and facilitate the transition the NOx RECLAIM program to a command-and-control regulatory structure.

Resource Impacts

Existing staff resources are adequate to implement the proposed amendments.

Attachments

- A. Summary of Proposal
- B. Key Issues and Responses
- C. Rule Development Process
- D. Key Contacts List
- E. Resolution
- F. Attachment 1 to the Resolution (Findings, Statement of Overriding Considerations, and Mitigation Monitoring and Reporting Plan)
- G. Proposed Amended Rule 1135
- H. Final Staff Report
- I. Final Socioeconomic Impact Assessment
- J. Final Mitigated Subsequent Environmental Assessment
- K. Board Meeting Presentation

ATTACHMENT A

SUMMARY OF PROPOSAL

Proposed Amended Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities

Applicability

- Applies to electric generating units such as internal combustion engines located on Santa Catalina Island, boilers, combined cycle gas turbines, and simple cycle gas turbines at an investor-owned electric utility, publicly owned electric utility, or a facility with 50 megawatts or more of combined generation capacity, excluding landfills, petroleum refineries, and publicly owned treatment works
- Applies to RECLAIM and non-RECLAIM facilities

Emissions Limits (effective January 1, 2024)

- Establishes NO_x and ammonia emission limits for diesel internal combustion engines located on Santa Catalina Island, boilers, combined cycle gas turbines and associated duct burners, and simple cycle gas turbines
- Includes an alternative compliance date for lower emitting electricity generating technologies on Santa Catalina Island and provision for up to a three-year extension and mitigation fee option

Monitoring, Recordkeeping, and Reporting

- RECLAIM sources will continue to comply with SCAQMD Rule 2012 – Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Nitrogen (NO_x) Emissions
- Former RECLAIM sources will comply with SCAQMD Rule 2012, excluding reporting requirements
- Non-RECLAIM sources will comply with 40 CFR Part 75 – Continuous Emission Monitoring or SCAQMD Rule 218 – Continuous Emission Monitoring

Exemptions

- Provisions included for low-use electric generating units where it is not cost-effective to retrofit or replace
- Provisions included for electric generating units that are near the proposed NO_x emission limit where it is not cost-effective to retrofit or replace
- Once-through-cooling electric generating units subject to the Clean Water Act Section 316(b) must shutdown or meet emission limits by the compliance dates established by State Water Resource Control Board

ATTACHMENT B

KEY ISSUES AND RESPONSES

Proposed Amended Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities

Southern California Edison has commented that the compliance dates for diesel internal combustion engines located on Santa Catalina Island will prevent Southern California Edison from investing in lower-emission power generating and force them to replace their diesel internal combustion engines.

- PAR 1135 allows an alternative compliance approach with an additional two years for compliance in order to accommodate potential plans for less emissive electricity generating equipment than diesel internal combustion engines
- To further incentivize lower emitting electricity generating technologies, PAR 1135 allows an extension of up to three years for Santa Catalina Island providing 8 to 10 years to meet emissions limits

Some industry stakeholders have commented that the SCAQMD does not have the authority to require replacements when establishing a BARCT emission limit.

- Staff disagrees with this interpretation; the statutory definition of BARCT supports a broad interpretation including replacement
- Applicable dictionary definitions do not preclude that BARCT can include equipment replacement
- BARCT is not a limitation on SCAQMD authority
 - The SCAQMD retains broad statutory authority to adopt emission-control requirements for stationary sources, and that authority may require equipment replacement, as long as the requirement is not arbitrary and capricious

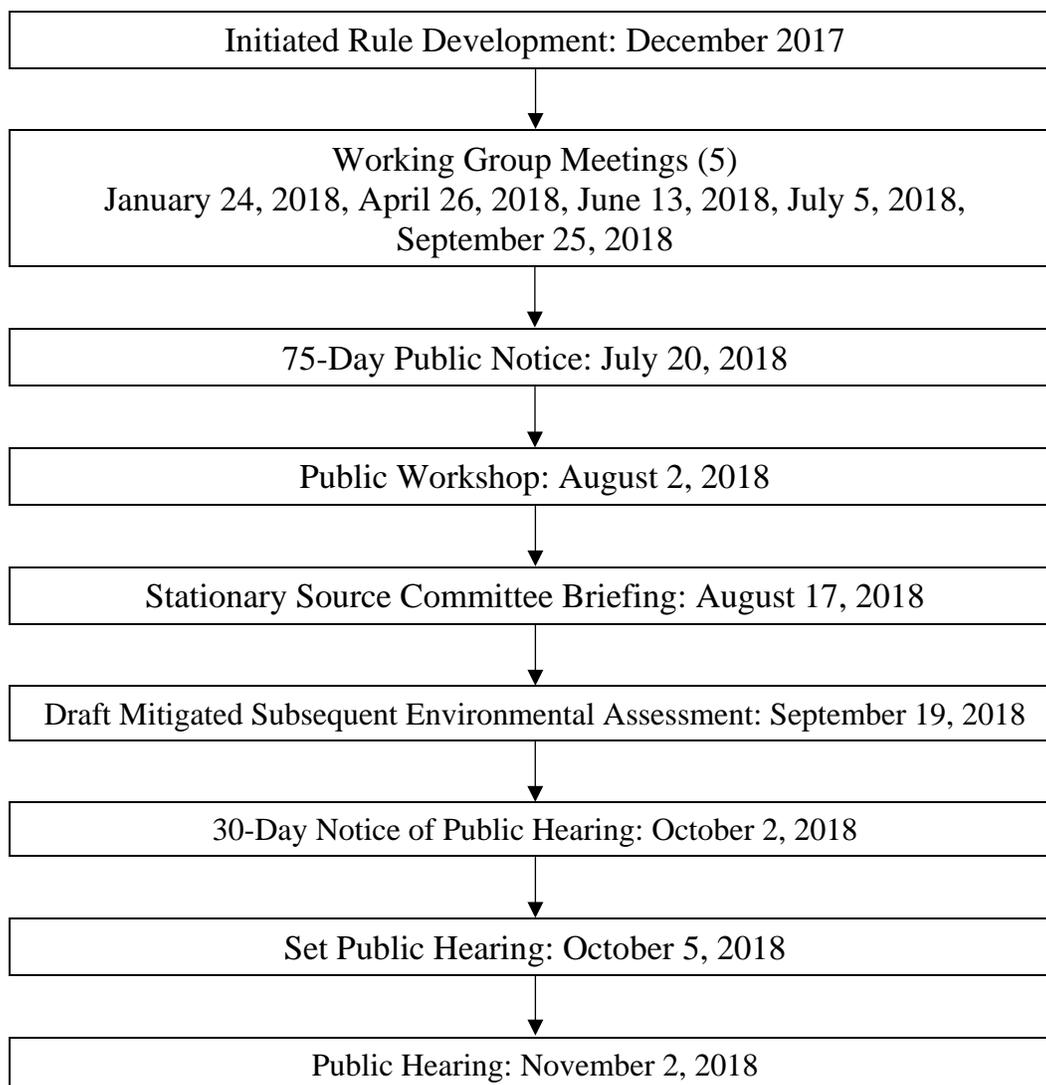
Some industry stakeholders have commented that facilities should not exit RECLAIM and staff should not move forward with BARCT rule amendments until New Source Review (NSR) issues are resolved.

- Development and implementation of BARCT landing rules can occur while the SCAQMD continues to resolve NSR issues for the transition of RECLAIM to a command-and-control regulatory structure
- Staff has committed to not exiting facilities from RECLAIM until NSR issues are resolved
- Recent amendments to Rule 2002 allow facilities to remain in RECLAIM until NSR is resolved
- Facilities can remain in RECLAIM to offset new and modified sources under RECLAIM NSR

ATTACHMENT C

RULE DEVELOPMENT PROCESS

Proposed Amended Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities



Eleven (11) months spent in rule development.

One (1) Public Workshop.

One (1) Stationary Source Committee Meeting.

Five (5) Working Group Meetings.

ATTACHMENT D
KEY CONTACTS LIST

Proposed Amended Rule 1135 – Emissions of Oxides of Nitrogen from Electricity
Generating Facilities

AECOM	Los Angeles Department of Water & Power
AES Corporation	M&C TechGroup North America
Andeavor	Miratech
Bicent (California) Malburg	Montrose Air Quality Services
Bloom Energy	New Indy Containerboard
Burbank Water and Power	NRG Energy
California Air Resources Board	OLS Energy
California Council for Environmental and Economic Balance	Pasadena Water and Power
California Energy Commission	Pod Technologies
California Independent System Operator	Public Solar Power Coalition
California State Water Resources Control Board	Ramboll
Cemtek KVB-Enertec	Sanitation Districts of Los Angeles County
City of Anaheim	Signal Hill Petroleum
City of Colton	Southern California Air Quality Alliance
City of Glendale	Southern California Edison
City of Riverside	Southern California Gas Company
Colton Power	Southwest Generation Operating Company
Diamond Generating Corporation	U.S. Environmental Protection Agency
Environmental Management Professionals	Van Ness Feldman
GE Power	Vernon Public Utilities
Heorot Power Management	Western States Petroleum Association
	Yorke Engineering

ATTACHMENT E

RESOLUTION NO. 18-____

A Resolution of the Governing Board of the South Coast Air Quality Management District (SCAQMD) certifying the Final Mitigated Subsequent Environmental Assessment (SEA) for Proposed Amended Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities.

A Resolution of the SCAQMD Governing Board amending Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities.

WHEREAS, the SCAQMD Governing Board finds and determines with certainty that Proposed Amended Rule 1135 is considered a “project” as defined by the California Environmental Quality Act (CEQA); and

WHEREAS, the SCAQMD has had its regulatory program certified pursuant to Public Resources Code Section 21080.5 and CEQA Guidelines Section 15251(I), and has conducted a CEQA review and analysis of Proposed Amended Rule 1135 pursuant to such program (SCAQMD Rule 110); and

WHEREAS, the SCAQMD staff has prepared a Draft Mitigated SEA pursuant to its certified regulatory program and CEQA Guidelines Sections 15251, 15252, 15162, and 15070 setting forth the potential environmental consequences of Proposed Amended Rule 1135 and determined that the proposed project would not have the potential to generate significant adverse environmental impacts after mitigation measures are applied; and

WHEREAS, the Draft Mitigated SEA was circulated for a 30-day public review and comment period, from September 18, 2018 to October 18, 2018, and one comment letter was received; and

WHEREAS, the Draft Mitigated SEA has been revised to include the comment received on the Draft Mitigated SEA and the response, so that it is now a Final Mitigated SEA; and

WHEREAS, it is necessary that the SCAQMD Governing Board review the Final Mitigated SEA prior to its certification, to determine that it provides adequate information on the potential adverse environmental impacts that may occur as a result of adopting Proposed Amended Rule 1135, including the response to the comment received relative to the Draft Mitigated SEA; and

WHEREAS, pursuant to CEQA Guidelines Section 15252 (a)(2)(A), significant adverse impacts were identified but mitigation measures are proposed which would reduce the potentially significant effects to less than significant levels; thus, mitigation measures are required for project approval and thus, a Mitigation Monitoring and Reporting Plan pursuant to Public Resources Code Section 21081.6 and CEQA Guidelines Section 15097, has been prepared; and

WHEREAS, Proposed Amended Rule 1135 and supporting documentation, including but not limited to, the Final Mitigated SEA, the Mitigating Monitoring and Reporting Plan, the Final Staff Report, and the Socioeconomic Impact Assessment, were presented to the SCAQMD Governing Board and the SCAQMD Governing Board has reviewed and considered this information, as well as has taken and considered staff testimony and public comment prior to approving the project; and

WHEREAS, the Final Mitigated SEA reflects the independent judgment of the SCAQMD; and

WHEREAS, the SCAQMD Governing Board finds and determines that all changes made in the Final Mitigated SEA after the public notice of availability of the Draft Mitigated SEA, were not substantial revisions and do not constitute significant new information within the meaning of CEQA Guidelines Section 15073.5 or 15088.5, because no new significant effects were identified, and no new project conditions or mitigation measures were added, and all changes merely clarify, amplify, or make insignificant modifications to the Draft Mitigated SEA, and recirculation is therefore not required; and

WHEREAS, the SCAQMD Governing Board finds and determines, taking into consideration the factors in Section (d)(4)(D) of the Governing Board Procedures (codified as Section 30.5(4)(D)(i) of the Administrative Code), that the modifications to paragraphs (d)(1), (d)(2), (e)(2), (e)(7), and (f)(2) of Proposed Amended Rule 1135 since the notice of public hearing was published add clarity that meet the same air quality objective as the rule proposed with the 30-day notice and are not so substantial as to significantly affect the meaning of the proposed amended rule within the meaning of Health and Safety Code Section 40726 because: (a) the changes do not impact emission reductions, (b) the changes do not affect the number or type of sources regulated by the rules, (c) the changes are consistent with the information contained in the notice of public hearing, and (d) the consideration of the range of CEQA alternatives is not applicable because the effects of Proposed Amended Rule 1135 do not cause significant impacts after the mitigation measures are applied and therefore, alternatives are not required; and

WHEREAS, Proposed Amended Rule 1135 will be submitted for inclusion into the State Implementation Plan; and

WHEREAS, the SCAQMD staff conducted a Public Workshop regarding Proposed Amended Rule 1135 on August 2, 2018; and

WHEREAS, Health and Safety Code Section 40727 requires that prior to adopting, amending or repealing a rule or regulation, the SCAQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing and in the staff report; and

WHEREAS, the SCAQMD Governing Board has determined that Proposed Amended Rule 1135 is needed to transition electricity generating facilities in the RECLAIM program to a command-and-control regulatory structure requiring Best Available Retrofit Control Technologies to reduce NOx emissions as directed by Control Measure CMB-05 of the Final 2016 Air Quality Management Plan; and

WHEREAS, the SCAQMD Governing Board obtains its authority to adopt, amend or repeal rules and regulations from Sections 39002, 40000, 40001, 40440, 40441, 40702, 40725 through 40728, 41508, and 41511 of the Health and Safety Code; and

WHEREAS, the SCAQMD Governing Board has determined that Proposed Amended Rule 1135 is written or displayed so that the meaning can be easily understood by the persons directly affected by it; and

WHEREAS, the SCAQMD Governing Board has determined that Proposed Amended Rule 1135 is in harmony with and not in conflict with or contradictory to, existing statutes, court decisions or state or federal regulations; and

WHEREAS, the SCAQMD Governing Board has determined that Proposed Amended Rule 1135 will not impose the same requirements as any existing state or federal regulations. The amendments are necessary and proper to execute the powers and duties granted to, and imposed upon, SCAQMD; and

WHEREAS, the SCAQMD Governing Board, in amending Rule 1135, references the following statutes which the SCAQMD hereby implements, interprets, or makes specific: Health and Safety Code Sections 39002, 40000, 40001, 40702, 40440(a), and 40725 through 40728.5; and

WHEREAS, the SCAQMD Governing Board has determined that the Socioeconomic Impact Assessment of Proposed Amended Rule 1135 is consistent with the March 17, 1989 Governing Board Socioeconomic Resolution for rule adoption; and

WHEREAS, the SCAQMD Governing Board has determined that the Socioeconomic Impact Assessment is consistent with the provisions of California Health and Safety Code Sections 40440.8, 40728.5, and 40920.6; and

WHEREAS, the SCAQMD Governing Board has determined that Proposed Amended Rule 1135 will result in increased costs to the affected industries, yet are considered to be reasonable, with a total annualized cost as specified in the Socioeconomic Impact Assessment; and

WHEREAS, the SCAQMD Governing Board has actively considered the Socioeconomic Impact Assessment and has made a good faith effort to minimize such impacts; and

WHEREAS, SCAQMD Rule 2002 – Allocations for Oxides of Nitrogen (NOx) and Oxides of Sulfur (SOx) provides an option for facilities to remain in RECLAIM if they receive a Final Determination to exit RECLAIM; and

WHEREAS, the SCAQMD Governing Board directs staff to resolve NSR issues prior to forcing any facilities to exit out of RECLAIM; and

WHEREAS, the SCAQMD specifies that the Planning and Rules Manager of Rule 1135 is the custodian of the documents or other materials which constitute the record of proceedings upon which the adoption of these proposed amendments is based, which are located at the South Coast Air Quality Management District, 21865 Copley Drive, Diamond Bar, California; and

WHEREAS, a public hearing has been properly noticed in accordance with the provisions of Health and Safety Code Section 40725 and 40440.5; and

WHEREAS, the SCAQMD Governing Board has held a public hearing in accordance with all applicable provisions of state and federal law; and

NOW, THEREFORE BE IT RESOLVED, that the SCAQMD Governing Board has considered the Final Mitigated SEA for Proposed Amended Rule 1135 together with all comments received during the public review period, and, on the basis of the whole record before it, the SCAQMD Governing Board finds that the Final Mitigated SEA was completed in compliance with CEQA and the SCAQMD's Certified Regulatory Program, and that it is presented to the SCAQMD Governing Board, whose members exercised their independent judgment and reviewed, considered and approved the information therein prior to acting on Proposed Amended Rule 1135; and

BE IT FURTHER RESOLVED, that the SCAQMD Governing Board adopts a Mitigation Monitoring and Reporting Plan pursuant to Public Resources Code Section 21081.6 and CEQA Guidelines Section 15097 that will mitigate potentially significant adverse environmental impacts to a level below significance so that Proposed Amended Rule 1135 will have no significant effects on the environment, and which is included as Attachment F (Attachment 1 to the Resolution) and incorporated herein by reference; and

BE IT FURTHER RESOLVED, that the SCAQMD Governing Board does hereby adopt, pursuant to the authority granted by law, Proposed Amended Rule 1135 as set forth in the attached, and incorporated herein by reference; and

BE IT FURTHER RESOLVED, that the SCAQMD Governing Board requests that Proposed Amended Rule 1135 be submitted into the State Implementation Plan; and

BE IT FURTHER RESOLVED, that the Executive Officer is hereby directed to forward a copy of this Resolution and Proposed Amended Rule 1135 to the California Air Resources Board for approval and subsequent submittal to the U.S. Environmental Protection Agency for inclusion into the State Implementation Plan.

DATE: _____

CLERK OF THE BOARDS

ATTACHMENT F

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

**Attachment 1 to the Governing Board Resolution for:
Final Mitigated Subsequent Environmental Assessment for Proposed Amended Rule 1135
– Emissions of Oxides of Nitrogen from Electricity Generating Facilities**

Mitigation Monitoring and Reporting Plan

**SCAQMD No. 09142018RB
State Clearinghouse No: 2016071006**

October 2018

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**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
GOVERNING BOARD**

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Speaker of the Assembly Appointee

VICE CHAIR: DR. CLARK E. PARKER, SR.
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County of San Bernardino

HILDA L. SOLIS
Supervisor, First District
County of Los Angeles

EXECUTIVE OFFICER:
WAYNE NASTRI

TABLE OF CONTENTS

INTRODUCTION.....	1
NO POTENTIAL SIGNIFICANT ADVERSE IMPACTS THAT CANNOT BE REDUCED BELOW A SIGNIFICANT LEVEL	3
FINDINGS NOT REQUIRED.....	3
STATEMENT OF OVERRIDING CONSIDERATIONS NOT REQUIRED.....	3
MITIGATION MONITORING AND REPORTING PLAN.....	3
CONCLUSION	9

INTRODUCTION

As a result of control measure CMB-05 - Further NO_x Reductions from RECLAIM Assessment, from the 2016 Air Quality Management Plan (AQMP), the South Coast Air Quality Management District (SCAQMD) Governing Board directed staff to begin the process of transitioning the current regulatory structure for emissions of oxides of nitrogen (NO_x) from facilities subject to SCAQMD Regulation XX – Regional Clean Air Incentives Market (RECLAIM) to an equipment-based command-and-control regulatory structure per SCAQMD Regulation XI – Source Specific Standards. SCAQMD staff conducted a programmatic analysis of the NO_x RECLAIM equipment at each facility to determine if there are appropriate and up-to-date BARCT NO_x limits within existing SCAQMD command-and-control rules for all RECLAIM equipment. This analysis concluded that command-and-control rules would need to be adopted and/or amended to reflect current BARCT and provide implementation timeframes for achieving BARCT. Consequently, SCAQMD staff determined that RECLAIM facilities should not exit RECLAIM unless their NO_x emitting equipment is subject to an adopted BARCT rule.

As such, SCAQMD staff has proposed amendments to Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities. Rule 1135 applies to electric generating units (e.g., diesel internal combustion engines located on Santa Catalina Island, boilers, and turbines that generate electric power for distribution, with the exception of cogeneration turbines and emergency internal combustion engines) at electricity generating facilities that are owned electric utilities, publicly owned electric utilities, or have a generation capacity of at least 50 megawatts of electrical power. Proposed Amended Rule (PAR) 1135 will update the NO_x emissions limits for electric generating units to reflect current BARCT and provide implementation timeframes to achieve compliance. PAR 1135 also proposes monitoring, reporting, and recordkeeping requirements. Additionally, PAR 1135 establishes exemptions from specific provisions.

In particular, PAR 1135 applies to RECLAIM and non-RECLAIM electricity generating facilities that are investor-owned electric utilities, publicly owned electric utilities, or have a generation capacity of at least 50 megawatts of electrical power. If adopted, PAR 1135 would:

- 1) Expand applicability to include units at RECLAIM electricity generating facilities and units at electricity generating facilities that were not at electric power generating systems subject to Rule 1135;
- 2) Update the NO_x and ammonia emission limits for boilers and gas turbines;
- 3) Establish NO_x emission limits and add new emission limits for ammonia, carbon monoxide, volatile organic compounds, and particulate matter for internal combustion engines;
- 4) Revise monitoring, reporting, and recordkeeping requirements; and
- 5) Revise exemptions.

Implementation of PAR 1135 is estimated to reduce NO_x emissions by 1.7 tons per by retrofitting or repowering of existing electric generating units with BARCT units that can achieve the revised NO_x emission limits, or the retiring of existing electric power generating units.

PAR 1135 is considered a “project” as defined by the California Environmental Quality Act (CEQA) (California Public Resources Code Sections 21000 et seq.). The SCAQMD as Lead Agency for the proposed project, prepared a Draft Mitigated Subsequent Environmental Assessment (SEA) which analyzed 17 environmental topic areas and the potential adverse environmental impacts that could be generated as a result of the proposed project. Analysis of PAR 1135 in the Draft Mitigated SEA indicated that while the project will reduce NOx emissions, complying with PAR 1135 may cause some facility operators to make physical modifications to their equipment in order to achieve compliance, and these activities may create secondary adverse environmental impacts. For example, in order to comply with the emission limits proposed in PAR 1135, owners/operators of some affected facilities may need to retrofit existing equipment by: 1) installing new or modifying existing air pollution control systems; 2) repowering existing equipment by replacing an electric generating unit such as a boiler with a new, different electric generating unit such as a turbine while generating an equivalent or greater net power output; or 3) replacing an electric generating unit with a new unit of the same type (e.g., replacing an old turbine with a new, more efficient turbine). As such, the Mitigated SEA identified and analyzed activities associated with installing new or modifying existing air pollution control systems, and repowering or replacing electric generating units as having potential secondary adverse environmental impacts associated with reducing NOx and other pollutants (e.g., ammonia, CO, VOC, and PM) from electric generating units. Thus, the analysis in the Draft Mitigated SEA concluded that only the topic of hazards and hazardous materials due to the storage and use of aqueous and was identified as having potentially significant adverse impacts if PAR 1135 is implemented. However, pursuant to CEQA Guidelines Section 15252, mitigation measures are required to avoid or reduce any potential significant adverse impacts that a project might have on the environment. As such, mitigation measures were crafted that would reduce the potentially significant adverse hazards and hazardous materials impacts to less than significant levels. No other environmental topic areas were identified in the Draft Mitigated SEA as having potentially significant adverse impacts. Thus, the analysis in the Draft Mitigated SEA concluded that there are no environmental topic areas that would be significantly adversely affected by PAR 1135 after mitigation measures are applied. In addition, because there are no remaining significant impacts after mitigation measures are applied, no project alternatives are required.

The Draft Mitigated SEA was released for a 30-day public review and comment period from Tuesday, September 18, 2018 to Thursday, October 18, 2018. Subsequent to the release of the Draft Mitigated SEA, modifications were made to PAR 1135. Staff has reviewed the modifications to PAR 1135 and concluded that none of the revisions: 1) constitute significant new information; 2) constitute a substantial increase in the severity of an environmental impact; or, 3) provide new information of substantial importance relative to the draft document. In addition, revisions to the proposed project in response to verbal or written comments would not create new, avoidable significant effects. As a result, these revisions do not require recirculation of the draft document pursuant to CEQA Guidelines Sections 15073.5 and 15088.5. The Draft Mitigated SEA has been revised to include the aforementioned modifications such that it is now the Final Mitigated SEA. Also, during the public comment period, the SCAQMD received one comment letter relative to the Draft Mitigated SEA. The comment received relative to the CEQA analysis in the Draft Mitigated SEA has been responded to and is included in Appendix F of the Final Mitigated SEA.

NO POTENTIAL SIGNIFICANT ADVERSE IMPACTS THAT CANNOT BE REDUCED BELOW A SIGNIFICANT LEVEL

Analysis in the Final Mitigated SEA did not identify any environmental topic areas that cannot be reduced below a significant level. Therefore, there are no potentially significant adverse impacts as a result of the proposed project.

FINDINGS NOT REQUIRED

Public Resources Code Section 21081 and CEQA Guidelines Section 15091(a) state that no public agency shall approve or carry out a project for which a CEQA document has been completed which identifies one or more significant adverse environmental effects of the project unless the public agency makes one or more written findings for each of those significant effects, accompanied by a brief explanation of the rationale for each finding. Additionally, the findings must be supported by substantial evidence in the record. [CEQA Guidelines Section 15091(b)]. As stated in the Final Mitigated SEA and summarized above, analysis of the proposed project did not result in the identification of any environmental topic areas that would be significantly adversely affected after mitigation; therefore, findings are not required and have not been prepared.

STATEMENT OF OVERRIDING CONSIDERATIONS NOT REQUIRED

If significant adverse impacts of a proposed project remain after incorporating mitigation measures, or no measures or alternatives to mitigate the adverse impacts are identified, the lead agency must make a determination that the benefits of the project outweigh the unavoidable adverse environmental effects if it is to approve the project. CEQA requires the decision-making agency to balance, as applicable, the economic, legal, social, technological, or other benefits of a proposed project against its unavoidable environmental risks when determining whether to approve the project. [CEQA Guidelines Section 15093(a)]. If the specific economic, legal, social, technological, or other benefits of a proposed project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered “acceptable.” [CEQA Guidelines Section 15093(a)]. Because the Final Mitigated SEA did not identify any environmental topic areas that would be significantly adversely affected after mitigation, a Statement of Overriding Considerations is not required and was not prepared.

MITIGATION MONITORING AND REPORTING PLAN

Of the 17 environmental topic areas analyzed in the Final Mitigated SEA, only the topic of hazards and hazardous materials due to the storage and use of aqueous ammonia was identified as having potentially significant adverse impacts. Pursuant to CEQA Guidelines Section 15252, mitigation measures are required to avoid or reduce any potential significant adverse impacts that a project might have on the environment. As such, mitigation measures were crafted that would reduce the potentially significant adverse hazards and hazardous materials impacts to less than significant levels. In accordance with CEQA Guidelines Section 15097(a), the lead agency shall adopt a program for monitoring or reporting for the revisions to the project which it has required and the measures it has imposed to mitigate or avoid significant environmental effects. To fulfill this requirement, the SCAQMD has developed this Mitigation Monitoring and Reporting Plan to address the mitigation measures required for the otherwise potentially significant adverse hazards and hazardous materials impacts that may result from implementing PAR 1135. Each

operator of any facility required to comply with this Mitigation Monitoring and Reporting Plan shall keep records onsite of applicable compliance activities to demonstrate the steps taken to assure compliance with all of the mitigation measures, as applicable.

Hazards and Hazardous Materials Impacts Due to Storage and Use of Aqueous Ammonia

Impacts Summary: The ongoing storage and handling of aqueous ammonia at facilities affected by PAR 1135 could create a significant adverse hazards impact to the public due to the existing possibility for an accidental spill and release of aqueous ammonia, which could create a potential risk for an offsite public and sensitive receptor exposure.

Ammonia, though not a carcinogen, is a chronic and acutely hazardous material. Located on the MSDS for aqueous ammonia (19 percent by weight), the hazards ratings are as follows: health is rated 3 (highly hazardous), flammability is rated 1 (slight), and reactivity is rated 0 (none). Therefore, an increase in the use of ammonia in response to the proposed project may increase the current existing risk setting associated with deliveries (i.e., truck and road accidents) and onsite or offsite spills for each facility that currently uses, will begin to use, or will increase the use of ammonia. Exposure to a toxic gas cloud is the potential hazard associated with this type of control equipment. A toxic gas cloud is the release of a volatile chemical such as anhydrous ammonia that could form a cloud and migrate off-site, thus exposing individuals. Anhydrous ammonia is heavier than air such that when released into the atmosphere, it would form a cloud at ground level rather than be dispersed. “Worst-case” conditions tend to arise when very low wind speeds coincide with the accidental release, which can allow the chemicals to accumulate rather than disperse. Possible sources of potential aqueous ammonia releases include aqueous ammonia delivery trucks and aqueous ammonia storage tanks.

In addition, the shipping, handling, storage, and disposal of hazardous materials inherently poses a certain risk of a release to the environment. Thus, the routine transport of hazardous materials, use, and disposal of hazardous materials may increase as a result of implementing the proposed project. Further, if a facility installs air pollution control technology that utilizes ammonia, such as selective catalytic reduction (SCR) units, PAR 1135 may alter the transportation modes for feedstock and products to/from the existing facilities such as aqueous ammonia and catalyst. It is important to note, however, that the Final Mitigated SEA only identified the storage and use of aqueous ammonia as having potentially significant hazards and hazardous materials impacts requiring mitigation measures. Further, the Final Mitigated SEA also concluded that the routine transport and disposal of hazardous materials would have less than significant hazards and hazardous materials impacts, such that mitigation measures were not required.

To the extent that a facility would need to install a new aqueous ammonia storage tank as part of the proposed project, the implementation of mitigation measures HZ-1 through HZ-6 would be expected to prevent a catastrophic release of aqueous ammonia from leaving a facility’s property and exposing offsite sensitive receptors, thus, reducing a

potentially significant hazards and hazardous materials impact due to storage and use of aqueous ammonia to less than significant levels.

Current SCAQMD practice typically does not allow the use of anhydrous ammonia for air pollution control equipment. Further, to minimize the hazards associated with using ammonia for air pollution control technology, it is the permitting practice of the SCAQMD to typically require the use of 19 percent by volume aqueous ammonia in air pollution control equipment for the following reasons: 1) 19 percent aqueous ammonia does not travel as a dense gas like anhydrous ammonia; and 2) 19 percent aqueous ammonia is not on any acutely hazardous material lists unlike anhydrous ammonia or aqueous ammonia at higher percentages. As such, SCAQMD staff does not typically issue permits for the use of anhydrous ammonia or aqueous ammonia in concentrations higher than 19 percent by volume for use in SCR systems. As a result, this impact summary focuses on the use of 19 percent by volume aqueous ammonia. Thus, because aqueous ammonia (at 19 percent by weight) would be typically required for any permits issued for the installation of air pollution control equipment that utilize ammonia and because MMHZ-1 requires the use of aqueous ammonia at a concentration less than or equal to 19 percent by volume, hazards from toxic clouds are expected to be lessened when compared to higher concentrations of ammonia. As a practical matter, the actual concentration that is typically utilized is a solution of 19% aqueous ammonia, which contains approximately 81% water. Due to the high water content, aqueous ammonia is not considered to be flammable. Thus, heat-related hazard impacts such as fires, explosions, and boiling liquid-expanding vapor explosion (BLEVE) are not expected to occur from the increased delivery, storage and use of aqueous ammonia as part of implementing PAR 1135.

Further, the accidental release of ammonia from a delivery and use is a localized event (i.e., the release of ammonia would only affect the receptors that are within the zone of the toxic endpoint). The accidental release from offloading aqueous ammonia during a delivery would also be temporally limited in the fact that deliveries are not likely to be made at the same time in the same area and the safety devices required as part of MMHZ-2 further reduce the likelihood of an accidental release. Based on these limitations, it is assumed that an accidental release would be limited to a single delivery at a single facility at a time. In addition, it is unlikely that an accidental release from both a delivery truck and the stationary storage tank would result in more than the amount evaluated in the catastrophic release of the storage tank because the level of ammonia in the storage tanks would be low or else the delivery trip would not be necessary. In addition, implementation of MMHZ-4 (grating covered trench) and MMHZ-5 (underground gravity drain) would further reduce the impact from an accidental release during the delivery and transfer of aqueous ammonia to the storage tank.

The analysis of hazard impacts can rely on information from past similar projects (i.e., installing new, or retrofitting existing equipment with NO_x control technology that utilizes ammonia to comply with SCAQMD rules and regulations and installation of associated ammonia storage tanks) where the SCAQMD was the lead agency responsible for preparing an environmental analysis pursuant to CEQA. To the extent that future

projects to install NO_x control technology that utilizes aqueous ammonia and associated aqueous ammonia storage equipment conform to the hazard analysis in the Final Mitigated SEA, no further hazard analysis may be necessary. If site-specific characteristics are involved with future projects to install NO_x control equipment that utilize aqueous ammonia that are outside the scope of this analysis, a further hazards analysis for aqueous ammonia may be warranted.

A hazard analysis is dependent on several parameters about the potential hazard such as the capacity of the aqueous ammonia storage tank, the concentration of the aqueous ammonia, meteorological conditions, location of nearest receptor, and the dimensions of secondary containment, if any. If a facility were to install a new aqueous ammonia tank to supply additional aqueous ammonia to air pollution control equipment (e.g., SCR technology) and the effects of an offsite consequence from an accidental release of aqueous ammonia due to a tank rupture was analyzed using the EPA RMP*Comp (Version 1.07) model resulted in a significant hazards impact to sensitive receptors, the facility operator would be required to implement the following feasible mitigation measures to reduce the impacts to less than significant levels and prevent a catastrophic release of aqueous ammonia from leaving a facility's property.

Mitigation Measures: The following mitigation measures are required for any facility whose operators choose to install a new aqueous ammonia storage tank and the offsite consequence analysis indicates that sensitive receptors will be located within the toxic endpoint distance. SCAQMD staff will conduct a CEQA evaluation of each facility-specific project proposed in response to the proposed project and determine if the project is covered by the analysis in this Mitigated SEA. In addition, these mitigation measures will be included in a mitigation monitoring and reporting plan as part of issuing SCAQMD permits to construct for the facility-specific project. The mitigation measures will be enforceable by SCAQMD personnel.

Hazards and Hazardous Materials

- HZ-1 Require the use of aqueous ammonia at concentrations less than or equal to 19 percent by volume for all facilities regulated by Rule 1135.
- HZ-2 Install safety devices, including but not limited to: continuous tank level monitors (e.g., high and low level), temperature and pressure monitors, leak monitoring and detection system, alarms, check valves, and emergency block valves.
- HZ-3 Install secondary containment such as dikes and/or berms to capture 110 percent or more of the storage tank volume in the event of a spill.
- HZ-4 Install a grating-covered trench around the perimeter of the delivery bay to passively contain potential spills from the tanker truck during the transfer of aqueous ammonia from the delivery truck to the storage tank.

HZ-5 Equip the truck loading/unloading area with an underground gravity drain that flows to a large on-site retention basin to provide sufficient ammonia dilution to the extent that no hazards impact is possible in the event of an accidental release during transfer of aqueous ammonia.

HZ-6 Install tertiary containment that is capable of evacuating 110 percent or more of the storage tank volume from the secondary containment area.

Implementing Parties: The SCAQMD's Governing Board finds that implementing the mitigation measures HZ-1 through HZ-6 is the responsibility of the owner, operator, or agent of each affected facility who submits a permit application to comply with the proposed project.

Implementation Mechanism: Mitigation measures HZ-1 through HZ-6 shall be included as a condition in the SCAQMD Permit to Construct and Permit to Operate. Further, all information required as part of this Mitigation Monitoring and Reporting Plan shall be provided by the owner, operator or agent of the affected facility at the time when an applicant submits a permit application.

Monitoring Agency: The SCAQMD's Governing Board finds that through its discretionary authority to issue and enforce permits for this project and to implement conditions to prevent an air pollution nuisance, the SCAQMD will ensure compliance with mitigation measures HZ-1 through HZ-6. Mitigation monitoring and reporting (MMR) will be accomplished as follows:

MMRHZ-1 All aqueous ammonia used and stored onsite shall be at a concentration of less than 19 percent by volume.

Each facility operator shall ensure the concentration of aqueous ammonia used and stored onsite is less than 19 percent by volume. The percent by volume of aqueous ammonia shall be posted on the aqueous ammonia tank at all times. The SCAQMD may conduct inspections of the site to verify compliance.

MMRHZ-2: Safety devices shall be installed on all equipment associated with the use and storage of aqueous ammonia, to the extent feasible.

At the time of submitting an application for a Permit to Construct for an aqueous ammonia storage tank each facility operator shall submit a list of all safety devices installed. Safety devices may include, but are not limited to: continuous tank level monitors (e.g., high and low level), temperature and pressure monitors, leak monitoring and detection system, alarms, check valves, and emergency block valves. Once the aqueous ammonia storage tank becomes operational, each facility operator shall ensure all safety devices are maintained and are functioning properly. All maintenance records shall be kept onsite from the initiation of operations.

MMRHZ-3: All facility operators shall install a secondary containment system such as a dike or berm to capture 110 percent or more of the aqueous ammonia storage tank volume in the event of a spill.

At the time of submitting an application for a Permit to Construct for an aqueous ammonia storage tank each facility operator shall submit plans for a secondary containment system to capture 110 percent or more of the aqueous ammonia storage tank volume in the event of a spill. Secondary containment systems may include, but are not limited to: a dike or berm. Once the aqueous ammonia storage tank becomes operational, each facility operator shall ensure all secondary containment systems are maintained, free of detritus, and are functioning properly. All maintenance records shall be kept onsite from the initiation of operations.

MMRHZ-4: All facility operators shall install a grating-covered trench around the perimeter of the aqueous ammonia delivery bay to passively contain potential spills from the tanker truck during the transfer of aqueous ammonia from the delivery truck to the storage tank.

At the time of submitting an application for a Permit to Construct for an aqueous ammonia storage tank each facility operator shall submit plans for installation of a grating covered trench around the perimeter of the delivery bay to passively contain spills from the tanker truck during the transfer of aqueous ammonia from the delivery truck to the aqueous ammonia storage tank. Once the aqueous ammonia storage tank becomes operational, each facility operator shall ensure the grating-covered trench is maintained, free of detritus, and is functioning properly. All maintenance records shall be kept onsite from the initiation of operations.

MMRHZ-5: All facility operators shall equip the truck loading/unloading area with an underground gravity drain that flows to a large on-site retention basin to provide sufficient ammonia dilution to the extent that no hazards impact is possible in the event of an accidental release during transfer of aqueous ammonia.

At the time of submitting an application for a Permit to Construct for an aqueous ammonia storage tank each facility operator shall submit plans for installation of a an underground gravity drain that flows to a large on-site retention basin to provide sufficient ammonia dilution to the extent that no hazards impact is possible in the event of an accidental release during transfer of aqueous ammonia.. Once the aqueous ammonia storage tank becomes operational, each facility operator shall ensure the underground gravity drain is maintained, free of detritus, and is functioning properly. All maintenance records shall be kept onsite from the initiation of operations.

MMRHZ-6: All facility operators shall install a tertiary containment system capable of evacuating 110 percent or more of the aqueous ammonia storage tank volume from the secondary containment area.

At the time of submitting an application for a Permit to Construct for an aqueous ammonia storage tank each facility operator shall submit plans for a tertiary containment system to capture 110 percent or more of the aqueous ammonia storage tank volume from the secondary containment area in the event of a spill. Once the aqueous ammonia

storage tank becomes operational, each facility operator shall ensure all tertiary containment systems are maintained, free of detritus, and are functioning properly. All maintenance records shall be kept onsite from the initiation of operations.

CONCLUSION

Mitigation measures were crafted after the analysis in the Final Mitigated SEA indicated that the topic of hazards and hazardous materials could create potentially significant adverse impacts for the storage and use of aqueous ammonia prior to mitigation. Therefore, mitigation measures were included in the Final Mitigated SEA to reduce the potentially significant adverse hazards and hazardous materials impacts to less than significant levels after mitigation measures are applied. Further, based on a “worst-case” analysis, any potentially significant adverse hazards and hazardous materials impacts due to the storage and use of aqueous ammonia from implementing PAR 1135 would be reduced to less than significant levels after mitigation measures HZ-1 through HZ-6 are applied. In addition, because there are no remaining significant impacts after mitigation measures are applied, no project alternatives are required.

ATTACHMENT G

(Adopted August 4, 1989)(Amended December 21, 1990)(Amended July 19, 1991)
(PAR 1135 November 2, 2018)

PROPOSED AMENDED RULE 1135. EMISSIONS OF OXIDES OF NITROGEN FROM ~~ELECTRIC POWER GENERATING SYSTEMS~~ ELECTRICITY GENERATING FACILITIES

(a) Purpose

The purpose of this rule is to reduce emissions of oxides of nitrogen (NO_x) from electric generating units at electricity generating facilities.

(~~a~~b) Applicability

This rule ~~shall applies~~ apply to electric ~~power-generating systems~~ units at electricity generating facilities.

(~~b~~c) Definitions

(1) ~~ADVANCED-COMBUSTION-RESOURCE~~ means a combustion resource, within or outside the District, irrespective of ownership, capable of generating electricity using ~~cogeneration; combined cycle gas turbines; intercooled, chemically recuperated, or other advanced gas turbines; and other advanced combustion processes.~~

(2) ~~ALTERNATIVE RESOURCE~~ means a resource, within or outside the District, irrespective of ownership, capable of generating electricity in a non-conventional manner, including, but not limited to: solar; geothermal; wind; fuel cells; electricity conservation; and electricity demand-side management measures.

(3) ~~APPROVED ALTERNATIVE OR ADVANCED-COMBUSTION-RESOURCE~~ means an alternative resource or advanced combustion resource which is approved by the Executive Officer. ~~The Executive Officer shall disapprove an alternative resource or an advanced combustion resource unless and until it:~~

(A) ~~Displaces boiler capacity existing in the District on or after July 19, 1991; and~~

(B) ~~Emits NO_x at no more than 0.10 pound per net megawatt-hours (MWH) on a daily average basis if the resource is located within the District, or no more than 0.05 pound per net MWH on a daily average basis if the resource is located outside the District; for cogeneration facilities, the daily NO_x emission per MWH shall be calculated after deducting 0.013 pound of NO_x~~

- ~~for each million BTU of useful thermal energy produced which is not used for electric power generation; and~~
- (C) ~~Commences operation on or after July 19, 1991; and~~
- (D) ~~Is proven to the satisfaction of the Executive Officer that the net megawatt-hours obtained or conserved are real, quantifiable, and enforceable.~~
- (4) ~~ALTERNATIVE RESOURCE OR ADVANCED COMBUSTION RESOURCE BREAKDOWN means an unscheduled condition during which no net electric power is obtained from an approved alternative or advanced combustion resource for 24 continuous hours or more.~~
- (1) ANNUAL CAPACITY FACTOR means the ratio between the measured heat input (in MMBTU) from fuel consumption to an electric generating unit during a calendar year and the potential heat input (in MMBTU) to the electric generating unit had it been operated for 8,760 hours during a calendar year at the permitted heat input rating, expressed as a percent. Annual capacity factor does not include heat input of the electric generating unit during the Emergency Phase of the California Energy Commission Energy Emergency Response Plan or a Governor-declared State of Emergency or Energy Emergency.
- (52) ~~BOILER means any combustion equipment in the District-fired with liquid and/or gaseous fuel, which is primarily used to produce steam that is expanded in a turbine generator used for electric power generation. This includes only units existing on July 19, 1991, which are owned or operated by any one of the following: Southern California Edison, Los Angeles Department of Water and Power, City of Burbank, City of Glendale, and City of Pasadena, or any of their successors.~~
- (6) ~~COGENERATION FACILITY means equipment used to produce electricity and other forms of useful thermal energy through the sequential use of energy, as specified in Public Resources Code Section 25134.~~
- (3) COGENERATION TURBINE means any gas turbine which is designed to generate electricity and useful heat energy at the same time (combined heat and power).
- (4) COMBINED CYCLE GAS TURBINE means any gas turbine that recovers heat from the gas turbine exhaust gases for use in a heat recovery steam generator to generate additional electricity.
- (75) ~~DAILY means a calendar day starting at 12 midnight and continuing through to the following 12 midnight hour~~ 11:59 p.m.

- (8) ~~DISPLACE~~ means either of the following:
- (A) ~~The concurrent and enforceable reduction of equivalent boiler capacity from one or more designated boilers in the District, such that the combined electric power obtained from approved alternative or advanced combustion resources and designated boilers does not exceed the maximum permitted capacity of the designated boilers, on an hourly average basis; or~~
 - (B) ~~The reduction of boiler capacity, equivalent to the maximum electric power obtained from the approved alternative or advanced combustion resource, from one or more boilers in the District for not less than six months as specified in the Permit to Operate. The owner or operator of the boilers may apply to the Executive Officer for restoration of the displaced capacity in the Permit to Operate, which shall be approved upon:~~
 - (i) ~~Disapproval of the previously approved alternative or advanced combustion resource which was based on such displaced capacity; and~~
 - (ii) ~~Evidence of compliance with all provisions of this rule after the restoration of the displaced capacity.~~
- ~~During an alternative or advanced combustion resource breakdown, the associated displaced boiler capacity may be utilized up to a maximum of 120 hours in any calendar month, provided the Executive Officer is notified prior to such utilization.~~
- (6) DUCT BURNER means a device located in the heat recovery steam generator of a gas turbine that combusts fuel and adds heat energy to the turbine exhaust to increase the output of the heat recovery steam generator.
- (9) ~~DISTRICT-WIDE-DAILY LIMITS~~ means the daily emissions limits applicable to any electric power generating system, consisting of an emissions cap and/or an emissions rate.
- (A) ~~EMISSIONS CAP~~ is expressed in pounds of NO_x and calculated as the total daily NO_x emissions in pounds from all boilers, replacement units, and approved alternative or advanced combustion resources in the District.
 - (B) ~~EMISSIONS RATE~~ is expressed in pounds of NO_x per Megawatt-Hour and calculated as the total daily NO_x emissions in pounds from all boilers, replacement units, and approved alternative or advanced combustion resources in the District, divided by the total daily net electric power generated and/or obtained in Megawatt-Hours from all boilers and replacement units in the District and approved alternative or advanced

~~combustion resources within or outside the District. For the purposes of this calculation, 70 percent, or higher if proven to the satisfaction of the Executive Officer, of the net Megawatt Hours obtained from an approved alternative or advanced combustion resource outside the District shall be used. NO_x emissions during start-ups and shutdowns, up to a maximum of 12 hours for each event, shall not be included in the determination of the emissions rate for an electric power generating system if five or fewer boilers are in operation during this period.~~

~~NO_x emissions from approved cogeneration facilities shall be calculated after deducting 0.013 pound of NO_x for each million BTU of useful thermal energy produced which is not used for electric power generation.~~

- (7) ELECTRIC GENERATING UNIT means a boiler that generates electric power, gas turbine that generates electric power with the exception of cogeneration turbines, or diesel internal combustion engine that generates electric power and is located on Santa Catalina Island with the exception of emergency internal combustion engines.
- (8) ELECTRICITY GENERATING FACILITY means a facility that is owned or operated by an investor-owned electric utility; is owned or operated by a publicly owned electric utility; or has electric generating units with a combined generation capacity of 50 megawatts or more of electrical power for distribution in the state or local electrical grid system. Electricity generating facility does not include landfills, petroleum refineries, or publicly owned treatment works.
- (10) ~~ELECTRIC POWER GENERATING SYSTEM~~ means all boilers, replacement units and approved alternative or advanced combustion resources owned or operated by, and approved alternative or advanced combustion resources and replacement units under contract to sell power to, any one of the following: Southern California Edison, Los Angeles Department of Water and Power, City of Burbank, City of Glendale, City of Pasadena, or any of their successors.
- (149) FORCE MAJEURE NATURAL GAS CURTAILMENT means an interruption in natural gas service due to unavoidable or unforeseeable failure, malfunction, or natural disaster, not resulting from an intentional or negligent act or omission on the part of the owner or operator of an boiler or a replacement unit electric generating unit, or a supply restriction resulting from the application of a California Public Utilities Commission (CPUC) priority allocation system of CPUC Southern California Gas Company Tariff Rule 23, such that the daily fuel needs of an boiler

~~or a replacement unit~~electric generating unit cannot be met with the natural gas available.

- (10) FORMER RECLAIM NO_x SOURCE for the purpose of this rule means an electric generating unit located at an electricity generating facility or its successor that was in the Regional Clean Air Incentives Market (RECLAIM) as of January 5, 2018, as established in Regulation XX, that has received a final determination notification from the Executive Officer or the owner or operator opts-out of RECLAIM, and is no longer in the RECLAIM program.
- (11) INTERNAL COMBUSTION ENGINE means a reciprocating type engine in which the combustion of a fuel occurs with an oxidizer (usually air) in a combustion chamber to produce mechanical energy.
- (12) INVESTOR-OWNED ELECTRIC UTILITY means a business organization managed as a private enterprise that operates electric generating unit(s) for electric power distribution primarily in the grid system overseen by the California Public Utilities Commission.
- (13) LANDFILL means an entire disposal facility in a contiguous geographical space where solid waste is placed in or on land.
- (14) NON-RECLAIM NO_x SOURCE for the purpose of this rule means an electric generating unit located at an electricity generating facility or its successor that was not in the RECLAIM as of January 5, 2018, as established in Regulation XX.
- ~~(12)~~(15) OXIDES OF NITROGEN (NO_x) EMISSIONS means the sum of nitric oxides and nitrogen dioxides emitted, collectively expressed as nitrogen dioxide emissions.
- ~~(13)~~ REPLACEMENT UNIT for the purpose of this rule means equipment within an electric power generating system, irrespective of ownership, which permanently replaces boiler capacity existing on July 19, 1991 in the same system in the District, and meets the requirements of Best Available Control Technology (BACT), as determined by the Executive Officer. If the replacement unit's electric power output in net megawatts exceeds the permitted net megawatt capacity of the boiler(s) replaced, only the electric power generation and NO_x emissions prorated to the permitted net megawatt capacity of the boiler(s) replaced shall be subject to the provisions of this rule.
- (16) PETROLEUM REFINERY means a facility identified by the North American Industry Classification System Code 324110, Petroleum Refineries.
- (17) PUBLICLY OWNED ELECTRIC UTILITY means a special-purpose district or other jurisdiction, including municipal districts or municipalities, that operates

- electric generating unit(s) for electric power distribution, either partially or totally, to residents of that district or jurisdiction.
- (18) PUBLICLY OWNED TREATMENT WORKS means wastewater treatment or reclamation plants owned and operated by a public entity, including all operations within the boundaries of the wastewater and sludge treatment plant.
- (19) RECLAIM NO_x SOURCE for the purpose of this rule means an electric generating unit located at an electricity generating facility or its successor that is in the RECLAIM as of January 5, 2018, as established in Regulation XX and is still in RECLAIM on the relevant date.
- (20) SCAQMD-WIDE DAILY LIMITS means the daily emissions limits applicable to any electricity generating facility consisting of an emissions cap and/or an emissions rate.
- (A) EMISSIONS CAP is expressed in pounds of NO_x and calculated as the total daily NO_x emissions in pounds from all boilers at an electricity generating facility.
- (B) EMISSIONS RATE is expressed in pounds of NO_x per Megawatt-Hour and calculated as the total daily NO_x emissions in pounds from all boilers at an electricity generating facility, divided by the total daily net electric power generated and/or obtained in Megawatt-Hours from all boilers at an electricity generating facility. NO_x emissions during start-ups and shutdowns, up to a maximum of 12 hours for each event, shall not be included in the determination of the emissions rate for an electricity generating facility if five or fewer boilers are in operation during this period.
- (21) SHUTDOWN means the time period during which an electric generating unit begins reducing load and ending in a period of zero fuel flow or as otherwise defined in the SCAQMD permit.
- (22) SIMPLE CYCLE GAS TURBINE means any stationary combustion turbine that does not recover heat from the combustion turbine exhaust gases to heat water or generate steam.
- (1423) START-UP-OR-SHUTDOWN is any one of the following events:
- (A) START-UP is means the time period during which that begins when an boiler electric generating unit is heated to its normal operating temperature range from a cold or ambient temperature, or from a hot standby condition where no net electric power is produced for at least 8 hours begins combusting fuel after a period of zero fuel flow and ends when the electric generating unit generates electricity for sale

over the grid for power distribution, or as otherwise defined in the SCAQMD permit.

~~(B) SHUTDOWN is the time period during which a boiler is allowed to cool from its normal operating temperature range to a cold or ambient temperature, or to a hot standby condition where no net electric power is produced for at least 8 hours.~~

(24) TUNING means adjusting, optimizing, rebalancing, or other similar operations to an electric generating unit or an associated control device or as otherwise defined in the SCAQMD permit. Tuning does not include normal operations to meet load fluctuations.

~~(15) USEFUL THERMAL ENERGY means thermal energy used in any industrial or commercial process, or used in any heating or cooling application. This shall not include the thermal energy of any condensate returned from the process or application to the cogeneration facility, or any thermal energy used to produce electric power.~~

(ed) Emissions ~~Limitations~~ Limits

(1) Emissions Limits for Boilers and Gas Turbines

Notwithstanding the exemptions contained in Rule 2001 – Applicability, subdivision (j) – Rule Applicability and its accompanying Table 1: Existing Rules Not Applicable to RECLAIM Facilities for Requirements Pertaining to NO_x Emissions, on and after January 1, 2024, or when required by a permit to operate issued to effectuate the requirements in this rule, whichever occurs first, the owner or operator of an electricity generating facility shall not operate, a boiler or gas turbine in a manner that exceeds the NO_x and ammonia emissions limits listed in Table 1: Emissions Limits for Boilers and Gas Turbines, where:

(A) Boilers and gas turbines ~~installed~~ for which the owner or operator has applied for permits to construct after [Date of Adoption] shall average the NO_x and ammonia emissions limits in Table 1 over a 60 minute rolling average; ~~or~~

(B) Boilers and gas turbines ~~installed~~ or for which the owner or operator has applied for permits to construct prior to [Date of Adoption] ~~may~~ shall:

(i) Average the NO_x and ammonia emissions limits in Table 1 over a 60 minute rolling average; or

(ii) Retain the averaging time requirements specified on the SCAQMD permit as of [Date of Adoption].

Table 1: Emissions Limits for Boilers and Gas Turbines

<u>Equipment Type</u>	<u>NO_x</u> <u>(ppmv)¹</u>	<u>Ammonia</u> <u>(ppmv)</u>	<u>Oxygen</u> <u>Correction</u> <u>(%, dry)</u>
<u>Boiler</u>	<u>5</u>	<u>5</u>	<u>3</u>
<u>Combined Cycle Gas Turbine and Associated Duct Burner</u>	<u>2</u>	<u>5</u>	<u>15</u>
<u>Simple Cycle Gas Turbine</u>	<u>2.5</u>	<u>5</u>	<u>15</u>

¹ – The NO_x emission limits in Table 1 shall not apply during start-up, shutdown, and tuning.

(2) Emissions Limits for Diesel Internal Combustion Engines

- (A) Notwithstanding the exemptions contained in Rule 2001 – Applicability, subdivision (j) – Rule Applicability and its accompanying Table 1: Existing Rules Not Applicable to RECLAIM Facilities for Requirements Pertaining to NO_x Emissions, on and after January 1, 2024, or when required by a permit to operate issued to effectuate the requirements in this rule, whichever occurs first, the owner or operator of an electricity generating facility located on Santa Catalina Island shall not operate a diesel internal combustion engine in a manner that exceeds the NO_x, ammonia, carbon monoxide, volatile organic compounds, and particulate matter emissions limits listed in Table 2: Emissions Limits for Diesel Internal Combustion Engines.
- (B) Diesel internal combustion engines installed prior to [Date of Adoption] may retain the averaging time requirements specified on the SCAQMD permit as of [Date of Adoption].

Table 2: Emissions Limits for Diesel Internal Combustion Engines

<u>NO_x^{1,4}</u> <u>(ppmv)^{1,4}</u>	<u>Ammonia¹</u> <u>(ppmv)¹</u>	<u>Carbon</u> <u>Monoxide²</u> <u>(ppmv)^{2,4}</u>	<u>Volatile Organic</u> <u>Compounds³</u> <u>(ppmv)^{3,4}</u>	<u>Particulate</u> <u>Matter</u> <u>(lbs/mmbtu)</u>
<u>45</u>	<u>5</u>	<u>250</u>	<u>30</u>	<u>0.0076</u>

¹ – Corrected to 15% oxygen on a dry basis and averaged over a 60 minute rolling average

² – Corrected to 15% oxygen on a dry basis and averaged over 15 minutes

³ – Measured as carbon, corrected to 15% oxygen on a dry basis, and averaged over sampling time required by the test method

⁴ – The NO_x, carbon monoxide, and volatile organic compounds emissions limits in Table 2 shall not apply during start-up, and shutdown, and tuning.

(3) Start-up, Shutdown, and Tuning Requirements

The owner or operator of an electricity generating facility shall meet start-up, shutdown, and tuning requirements in the SCAQMD permit for each electric generating unit. On and after January 1, 2024, the SCAQMD permit shall include limitations for duration, mass emissions, and number of start-ups, shutdowns, and, if applicable, tunings.

(4) Alternative Compliance Approach for Electric Generating Units Located on Santa Catalina Island

The owner or operator of an electricity generating facility located on Santa Catalina Island with diesel internal combustion engines that elects to meet a mass emission limit of 13 tons of NO_x annually by January 1, 2026 in lieu of complying with paragraph (d)(2)(A) shall:

- (A) On or before January 1, 2022, submit a written notification to the Executive Officer that specifies the decision to meet a mass emission limit of 13 tons of NO_x annually by January 1, 2026; provides a description of the technologies that will be implemented to meet the emission limits; and provides a schedule of submittal of permits to the SCAQMD and any other approving agency, the timeframe to order equipment, and the timeframe for installation of equipment that will demonstrate the facility can meet a mass emission limit of 13 tons of NO_x annually by January 1, 2026; and
- (B) On or before January 1, 2022, submit an application for a permit condition that limits total annual emissions from the facility to no more than 13 tons of NO_x emissions annually after December 31, 2025.

- (5) Time Extensions
- (A) The owner or operator of an electricity generating facility on Santa Catalina Island may submit a request to the Executive Officer for approval of an extension of up to three years to meet the emissions limits specified in paragraphs (d)(2) or (d)(4).
- (i) If electing to comply with paragraph (d)(2), a minimum of two units, excluding units exempt under paragraph (g)(3), shall meet the emissions limits in Table 2 by January 1, 2023; or
- (ii) If electing to comply with paragraph (d)(4), the facility shall meet a mass emission limit of 50 tons of NO_x annually for compliance year 2022, and meet a mass emission limit of 40 tons of NO_x annually for compliance year 2023.
- (B) The owner or operator that elects to submit a request for a time extension shall submit the request at least 365 days before the compliance deadline specified in subparagraph (d)(2)(A) or paragraph (d)(4).
- (C) The owner or operator that submits a request for a time extension request shall provide the following information to the Executive Officer:
- (i) Identification of the units for which a time extension is needed;
- (ii) The reason(s) a time extension is needed;
- (iii) Progress of replacing or retrofitting the electric generating units; and
- (iv) The length of time requested.
- (D) The Executive Officer will approve or disapprove the request for a time extension. Approval or disapproval will be based on the following criteria:
- (i) The owner or operator prepared the request for a time extension in compliance with subparagraphs (d)(5)(A) through (d)(5)(C); and
- (ii) The owner or operator provided sufficient details identifying the reason(s) a time extension is needed that demonstrates to the Executive Officer that there are extenuating circumstances that necessitate additional time to complete implementation. Such a demonstration may include, but is not limited to, providing detailed schedules, engineering designs, construction plans, land acquisition contracts, permit applications, and purchase orders.
- (E) If the Executive Officer approves the request for a time extension, the owner or operator shall:
- (i) Submit an application at least 18 months before the new compliance deadline for a permit condition that limits total annual emission from

the facility to no more than 13 tons of NO_x emission annually on and after the new compliance deadline, if electing to comply with paragraph (d)(4); and

(ii) Pay a mitigation fee within 30 days of the date of approval. The mitigation fee shall be \$100,000/year, or any portion of a year, after the compliance date specified in subparagraph (d)(2)(A) or paragraph (d)(4).

~~(1) Southern California Edison, or its successor, shall not operate its electric power generating system unless the following District wide daily limits on emissions rate and emissions cap are met during the applicable time period:~~

	<u>District Wide Daily Limits</u>	<u>Lb NO_x</u>
	<u>Lb NO_x/Net Megawatt (MW) Hr</u>	<u>Per Day</u>
Beginning December 31, 1989	1.10	
Beginning December 31, 1990	1.01	
Beginning December 31, 1991	0.91	
Beginning December 31, 1992	0.82	
Beginning December 31, 1993	0.72	
Beginning December 31, 1994	0.63	
Beginning December 31, 1995	0.53	
Beginning December 31, 1996	0.44	
Beginning December 31, 1997	0.34	
Beginning December 31, 1998	0.25	
Beginning December 31, 1999	0.15	13,400

~~(2) Los Angeles Department of Water and Power, or its successor, shall not operate its electric power generating system unless the following District wide daily limits on emissions rate and emissions cap are met during the applicable time period:~~

	<u>District Wide Daily Limits</u>	<u>Lb NO_x</u>
	<u>Lb NO_x/Net Megawatt (MW) Hr</u>	<u>Per Day</u>
Beginning December 31, 1989	1.60	
Beginning December 31, 1990	1.41	
Beginning December 31, 1991	1.21	
Beginning December 31, 1992	1.02	

Beginning December 31, 1993	0.82	
Beginning December 31, 1994	0.73	
Beginning December 31, 1995	0.63	
Beginning December 31, 1996	0.54	
Beginning December 31, 1997	0.43	
Beginning December 31, 1998	0.29	
Beginning December 31, 1999	0.15	5,400
Beginning December 31, 2004	0.15	6,400
Beginning December 31, 2009	0.15	7,400

(36) City of Glendale

(A) Until compliance with the provisions pursuant to paragraph (d)(1) is achieved, The City of Burbank, the City of Glendale, and the City of Pasadena, or any of their its successors, shall not operate their its boilers electric power generating system unless at least one of the following DistrictSCAQMD-wide daily limits on emissions rate or emissions cap is met during the applicable time period:

(A) ~~For the City of Burbank:~~

<u>Date</u>	<u>District Wide Daily Limits</u>	
	<u>Lb NO_x/Net Megawatt (MW) Hr</u>	<u>Lb NO_x Per Day</u>
Beginning December 31, 1989	2.47	3,870
Beginning December 31, 1993	1.73	2,763
Beginning December 31, 1996	0.99	1,657
Beginning December 31, 1999	0.20	580

(B) ~~For the City of Glendale:~~

<u>Date</u>	<u>District Wide Daily Limits</u>	
	<u>Lb NO_x/Net Megawatt (MW) Hr</u>	<u>Lb NO_x Per Day</u>
Beginning December 31, 1989	2.52	2,940
Beginning December 31, 1993	1.76	2,050
Beginning December 31, 1996	1.00	1,170

~~Beginning December 31, 1999 0.20 390~~

- ~~(i) Emissions rate of 0.20 pounds of NO_x per net Megawatt-Hour; or~~
- ~~(ii) Emissions cap of 390 pounds of NO_x per day.~~

~~(C) For the City of Pasadena:~~

Date	District-Wide Daily Limits	
	Lb NO_x/Net Megawatt (MW) Hr	Lb NO_x Per Day
Beginning December 31, 1989	3.05	5,230
Beginning December 31, 1993	2.12	3,680
Beginning December 31, 1996	1.18	2,130
Beginning December 31, 1999	0.20	900

~~(4B) Electric power generating systems-Until compliance with paragraph (d)(1) is achieved, the City of Glendale shall not emit total quantities of NO_x from all boilers, replacement units and approved alternative resources or advanced combustion resources in the District, for any calendar year beginning with 2000, in excess of the following limits:~~

- ~~(A) 1,640 tons per year for Southern California Edison Co.;~~
- ~~(B) 960 tons per year for Los Angeles Department of Water and Power;~~
- ~~(C) 56 tons per year for the City of Burbank;~~
- ~~(D) 35 tons of NO_x per calendar year for the City of Glendale.;~~

~~if Grayson combined cycle gas turbine Unit 8BC cannot produce electricity because of a breakdown for 30 continuous days or more, the annual NO_x emissions limit shall be increased by 65 pounds per day, up to a maximum of 41 tons per year.~~

~~(E) 80 tons per year for the City of Pasadena.~~

~~(5C) A violation of any requirement specified in subparagraphs (e)(1), or (e)(2), or (e)(3), or (e)(4) (d)(6)(A) or (d)(6)(B) shall constitute a violation of this rule for every permitted applicable unit operating during the exceedance period in the applicable electric power generating system. This provision shall not be applicable to approved alternative or advanced combustion resources, and compliance shall be determined assuming that NO_x emissions from approved alternative or advanced combustion resources occur at actual or permitted levels, whichever is lower.~~

~~(6) All retrofit emission control devices required to meet the provisions of this rule for the year 2000 shall be installed and be operative on each boiler by December 31,~~

~~1997, except for the three cities of Glendale, Pasadena and Burbank for whom the deadline shall be December 31, 1999. All replacement units and approved alternative or advanced combustion resources required by the approved compliance plan for all the electric power generating systems shall be installed and be operative by December 31, 1999.~~

- (7) ~~On or before July 1, 2022, The the owner or operator of each boiler and approved alternative or advanced combustion resource in the District an electricity generating facility shall submit an application for a change of permit conditions to reconcile their permit(s) with Rule 1135. include NO_x emission limits for each boiler and approved alternative or advanced combustion resource, as specified in the compliance plan requirements in subparagraph (d)(1)(C). Such applications shall be submitted no later than January 1, 1992, to the Executive Officer for approval.~~
- (8) ~~A violation of any unit specific NO_x emissions limits established in a District Permit to Operate or approved compliance plan shall constitute a violation of this rule for that unit of the electric power generating system.~~

(d) Compliance Plans

- (1) ~~Compliance Plan (Plan) approval and disapproval:~~
- (A) ~~Each owner or operator of a boiler shall submit a Plan by January 1, 1992 to the Executive Officer for approval. The Plan shall propose actions and alternatives which will be taken to meet or exceed the requirements of this rule.~~
- (B) ~~The Executive Officer shall seek input from the Air Resources Board (ARB), the California Energy Commission (CEC), and the California Public Utilities Commission (CPUC) prior to approval of the Plan. All written comments received from the ARB, the CEC, and the CPUC for a CPUC-regulated utility, within 30 days of the receipt of the Plan, shall be considered by the Executive Officer for Plan approval.~~
- (C) ~~The Executive Officer shall disapprove the Plan unless the applicant proves to the satisfaction of the Executive Officer that the implementation of the Plan will result in timely compliance with all provisions of this rule. The approved Plan shall specify a NO_x emission limit for each unit of the electric power generating system in Lb NO_x per net Megawatt Hour on an hourly average basis; such emission limit shall not be applicable when the unit is not producing any net electric power, or during a start-up, a shutdown, or 12 hours for each start-up or shutdown, whichever is less.~~

- (D) ~~On and after July 1, 1992, failure to have an approved Plan or failure to implement the provisions of an approved Plan shall constitute a violation of this rule.~~
- (2) ~~The Plan shall contain, at a minimum:~~
- (A) ~~A list of all boilers subject to this rule with the maximum rated net and gross generating capacity for each unit.~~
 - (B) ~~A schedule of equipment to be controlled, displaced, or replaced, indicating the type of control to be applied to each existing boiler and the emissions reductions for each compliance increment, and identifying each unit to be displaced with an alternative or advanced combustion resource.~~
 - (C) ~~Detailed schedules for submittal of permit applications, construction activities, and planned operation phases.~~
 - (D) ~~A detailed list of all assumptions and calculations used to determine compliance with the District-wide daily limits.~~
 - (E) ~~A list of the control devices and methods which are being proposed for each boiler specified in subparagraph (d)(2)(A), along with the percent NO_x reduction efficiency assumed for each.~~
 - (F) ~~Historical power generating data for each boiler and future resource plans used to support power generation mix assumptions.~~
 - (G) ~~For each year, beginning with 1992, a graph of the NO_x emission in Lb NO_x/hour versus net Megawatts generated on an hourly average basis for the full load range of each unit of the electric power generating system burning natural gas that will result in compliance with the District-wide daily limits as specified in subsection (c), Emissions Limitations, for the following cases:~~
 - (i) ~~Under a projected peak generation day for each future year of compliance, based on District guidelines, and~~
 - (ii) ~~Individually for each unit, under maximum power generation for that unit on a projected peak generation day for each future year of compliance.~~
 - (H) ~~Identification of conditions that may require an exemption under subsection (h) and the actions taken or to be taken to minimize or eliminate such conditions.~~
- (3) ~~The Plan shall also include proposed increments of progress for the following:~~
- (A) ~~Southern California Edison shall install and operate by December 31, 1993 a Selective Catalytic Reduction unit (SCR) on an existing 480 MW steam~~

- boiler such that NO_x-emissions from the facility do not exceed 0.25 pound of NO_x per net MWH; and
- (B) ~~Los Angeles Department of Water and Power shall replace at least 240 megawatts of existing steam boiler capacity by December 31, 1993 such that NO_x-emissions from the replacement unit do not exceed applicable Best Available Control Technology standards, as determined by the Executive Officer.~~
- (4) ~~Not earlier than July 1 of any year following 1992, amendments to a previously approved Plan may be proposed to the Executive Officer as necessary to reflect energy regulatory agency resource or municipal authority planning determinations, adjustments to unit specific emissions limits required in subparagraph (d)(1)(C) in view of emissions control performance test data, and advancements in emissions control technology. The Executive Officer shall disapprove such amendments unless the applicant proves to the satisfaction of the Executive Officer that the implementation of the amended Plan will result in timely compliance with all provisions of this rule.~~
- (5) ~~All approved Plans and approved amendments to Plans shall be submitted by the District to the Air Resources Board and the Environmental Protection Agency as source-specific revisions to the State Implementation Plan.~~
- (e) Measurements Monitoring, Recordkeeping, and Reporting
- (1) ~~The owner or operator of each boiler, replacement unit and approved alternative or advanced combustion resource in the District power shall install, operate, and maintain in calibration an continuous emission monitoring system (CEMS) and a Remote Terminal Unit (RTU) to demonstrate compliance with the provisions of this rule.~~
- (2) ~~Each CEMS shall meet all applicable federal, state and District requirements for certification, calibration, performance, measurement, maintenance, notification, recordkeeping, and reporting, including, but not limited to, the requirements set forth in the District's "CEMS Requirements Document for Utility Boilers," dated July 19, 1991. Prior to the installation of a CEMS, the owner or operator of each boiler, replacement unit and approved alternative or advanced combustion resource in the District shall submit a revised detailed CEM Plan by October 19, 1991 for the approval of the Executive Officer. The CEM Plan shall contain all information required in the District's "CEMS Requirements Document for Utility Boilers," dated July 19, 1991.~~

- ~~(3) Each RTU shall meet specifications set forth by the Executive Officer to ensure that emissions and other data necessary to determine compliance are reliably and accurately telecommunicated from each unit to the District in a format compatible with District equipment. Each RTU shall be installed with the prior approval of the Executive Officer by January 1, 1993.~~
- ~~(4) Starting December 21, 1990 until January 1, 1993, the owner or operator of each boiler, replacement unit and approved alternative or advanced combustion resource in the District shall submit a monthly compliance report to the Executive Officer, and shall make all data available to the District staff on a daily basis according to the interim reporting requirements specified in the "CEMS Requirements Document for Utility Boilers," dated July 19, 1991.~~
- ~~(5) The owner or operator of each boiler, replacement unit and approved alternative or advanced combustion resource in the District shall install testing facilities as specified in the "CEMS Requirements Document for Electric Generating Units," dated July 19, 1991, by January 1, 1993.~~
- ~~(6) The owner or operator of each boiler, replacement unit and approved alternative or advanced combustion resource in the District shall install, maintain and operate a backup data gathering and storage system after each associated RTU is installed, but not later than January 1, 1993, as specified in the "CEMS Requirements Document for Utility Boilers," dated July 19, 1991.~~
- ~~(7) CEMS data shall be gathered and recorded at least once per minute at each boiler, replacement unit and approved alternative or advanced combustion resource in the District, and valid data, as specified in the "CEMS Requirements Document for Utility Boilers," dated July 19, 1991, shall be obtained for at least 90 percent of the data points in any calendar day.~~
- ~~(8) If valid data is not obtained by a CEMS for any boiler, replacement unit or approved alternative or advanced combustion resource in the District, the following alternative means of NO_x emissions data generation may be used for not more than 72 hours in any one calendar month:
 - ~~(A) Reference test methods as specified in the "CEMS Requirements Document for Utility Boilers," dated July 19, 1991; or~~
 - ~~(B) Load curves provided approval is obtained as specified in the "CEMS Requirements Document for Utility Boilers," dated July 19, 1991. New load curves shall be submitted for the approval of the Executive Officer if the basic equipment is modified.~~~~

(1) RECLAIM NO_x Source

The owner or operator of each RECLAIM NO_x source subject to Rule 1135 shall comply with SCAQMD Rule 2012 – Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Nitrogen (NO_x) Emissions to demonstrate compliance with the NO_x emissions limits of this rule.

(2) Former RECLAIM NO_x Source

The owner or operator of each former RECLAIM NO_x source subject to Rule 1135 shall comply with SCAQMD Rule 2012 – Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Nitrogen (NO_x) Emissions to demonstrate compliance with the NO_x emissions limits of this rule, excluding the following:

- (A) Paragraphs (c)(3) through (c)(8), reporting and Super Compliant facilities;
- (B) Subparagraphs (d)(2)(B) through (d)(2)(E), reporting and emission factors;
- (C) Subdivisions (e), NO_x Process Units;
- (D) Paragraphs (g)(5) through (g)(8), reporting;
- (E) Paragraphs (h)(1), (h)(2), and (h)(4) through (h)(6), reporting and mass emissions;
- (F) Subdivisions (i), (k) and (l), Recordkeeping, Exemptions, and Appeals; and
- (G) Reported Data and Transmitting/Reporting Frequency requirements from Appendix A – “Protocol for Monitoring, Reporting and Recordkeeping for Oxides of Nitrogen (NO_x) Emissions.”

(3) Non-RECLAIM NO_x Source

The owner or operator of a non-RECLAIM NO_x source subject to Rule 1135 shall comply with the following provisions to demonstrate compliance with the NO_x emissions limits of this rule:

- (A) 40 CFR Part 75 and calculating NO_x in ppmv pursuant to SCAQMD Rule 218 – Continuous Emission Monitoring; or
- (B) SCAQMD Rule 218 – Continuous Emission Monitoring.

(4) City of Glendale

The City of Glendale or any of its successors shall demonstrate compliance with paragraph (d)(6) and calculate NO_x emissions rate in pounds per net Megawatt-Hour or NO_x emissions cap in pounds of NO_x per day and tons of NO_x per calendar year as established in their approved Continuous Emission Monitoring System (CEMS) Plan.

(5) Diesel Internal Combustion Engines

The owner or operator of each diesel internal combustion engine electric generating unit shall comply with the following provisions:

- (A) Demonstrate compliance with the carbon monoxide and volatile organic compound emissions limits of this rule pursuant to Rule 1110.2 – Emissions from Gaseous- and Liquid-Fueled Engines subdivisions (f) – Monitoring, Testing, Recordkeeping and Reporting and (g) – Test Methods; and
 - (B) Conduct yearly source test for particulate matter emissions according to SCAQMD Method 5.1 – Determination of Particulate Matter Emissions from Stationary Sources Using a Wet Impingement Train or SCAQMD Method 5.2 – Determination of Particulate Matter Emissions from Stationary Sources using Heated Probe and Filter to demonstrate compliance with the particulate matter emission limit. The yearly emission limit shall be defined as a period of twelve consecutive months determined on a rolling basis with a new twelve month period beginning on the first day of each calendar month.
- (6) Ammonia Emissions Limits
- (A) The owner or operator of each electric generating unit with catalytic control devices shall conduct quarterly source tests to demonstrate compliance with the ammonia emission limit according to SCAQMD Method 207.1 – Determination of Ammonia Emissions from Stationary Sources during the first twelve months of operation of the catalytic control device and annually thereafter when four consecutive quarterly source tests demonstrate compliance with the ammonia emission limit. If an annual test is failed, four consecutive quarterly source tests must demonstrate compliance with the ammonia emissions limits prior to resuming annual source tests.
 - (B) In lieu of complying with paragraph (e)(6)(A), the owner or operator of each electric generating unit may utilize ammonia CEMS certified under an approved SCAQMD protocol to demonstrate compliance with the ammonia emission limit.
- (7) The owner or operator of each former RECLAIM NO_x source and non-RECLAIM NO_x source shall maintain information pursuant to this subdivision at the facility for a period of five years, except that all data gathered or computed for intervals of less than 15 minutes shall be maintained for a minimum of 48 hours, and make available to SCAQMD upon request.
- (8) Operating Log
The owner or operator of each former RECLAIM NO_x source and non-RECLAIM NO_x source shall maintain records, in a manner approved by the SCAQMD, in an operating log on a daily basis, for the following parameter(s) or item(s):

- (A) Time and duration of start-ups and shutdowns;
- (B) Total hours of operation;
- (C) Quantity of fuel;
- (D) Cumulative hours of operation to date for the calendar year;
- (E) Megawatt hours of electricity produced; and
- (F) Net megawatt hours electricity produced.

(f) Use of Liquid Petroleum Fuel

(1) Force Majeure Natural Gas Curtailment

~~The District wide daily limits on emissions rate and emissions cap specified in paragraphs (e)(1), (e)(2), and (e)(3) NO_x emissions limits specified in subdivision (d) shall not apply to an electric power-generating system unit on days of during~~ force majeure natural gas curtailment when the use of liquid petroleum fuel is required, provided that:

- (A) Within 15 days of each occurrence, the owner or operator of each ~~boiler~~ electricity generating facility submits an affidavit signed by a corporate officer affirming that liquid petroleum fuel was burned due to force majeure natural gas curtailment; and
- ~~(B) Each boiler, when it burns natural gas exclusively, meets the applicable unit-specific NO_x emission limit specified in subparagraph (d)(1)(C); and~~
- ~~(CB) Each boiler electric generating unit, when it burns liquid petroleum fuel exclusively, emits oxides of nitrogen NO_x at no more than 2 times the applicable unit-specific liquid petroleum fuel NO_x emission limit specified in subparagraph (d)(1)(C) the SCAQMD permit; and~~
- ~~(D) Each boiler, when it burns a combination of liquid petroleum fuel and natural gas, emits oxides of nitrogen at no more than the prorated limit for that unit, obtained from the requirements specified in subparagraphs (f)(1)(B) and (f)(1)(C), and weighted by the flow rate and gross heating value of natural gas and liquid petroleum fuel, respectively. The calculation procedure in the "CEMS Requirement Document for Utility Boilers", dated July 19, 1991 shall be followed.~~

(2) Fuel Readiness Testing

~~A boiler may burn liquid petroleum fuel for up to 24 hours in any calendar year for fuel readiness testing provided that the emission limitation specified in subparagraph (f)(1)(C) is met. The unit specific NO_x emission limit specified in subparagraph (d)(1)(C) shall not apply during this period. The NO_x emissions limits~~

specified in subdivision (d) shall not apply to an electric generating unit during fuel readiness testing, and the electric generating unit may burn liquid petroleum fuel, provided that:

- (A) Fuel readiness testing does not exceed sixty minutes ~~on one day per week~~;
- (B) Each electric generating unit, when it burns liquid petroleum fuel, emits NO_x at no more than the applicable unit-specific liquid petroleum NO_x emission limit specified in the SCAQMD permit;
- (C) Fuel readiness testing shall only occur after the equipment has reached the emissions limits specified in paragraph (d)(1) while firing on natural gas and shall commence no later than sixty minutes after achieving emissions limits specified in paragraph (d)(1) while firing on natural gas; and
- (D) Each readiness test shall commence with the equipment switching from natural gas to liquid petroleum fuel and conclude with the equipment switching from liquid petroleum fuel to natural gas.

(3) Source Testing

The NO_x emissions limits specified in subdivision (d) shall not apply to an electric generating unit when it burns liquid petroleum fuel during emissions source testing, and the electric generating unit may burn liquid petroleum fuel for emissions source testing specified by SCAQMD rules, including initial certifications of Continuous Emissions Monitoring Systems (CEMS) and semi-annual Relative Accuracy Test Audits (RATAs). RATA tests shall only be conducted concurrently with weekly readiness testing.

~~(g) Municipal Bubble Options~~

- ~~(1) Any electric power generating system may form a municipal bubble by linking with one or more electric power generating system(s), for the purposes of this rule, provided all of the following conditions are met:~~
 - ~~(A) The municipal bubble does not include Southern California Edison; and~~
 - ~~(B) The municipal bubble is formed for at least one year, or more; and~~
 - ~~(C) An application for approval of the municipal bubble is submitted jointly by all affected municipal utilities to the Executive Officer, at least six months in advance; and~~
 - ~~(D) Written approval of the application for the municipal bubble is obtained from the Executive Officer prior to utilization of any provision contained in subsection (g), Municipal Bubble Options.~~

- ~~(2) The application for a municipal bubble required in subparagraph (g)(1)(C) shall include, without being limited to:~~
- ~~(A) Proposed amendments to the compliance plans of all affected municipal utilities, as required to meet or exceed the municipal bubble emissions limitations specified in paragraph (g)(3); and~~
- ~~(B) Applications for change of permit conditions to adjust NO_x emissions limits for each boiler, replacement unit and approved alternative or advanced combustion resource in the District, as required by the proposed amendments to the compliance plans; and~~
- ~~(C) Any other information required by the Executive Officer to evaluate compliance with the provisions of this rule.~~
- ~~The Executive Officer shall not approve the application for a municipal bubble unless it is demonstrated to the satisfaction of the Executive Officer that such action(s) will result in compliance with the municipal bubble emissions limitations specified in paragraph (g)(3) in an enforceable manner.~~
- ~~(3) Municipal bubble emissions limitations shall be derived from the District-wide daily limits on emissions rate and emissions cap specified in paragraphs (e)(2) and (e)(3), for each municipal utility, as follows:~~
- ~~(A) The District-wide daily limits on emissions rate in pounds of NO_x per net megawatt-hours shall be the sum of the emissions rates of each participating utility, weighted by the maximum permitted capacity of each utility as a fraction of the total permitted capacity in the municipal bubble, for the applicable time period; and~~
- ~~(B) The District-wide daily limits on emissions cap in pounds of NO_x per day shall be the sum of the emissions cap of all participating utilities, for the applicable time period, and beginning December 31, 1999, if Los Angeles Department of Water and Power is included in the municipal bubble; and~~
- ~~(4) An electric power generating system subject to a municipal bubble approved by the Executive Officer shall be exempt from the utility-specific requirements of paragraphs (e)(2) and (e)(3); and be subject to the municipal bubble emissions limitations specified in paragraph (g)(3) for the applicable time period.~~
- ~~(5) A violation of any municipal bubble emissions limitations required in paragraph (g)(4) shall constitute a violation for each permitted boiler and replacement unit, operating during the exceedance period, in the municipal bubble. This provision shall not apply to approved alternative or advanced combustion resources.~~

(hg) Exemptions

(1) Combined Cycle Gas Turbines

The owner or operator of a combined cycle gas turbine installed prior to [Date of Adoption] shall not be subject to paragraph (d)(1) for that combined cycle gas turbine, provided that:

- (A) The SCAQMD permit as of [Date of Adoption] includes a condition limiting the NO_x concentration to 2.5 ppmv NO_x or less averaged over 60 minutes at 15% oxygen on a dry basis; and
- (B) NO_x and ammonia limits, averaging times, and start-up, shutdown, and tuning requirements specified on the SCAQMD permit as of [Date of Adoption] are retained.

(2) Once-Through-Cooling Electric Generating Units

The owner or operator of an electric generating unit subject to the Clean Water Act Section 316(b) shall not be subject to paragraph (d)(1) for that electric generating unit, provided that:

- (A) The NO_x and ammonia limits, averaging times, and start-up, shutdown, and tuning requirements specified on the SCAQMD permit as of [Date of Adoption] are retained;
- (B) On or before January 1, 2023, the owner or operator notifies SCAQMD of the compliance dates set forth in Table 1 of Section 2(B) of the State Water Resources Control Board's Statewide Water Quality Control Policy on the Use of Coastal Estuarine Waters for Power Plant Cooling (Once-Through-Cooling Policy) implementing Section 316(b) of the Clean Water Act;
- (C) Within 3 months of approval of an extension of the compliance date set forth in Table 1 of Section 2(B) of the Once-Through-Cooling Policy, the owner or operator notifies SCAQMD of the extension. This extension is not applicable to facilities that have utilized the Modeling and Offset Exemptions in Rule 1304 (a)(2) and the associated replacement electric generating unit is in operation; and
- (D) The owner or operator complies with the compliance date set forth in Table 1 of Section 2(B) of the Once-Through-Cooling Policy.

(3) Diesel Internal Combustion Engines

The owner or operator of a diesel internal combustion engine installed prior to [Date of Adoption] shall not be subject to paragraph (d)(2) for that diesel internal combustion engine provided that:

- (A) The SCAQMD permit as of [Date of Adoption] includes a condition limiting the NO_x concentration to 51 ppmv NO_x or less averaged over 60 minutes at 15% oxygen on a dry basis; and
- (B) The NO_x, ammonia, carbon monoxide, volatile organic compounds, and particulate matter limits, averaging times, and start-up, ~~and shutdown, and tuning~~ requirements specified on the SCAQMD permit as of [Date of Adoption] are retained.

(4) Low-Use

(A) Gas Turbines

The owner or operator of a gas turbine installed prior to [Date of Adoption] shall not be subject to emissions limits specified under paragraph (d)(1) for that gas turbine, provided that the gas turbine:

- (i) Maintains an annual capacity factor of less than twenty-five percent each calendar year;
- (ii) Maintains an annual capacity factor of less than ten percent averaged over three consecutive calendar years on a rolling basis; and
- (iii) Retains the NO_x and ammonia limits, averaging times, and start-up, shutdown, and tuning requirements specified on the SCAQMD permit as of [Date of Adoption].

(B) Boilers

The owner or operator of a boiler installed prior to [Date of Adoption] shall not be subject to paragraph (d)(1) for that boiler, provided that the boiler:

- (i) Maintains an annual capacity factor of less than two and one half percent each calendar year;
- (ii) Maintains an annual capacity factor of less than one percent averaged over three consecutive calendar years on a rolling basis; and
- (iii) Retains the NO_x and ammonia limits, averaging times, and start-up, ~~and shutdown, and tuning~~ requirements specified on the SCAQMD permit as of [Date of Adoption].

- (C) Initial Requirement for Low-Use Exemption
The owner or operator of an electricity generating facility that elects the low-use exemption pursuant to subparagraph (g)(4)(A) or (g)(4)(B) for a gas turbine or boiler shall submit permit applications by July 1, 2022 for each electric generating unit requesting the change of SCAQMD permit conditions to incorporate the low-use exemption.
- (D) Eligibility for Low-Use Exemption
Eligibility of the low-use exemption shall be determined annually for each electric generating unit and reported to the Executive Officer no later than March 1 following each reporting year.
- (E) Exceedance of Low-Use Exemption
- (i) If an electric generating unit with a low-use exemption pursuant to subparagraph (g)(4)(A) or (g)(4)(B) exceeds the annual or three year average annual capacity factor limit, such exceed shall be a violation of this rule and the owner or operator of that electric generating unit is subject to issuance of a notice of violation each year there is an exceedance for each annual and/or three-year exceedance.
- (ii) If an electric generating unit with a low-use exemption pursuant to subparagraph (g)(4)(A) or (g)(4)(B) exceeds the annual or three year average annual capacity factor limit, the owner or operator of that electric generating unit shall:
- (A) Within six months of the date of reported exceedance of subparagraph (g)(4)(A) or (g)(4)(B), submit complete SCAQMD permit applications to repower, retrofit, or retire that electric generating unit;
- (B) Submit a CEMS Plan within six months from the date of complete SCAQMD permit application submittal pursuant to subclause (g)(4)(E)(ii)(A); and
- (C) Not operate that electric generating unit in a manner that exceeds the emissions limits listed in Table I after two years from the date of the reported exceedance of subparagraph (g)(4)(A) or (g)(4)(B).
- (5) Internal combustion engines located on Santa Catalina Island are exempt from subdivision (f).
- ~~(4) Notwithstanding the provisions of paragraphs (c)(1) or (c)(2), Southern California Edison or Los Angeles Department of Water and Power may operate its electric~~

~~power generating system if both the following District wide daily limits on emissions rate and emissions cap are met:~~

	District Wide Daily Limits Lb NOx/Net Megawatt (MW) Hr	Lb NOx Per Day
Southern California Edison	0.25	5,360
Los Angeles Department of Water and Power	0.25	2,960

~~(2) Notwithstanding the provisions of paragraphs (c)(1), (c)(2), or (c)(3), an electric power generating system may be operated for no more than 10 calendar days in any calendar year if all the following conditions are met:~~

~~(A) Both the following District wide daily limits on emissions rate and emissions cap are met:~~

	District Wide Daily Limits Lb NOx/Net Megawatt (MW) Hr	Lb NOx Per Day
Southern California Edison	0.25	20,100
Los Angeles Department of Water and Power	0.25	11,100
Burbank	0.25	870
Glendale	0.25	580
Pasadena	0.25	1,350;

and

~~(B) The electric generating system owner/operator has taken all possible steps to comply with paragraphs (c)(1), (c)(2) and (c)(3), including the interruption of non-firm load.~~

~~(C) The exemption is not required as a result of operator error, neglect, or improper operating or maintenance procedures;~~

~~(D) Steps are immediately taken to correct the condition;~~

~~(E) The electric power generating system owner/operator reports to the District the need for the exemption within one hour of the occurrence or within one hour of the time said operator knew or reasonably should have known of the occurrence;~~

~~(F) No later than one week after each event the owner/operator submits a written report to the District including but not limited to:~~

~~(i) A statement that the situation has been corrected, together with the date of correction and proof of compliance;~~

- ~~(ii) A specific statement of the reason(s) or cause(s) for the exemption sufficient to enable the Executive Officer to determine whether the occurrence was in accordance with the criteria set forth in subparagraphs (h)(2)(B) and (h)(2)(C) of this rule;~~
- ~~(iii) A description of the corrective measures undertaken and/or to be undertaken to avoid such an occurrence in the future.~~

~~CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS)
REQUIREMENTS DOCUMENT FOR UTILITY BOILERS~~

~~This document specifies requirements under Rule 1135 for continuous emission monitoring systems. Other District rules and permit conditions may require measurements, calculations, and reporting in addition to those indicated in this document.~~

~~1. REQUIREMENTS~~

- ~~1.1 The owner or operator of each boiler, unit, and approved alternative or advanced combustion resource shall install, calibrate, maintain, and operate an approved CEMS, and record the output of the system, for measuring the following:~~
- ~~a. Nitrogen oxides emissions (in units of ppmv) discharged to the atmosphere from each boiler, unit, and approved alternative or advanced combustion resource.~~
 - ~~b. Oxygen concentration, at each location where nitrogen oxides are monitored.~~
 - ~~c. Stack gas volumetric flow rate. An in stack flow meter may be used to determine mass emission rates to the atmosphere from each boiler, unit, and approved alternative or advanced combustion resource, except:
 - ~~(i) when more than one boiler or resource vents to the atmosphere through a single stack, or~~
 - ~~(ii) during periods of low flow rates when the flow rate is no longer within the applicable range of the in stack flow meter.~~~~
 - ~~d. Heat input rate when needed by the CEMS to determine the stack gas volumetric flow rate, or to determine applicable prorated emission limits during periods when the boiler, unit, or approved alternative or advanced combustion resource is firing on both gaseous and liquid fuels. The owner or operator shall include in the CEMS calculations the F_d factors listed in 40 CFR Part 60, Appendix A, Method 19, Table 19.1. The owner or operator shall submit data to develop F_d factors when alternative fuels are fired and obtain the approval of the Executive Officer for use of the F_d factors before firing any alternative fuels.~~
 - ~~e. Net MWH of electricity produced at each affected boiler, unit, or approved alternative or advanced combustion resource.~~

~~The owner or operator shall also provide any other data necessary for calculating air contaminant emission rates as determined by the Executive Officer.~~

~~2. MONITORING SYSTEMS~~

- 2.1 ~~All CEMS at each affected boiler, unit, or approved alternative or advanced combustion resource shall, at a minimum, generate and record the following data points once per minute:~~
- ~~a. Nitrogen oxide concentration in the stack in units of ppmv.~~
 - ~~b. Oxygen concentration in the stack in units of percent.~~
 - ~~c. Volumetric flow rate of stack gases in units of dry standard cubic feet per minute (DSCFM). For Rule 1135 standard gas conditions are defined as temperature at 68°F and one atmosphere of pressure.~~
 - ~~d. Fuel flow rates in units of standard cubic feet per minute (SCFM) for gaseous fuels or pounds per minute (lb/min) for liquid fuels if EPA Method 19 is used to calculate the stack gas volumetric flow rate.~~
 - ~~e. Nitrogen oxide emission rate in units of lb/minute. The nitrogen oxide emission rate is calculated according to the following:~~

$$e_i = a_i \times c_i \times 1.195 \times 10^{-7}$$

~~where e_i = The emission rate of nitrogen oxides in pounds per minute measured every minute,~~

~~a_i = The stack gas concentration of nitrogen oxides measured each minute (ppmv),~~

~~c_i = The stack gas volumetric flow rate measured each minute (DSCFM).~~

~~When the CEMS uses the heat input rate to determine the nitrogen oxides emission rates, the CEMS will use the following equation to calculate the emission rate of nitrogen oxides:~~

$$e_i = a_i \times [20.9 / (20.9 - b_i)] \times 1.195 \times 10^{-7} \times \sum_{i=1}^r (F_{d_i} \times d_i \times V_i)$$

~~where e_i = The emission rate of nitrogen oxides in pounds per minute measured every minute,~~

~~a_i = The stack gas concentration of nitrogen oxides measured each minute (ppmv) on a dry basis,~~

~~b_i = The stack gas concentrations of oxygen measured every minute~~

~~r = The number of different types of fuel,~~

~~F_{di} = The dry F factor for each type of fuel, the ratio of the dry gas volume of the products of combustion to the heat content of the fuel (DSCF/10⁶-BTU),~~

~~d_i = The fuel flow rate for each type of fuel measured every minute,~~

~~V_i = The higher heating value of the fuel for each type of fuel.~~

~~The product ($d_i \times V_i$) must have units of millions of BTU per minute (10⁶ BTU/min).~~

- f. ~~During any one minute period when the net MW output of the replacement unit exceeds the permitted net MW capacity of the replaced boiler, the data points e_i and f_i (defined in Paragraph 2.2) must be recalculated by multiplying by the following factor:~~

$$\text{(MW}_p\text{/MW}_f\text{)}$$

~~where MW_p = Net MW output capacity of the replaced boiler,~~

~~and MW_f = Net MW output during the one minute period~~

$$\text{= } f_i \times 60$$

~~Record the uncorrected and corrected values of e_i and f_i . Calculate and record the data points E, F, G, and H, the hourly lb NO_x/net MWH of electricity produced, and the daily lb NO_x/net MWH of electricity produced using first the uncorrected and corrected e_i and f_i values and using then the corrected e_i and f_i values.~~

- g. ~~Net MWH of electricity produced. The net MWH are defined as:~~

$$\text{net MWH} = VI \cos \phi / 10^6$$

~~where V = Voltage to the power grid (Volt),~~

~~I = Current to the power grid (Ampere),~~

~~$\cos \phi$ = Power factor,~~

~~and ϕ = Phase angle.~~

~~t = Time (hr) = 1/60 hr,~~

~~The above equation is only a definition of MWH and a meter which measures MWH directly may be used. The voltage, current, power factor, and time do not need to be measured separately.~~

$$\text{net MWH} = \text{Gross MWH} - \text{Auxiliary MWH}$$

- h. ~~CEMS status. The following codes shall be used to report the CEMS status:~~

- 0—Collecting valid data,
- 1—In calibration,
- 2—Off line,
- 3—Tamper/security,
- 4—Alternative data acquisition (see Paragraphs 2.7 and 2.8),
- 5—Hot Standby,
- 6—Out of control,
- 7—Startup/shutdown.

2.2 The hourly average stack gas concentrations of nitrogen oxides and oxygen, the stack gas volumetric flow rate, the fuel flow rate, emissions of nitrogen oxides, the net MWH of electricity produced, and the emissions rate of nitrogen oxides shall be calculated and recorded for each affected boiler, unit, or approved alternative or advanced combustion resource:

$$A = \frac{\sum_{i=1}^n a_i}{n} \quad (\text{for NO}_x \text{ concentration})$$

$$B = \frac{\sum_{i=1}^n b_i}{n} \quad (\text{for O}_2 \text{ concentration})$$

$$C = \frac{\sum_{i=1}^n c_i}{n} \times 60 \quad (\text{for stack gas volumetric flow rate})$$

$$D = \frac{\sum_{i=1}^n d_i}{n} \times 60 \quad (\text{for fuel flow rates})$$

Calculate D for each type of fuel firing separately.

$$E = \frac{\sum_{i=1}^n e_i}{n} \times 60 \quad (\text{for NO}_x \text{ emissions})$$

$$\sum_{i=1}^n f_i$$

$$F = \frac{\sum_{i=1}^n \dots}{n} \times 60 \quad (\text{for net MWH})$$

$$P = E/F \quad (\text{for NO}_x \text{ emissions rate})$$

All concentrations and stack gas flow rates shall be made on a consistent wet or dry basis.

- where
- A = The hourly average stack gas concentration of nitrogen oxides,
 - a_i = The stack gas concentrations of nitrogen oxides measured every minute,
 - B = The hourly average oxygen stack concentration,
 - b_i = The stack gas concentrations of oxygen measured every minute,
 - C_i = The hourly average stack gas flow rate,
 - c_i = The stack gas volumetric flow rates measured every minute,
 - D_i = The hourly average fuel flow rates, for each type of fuel,
 - d_i = The fuel flow rate for each type of fuel measured every minute,
 - E_i = The hourly average emission rates of nitrogen oxides,
 - e_i = The emissions of nitrogen oxides in pounds per minute measured every minute,
 - F_i = The hourly net MWH of electricity produced,
 - f_i = The net MWH of electricity produced measured every minute,
 - P = The emissions rate of nitrogen oxides in pounds per net MWH of electricity produced
 - n = Number of valid data points during the hour.

Indicate any hourly data where $n < 45$.

- 2.3 The average daily emissions of nitrogen oxides shall be calculated and recorded for each affected boiler, unit, or approved alternative or advanced combustion resource:

$$G = \frac{\sum_{i=1}^N e_i}{N} \times M$$

where G = The daily emissions of nitrogen oxides in units of lb/day,

~~M = Number of operating minutes during the day,
and N = Number of valid data points during the day.~~

~~Indicate any daily data where N < 90 percent of M.~~

- 2.4 ~~The average daily net MWH of electricity produced shall be calculated and recorded for each affected boiler, unit, or approved alternative or advanced combustion resource:~~

$$\text{H} = \frac{\sum_{i=1}^N f_i}{N} \times M$$

~~where H = The daily net MWH of electricity produced during the day,~~

~~Indicate any daily data where N < 90 percent of M.~~

- 2.5 ~~The hourly unit-specific emission limit shall be calculated and recorded when more than one fuel is burned during the hour:~~

$$J = \frac{\sum_{i=1}^t (L_i \times D_i \times V_i)}{\sum_{i=1}^t (D_i \times V_i)}$$

~~where J = Hourly unit-specific emission limit when more than one type of fuel is fired (lb NO_x/net MWH of electricity produced)~~

~~L_i = Unit-specific emission limit for each type of fuel fired (lb NO_x/net MWH of electricity produced)~~

~~V_i = Higher heating value of each type of fuel~~

~~The product (D_i × V_i) must have units of millions of BTU per hour (10⁶ BTU/hour)~~

- 2.6 ~~The CEMS shall be operated and data recorded during all periods of operation of the affected boilers, units, and approved alternative or advanced combustion resources including periods of start-up, shutdown, malfunction or emergency conditions, except for CEMS breakdowns and repairs. Calibration data shall be recorded during zero and span calibration checks, and zero and span adjustments. For periods of hot standby the utilities may enter a default value for NO_x emissions. Before using any default values the utilities must obtain the approval of the Executive Officer and must include in the CEMS applications or CEMS plans the estimates of NO_x emissions, the NO_x concentrations, the oxygen concentrations, and the fuel input rate or the stack gas volumetric flow rate during~~

- hot standby conditions. The Executive Officer will approve only those emission values which he finds to correspond to hot standby conditions.
- 2.7 ~~When less than 90% of valid nitrogen oxides emission data are collected by the CEMS, emission rate data shall be obtained using District Methods 7.1 or 100.1 (for NO_x concentration in the stack gas) in conjunction with District Methods 1.1, 2.1, 3.1, and 4.1 or by using District Methods 7.1 or 100.1 in conjunction with District Method 3.1 and EPA Method 19. If the NO_x concentrations are less than 20 ppm, use Special District Method 7.1 (IC Alternative) or Modified District Method 100.1 for Low NO_x Concentrations. Descriptions of the last two methods can be found in Paragraphs 3.3.1 and 3.3.2 of the Relative Accuracy Test Procedure. For District Method 7.1 or Special District Method 7.1 (IC Alternative), a minimum of 12 samples, equally spaced over a one-hour period, shall be taken. Each sample shall represent the five-minute period in which it was taken.~~
- 2.8 ~~Load curves of NO_x emission rates or other alternative means of NO_x emission rate data generation may be used to obtain nitrogen oxides emission data, provided the utility has obtained the approval of the Executive Officer prior to using alternate means of NO_x emission rate data generation. The load curves and the alternate means of NO_x emission rate data generation mentioned in this paragraph shall not be used more than 72 hours per calendar month and may only be used if no CEMS data or reference method data gathered under paragraph 2.7 is available. Load curves may be used on units which have air pollution control devices for the control of nitrogen oxides emissions provided the utilities submit a complete list of operating conditions that characterize the permitted operation. The conditions must be specified in the compliance plans and permits which the rule requires. The process parameters specified in the conditions must be monitored by the CEMS.~~
- 2.9 ~~At each affected boiler, unit, or approved alternative or advanced combustion resource the number of valid data points (N) during the day shall be greater than 90 percent of the number operating minutes during the day in order to obtain a valid daily emission rate for nitrogen oxides and the daily net MWH of electricity produced. Valid data points are data points from the CEMS which meet the requirements of Paragraphs 2.18, 2.19, 2.19.1, 2.19.2, 2.19.3, 2.19.4, 2.19.5, 2.19.6, 2.19.7, 2.19.8, and 2.20 or which are obtained by the methods indicated in Paragraphs 2.7 and 2.8. The utility is deemed to be out of compliance with rule 1135 on a systemwide basis if one or more boilers, units, or approved alternative or advanced combustion resources do not comply with the 90 percent valid data requirement.~~
- 2.10 ~~Full scale span ranges for the NO_x analyzers at each unit shall be set on a unit by unit basis. The full scale span range of the NO_x analyzers shall be set so that all the data points gathered by the CEMS lie within 20-95 percent of the full-scale span range.~~
- 2.11 ~~The CEMS design shall allow determination of calibration drift at zero and high-level (90 to 100 percent of full scale) values. Alternative low-level and high-level span values may be allowed with the prior written approval of the Executive Officer.~~
- 2.12 ~~The volumetric flow measurement system shall meet a relative accuracy requirement of being less than or equal to 10 percent of the mean value of the reference method test data in units of DSCFM. Relative accuracy is calculated by the equations in Section 8 of 40 CFR Part 60, Appendix B, Performance Specification 2.~~

- ~~2.13 The emission rate measurement shall meet a relative accuracy requirement of being less than or equal to 20 percent of the mean value of the reference method test data in units of lb/hr. Relative accuracy is calculated by the equations in Section 8 of 40 CFR Part 60, Appendix B, Performance Specification 2.~~
- ~~2.14 The portion of the CEMS which samples, conditions, analyzes, and records the nitrogen oxides and oxygen concentrations in the stack gas shall be certified according to the specifications in District Rule 218.~~
- ~~2.15 Each boiler, unit, and approved alternative or advanced combustion resource shall have test facilities which meet the "Guidelines for Construction of Sampling and Testing Facilities" in the District Source Test Manual. If an alternate location (not conforming to the criteria of eight duct diameters downstream and two diameters upstream from a flow disturbance) is used, the absence of flow disturbance and stratification shall be demonstrated using District Source Test Methods.~~
- ~~2.16 The CEMS sample line from the CEMS probe to the sample conditioning system shall be heated to maintain the sample temperature above the dew point of the sample.~~
- ~~2.17 The District shall reevaluate the monitoring systems at any affected boiler, unit, or approved alternative or advanced combustion resource, where changes to the basic process equipment or air pollution control equipment occur, to determine the proper full span range of the monitors. Any monitor system requiring change to its full span range in order to meet the criteria in Paragraph 2.10 shall be recertified according to all the specifications in Rule 218 including the relative accuracy tests, the calibration drift tests, and the calibration error tests. A new CEMS plan shall be submitted for each CEMS which is reevaluated.~~
- ~~2.18 Procedure 1 of 40 CFR Part 60, Appendix F is incorporated by reference for the nitrogen oxides and oxygen monitors. The quality assurance plans required by 40 CFR Part 60, Appendix F shall be submitted to the District for the approval of the Executive Officer before the CEMS is certified. The reference method tests are those methods in Section 3 (RELATIVE ACCURACY TEST METHODS) of this guideline. Any CEMS which is deemed out of control by 40 CFR Part 60, Appendix F shall be corrected, retested by the appropriate audit procedure, and restored to in control within 24 hours after being deemed out of control. If the CEMS is not in control at the end of the 24-hour period, the CEMS data shall be gathered using the methods in paragraphs 2.7 and 2.8 of these requirements. All data which is gathered in order to comply with 40 CFR Part 60, Appendix F shall be maintained for two years and be made available to the Executive Officer upon request. Any such data which is invalidated shall be identified and reasons provided for any data invalidation.~~
- ~~2.19 Each volumetric flow measurement system shall be audited at least once each calendar quarter. Successive audits shall occur no closer than two months. The audits shall be conducted as follows:~~
- ~~2.19.1 The Relative Accuracy Test Audit (RATA) shall be conducted at least once every four quarters. Conduct the RATA as described in Section 3 (RELATIVE ACCURACY TEST METHODS).~~

2.19.2 ~~The Relative Accuracy Audit may be conducted three of four calendar quarters, but no more than three quarters in succession. To conduct an RAA, follow the procedure described in Section 3 (RELATIVE ACCURACY TEST METHODS) for the relative accuracy test, except that only three sets of measurement data are required.~~

2.19.3 ~~Follow the equations described in Section 8 of 40 CFR Part 60, Appendix B, Performance Specification 2 to calculate the relative accuracy for the RATA. The RATA shall be calculated in units of dry standard cubic feet per minute (DSCFM).~~

2.19.4 ~~Follow this equation to calculate the accuracy for the RAA:~~

$$A = \frac{F_m - F_a}{F_a} \times 100$$

~~where A = Accuracy of the volumetric flow measurement system.~~

~~F_m = Average response of the volumetric flow measurement system in units of DSCFM.~~

~~F_a = Average reference method audit value in units of DSCFM.~~

2.19.5 ~~If the relative accuracy using the RATA exceeds 20 percent of the mean reference method value, the CEMS shall be considered out of control. If the relative accuracy exceeds ±15 percent using the RAA, the CEMS shall be considered out of control. If the CEMS is out of control, take necessary corrective action to eliminate the problem. Following corrective action, audit the CEMS accuracy with an RAA or an RATA to determine if the CEMS is operating properly. An RATA shall be used following an out of control period resulting from an RATA. If the audit shows the CEMS to be out of control, the CEMS operator shall report the results of the audit showing the CEMS to be out of control, any subsequent audit showing the CEMS to remain out of control following corrective action, and the audit showing the CEMS to be operating within specifications following corrective action.~~

2.19.6 ~~The beginning of the out of control period shall be the time corresponding to the completion of the sampling of the RAA or RATA. The end of the out of control period shall be the time corresponding to the completion of the sampling of the subsequent successful RAA or RATA.~~

2.19.7 ~~During the period the CEMS is out of control, the CEMS data shall not be used in calculating emission compliance nor be counted towards meeting minimum data availability.~~

2.19.8 ~~Whenever out of control periods occur for two consecutive quarters, the owner or operator shall revise the quality control procedures contained in the quality~~

~~assurance plans, or modify and replace the CEMS. If the CEMS is modified or replaced, the new CEMS shall be recertified by the Executive Officer.~~

- 2.20 ~~The nitrogen oxides emission rate (lb NO_x/hr) portion of the CEMS at each boiler, unit or approved alternative or advanced combustion resource shall have a relative accuracy of no greater than 20 percent of the mean value of the reference method test data in terms of lb NO_x/hr. This relative accuracy test shall be conducted during the certification test of each CEMS, and shall be conducted at least once every four quarters as an RATA for each CEMS. An RAA may be conducted three of four calendar quarters as described in Paragraph 2.19.1. The definition of an out-of-control CEMS is the same as Paragraph 2.19.5, except that the RAA shall exceed ±20 percent before the CEMS is considered out of control. The definition of out-of-control period is the same as Paragraph 2.19.6. The CEMS status during an out-of-control period is the same as Paragraph 2.19.7. The criteria for acceptable procedures is the same as Paragraph 2.19.8.~~

3. RELATIVE ACCURACY TEST METHODS

- 3.1 ~~Conduct the reference method (RM) tests in such a way that they will yield results representative of the emissions from the source and can be correlated to the CEMS data.~~
- 3.2 ~~Conduct a minimum of nine sets of all necessary reference method (RM) tests. Conduct each set within a period of 30 to 60 minutes.~~
- 3.3 ~~Unless the expected concentrations of NO_x are less than 20 ppm, District Methods 7.1 or 100.1 are the reference methods for NO_x concentrations.~~
- 3.4 ~~Use the Special District Method 7.1 (IC Alternative) or the Modified District Method 100.1 to determine NO_x stack gas concentrations of less than 20 ppm.~~
- 3.4.1 ~~Modified District Method 100.1 for Low NO_x Concentrations~~

~~District Method 100.1 may be used to measure low NO_x concentrations if the following additional quality control measures are taken on the reference method monitor:~~

- a. ~~Perform NO₂ system bias checks in addition to the regular system bias check in District Method 100.1. Use approximately 10 ppm NO₂ span gas for this system bias check. Perform these checks at the beginning, the middle, and the end of each test day. The checks made in the middle and the end of the test day must be made before emptying the condensate from the sampling system (if applicable).~~
- b. ~~Determine the NO_x to NO concentration readings during at least one test run.~~
- c. ~~Determine the NO₂ to NO conversion efficiency by running a known NO₂ calibration gas (about 10 ppm) through the NO₂ convertor and comparing the calibrated monitor response to the NO₂ concentration.~~

- d. ~~The calibration error limits and the calibration gas specifications are the same as those in District Method 100.1. However, the tester may use calibration gas certified to an analytical accuracy of ± 2 percent if calibration gases with analytical accuracies of ± 1 percent are not available.~~
 - e. ~~Conduct an NH₃ interference test if NH₃ is present. Use NH₃ calibration gas at 80-100 percent of the allowed NH₃ concentration.~~
 - f. ~~Conduct Special District Method 7.1 (IC Alternative) tests simultaneously with the Modified District 100.1 tests during at least two runs. Collect at least six NO_x bulbs during each run. Take at least two field blanks each testing day.~~
- 3.5 ~~District Method 2.1 shall be used to determine the stack gas volumetric flow rate.~~
- 3.6 ~~For District Method 2.1, District Method 1.1 shall be used to select the sampling site and the number of traverse points.~~
- 3.7 ~~District Method 3.1 shall be used for diluent gas (O₂ or CO₂) concentration and stack gas density determination.~~
- 3.8 ~~District Method 4.1 shall be used for moisture determination of the stack gas.~~
- 3.9 ~~The NO_x emissions shall be determined by using the results of paragraph 3.3 or 3.4 along with the results of paragraphs 3.5, 3.6, 3.7, and 3.8.~~
- 3.10 ~~Suitable methods may be used to measure the net MWH produced at each boiler, unit, or approved alternative or advanced combustion resource provided the following conditions are met:~~
- a. ~~The owner or operator of each affected boiler, unit, or approved alternative or advanced combustion resource shall submit details of suitable methods to measure the net MWH of electricity produced of each boiler, unit, or approved alternative or advanced combustion resource. At a minimum, these details shall include a description of the principle of measurement and calculations used to calculate the net MWH of electricity produced, and the technique and procedures used to calibrate each net MWH measurement device. Each net MWH meter shall be calibrated against standards which are traceable to National Institute of Standards and Technology (NIST) standards or to a higher authority if no NIST standards exist. The calibration accuracy tolerance of each net MWH measurement device shall be ± 0.5 percent of all measured values. The methods submitted to the District shall be subject to the approval of the Executive Officer before they are used to determine the net MWH of electricity produced.~~
 - b. ~~Each net MWH measurement device shall be calibrated a minimum of once every six months.~~

~~4. REPORTING PROCEDURES~~

4.1 Interim Reporting Procedures

- 4.1.1 From July 19, 1991 until December 31, 1992, the owner or operator will be allowed to use an interim procedure for data reporting and storage. The owner or operator shall submit as part of the required CEMS plan, a plan for interim data reporting and storage. The plan shall be subject to the approval of the Executive Officer and shall, at a minimum, meet the requirements of Paragraphs 4.1.2, 4.1.3, and 4.1.4.
- 4.1.2 All the data required in Paragraphs 4.1.3 and 4.1.4 shall be available at an identified location to the Executive Officer, upon request. This location shall be subject to the approval of the Executive Officer.
- 4.1.3 For each affected boiler, unit, or approved alternative or advanced combustion resource the following information shall be provided to the Executive Officer:
- a. Calendar dates covered in the reporting period.
 - b. Each daily emission rate (lb NO_x/day) and each hourly emission rate (lb NO_x/hour).
 - c. Identification of the boiler, unit, or approved alternative or advanced combustion resource operating days for which a sufficient number of valid data points has not been taken; reasons for not taking sufficient data; and a description of corrective action taken.
 - d. Identification of F_d factor for each type of fuel used for calculations and the type of fuel burned.
 - e. Identification of times when daily averages have been obtained by manual sampling methods.
 - f. Identification of times when daily averages have been obtained by alternate means of NO_x emission rate data generation.
 - g. Description of any modifications to the CEMS that could affect the ability of the CEMS to comply with the performance specifications in Rule 218.
 - h. Results of daily CEMS drift tests and quarterly accuracy assessments, as required under 40 CFR Part 60, Appendix F, Procedure 1.
 - i. Identification of the times when the pollutant concentration exceeded full span of the CEMS.
 - j. The daily net MWH of electricity produced.
 - k. The hourly unit-specific emission limit (lb NO_x/net MWH of electricity produced).
 - l. The hourly lb NO_x/net MWH of electricity produced.
- 4.1.4 The following information for the entire utility system shall be provided to the Executive officer on a monthly basis:
- a. Calendar dates covered in the reporting period.
 - b. The sum of the daily emission rates (lb NO_x/day) from all affected boilers, units, and approved alternative or advanced combustion resources.

- ~~e. The sum of the net MWH of electricity produced from all affected boilers, units, and approved alternative or advanced combustion resources.~~
 - ~~d. The systemwide daily NO_x emission rate (lb NO_x per net MWH of electricity produced) expressed as a ratio of the sum of the daily emission rates from all boilers, units, and approved alternative or advanced combustion resources divided by the sum of the net MWH produced from all affected boilers, units, and approved alternative or advanced combustion resources.~~
- 4.1.5 All data required by Paragraphs 2.1, 2.2, 2.3, 2.4, 2.5, 4.1.3, and 4.1.4 shall be recorded and transmitted to the District in a format specified by the Executive Officer.
- 4.2 Final Reporting Procedures
- 4.2.1 ~~On and after January 1, 1993, the RTU installed at each location shall constitute the reporting requirements.~~
- 4.2.2 ~~On and after January 1, 1993, all or part of the interim data storage systems shall remain as continuous backup systems.~~
- 4.2.3 ~~An alternate backup data storage system may be implemented, upon request. The owner or operator shall submit an Alternate Backup Data Storage Plan for the approval of the Executive Officer.~~

~~5. INTERIM MEASUREMENT PROCEDURES~~

- 5.1 ~~Until December 31, 1992, the requirements of Paragraphs 2.19, 2.19.1, 2.19.2, 2.19.3, 2.19.4, 2.19.5, 2.19.6, 2.19.7, 2.19.8, (volumetric flow rate audit methods) 3.5, 3.6, 3.7, 3.8, and 3.9 (relative accuracy test methods) will be waived until such time as the required source testing facilities meeting the requirements of Paragraph 2.14 have been installed. The owner or operator shall submit as a part of the required CEMS plan, construction plans and a schedule for the installation of each new testing facility. The plan shall be submitted for the approval of the Executive Officer prior to installation. Prior to the completion of the testing facility for each emission source, the owner or operator shall submit a test plan for flow rate relative accuracy testing. Within 30 days after completion of the testing facilities (or 30 days of initial start up thereafter), the required relative accuracy tests shall be completed. Sixty days thereafter, the owner or operator shall meet the requirements of Paragraphs 2.19, 2.19.1, 2.19.2, 2.19.3, 2.19.4, 2.19.5, 2.19.6, 2.19.7, and 2.19.8 using the reference methods in Paragraphs 3.5, 3.6, 3.7, 3.8, and 3.9 for relative accuracy test methods.~~
- 5.2 ~~From July 19, 1991 to December 31, 1992, the data recorded by the system approved for Paragraph 4.1 shall be the data of record to determine if the CEMS meets the required performance specifications.~~
- 5.3 ~~After December 31, 1992, the backup data system shall be the data of record to determine if the CEMS meets the required performance specifications. The backup system and the RTU system shall produce identical data.~~

- 5.4 ~~Each orifice used to measure the fuel gas flow rate shall be removed from the gas supply line for an inspection once every 15 months. The following items shall be subject to inspection:~~
- a. ~~Each orifice shall be visually inspected for any nicks, dents, corrosion, erosion, or any other signs of damage according to the orifice manufacturer's specifications.~~
 - b. ~~The diameter of each orifice shall be measured using the method recommended by the orifice manufacturer.~~
 - c. ~~The flatness of the orifice shall be checked according to the orifice manufacturer's instructions. The departure from flatness of an orifice plate shall not exceed 0.010 inch per inch of diam height ($D - d/2$) along any diameter. Here D is the inside pipe diameter and d is the orifice diameter at its narrowest constriction.~~
 - d. ~~The pressure gauge or other device measuring pressure drop across the orifice shall be calibrated against a manometer, and shall be replaced if it deviates more than ± 2 percent across the range.~~
 - e. ~~The surface roughness shall be measured using the method recommended by the orifice manufacturer. The surface roughness of an orifice plate shall not exceed 50 microinches.~~
 - f. ~~The upstream edge of the measuring orifice shall be square and sharp so that it will not show a beam of light when checked with an orifice gauge.~~
 - g. ~~In centering orifice plates, the orifice shall be concentric with the inside of the meter tube or fitting. The concentricity shall be maintained within 3 percent of the inside diameter of the tube or fitting along all diameters.~~
 - h. ~~Any other calibration tests specified by the orifice manufacturer shall be conducted at this time.~~
- 5.5 ~~If an orifice fails to meet any of the manufacturer's specifications, it shall be replaced within two weeks.~~

6. ALTERNATIVE PROCEDURES

6.1 Emission Stack Flow Rate Determination

~~In the event that more than one boiler vents to a common stack, the alternative reference method for determining individual boiler flow rates shall be EPA Method 19. This method may be used for applicable boilers before and after the interim period mentioned in Section 4.1. The orifice plates used in every boiler vented to a common stack shall meet the requirements in Paragraph 5.4.~~

7. COGENERATION SYSTEMS

- 7.1 ~~Cogeneration units must also measure and record the useful thermal energy along with the other measurements required in previous sections of this document. The measurements must meet the following conditions:~~

- a. ~~The owner or operator of each affected cogeneration unit must submit details of suitable methods to measure the useful thermal energy. At a minimum, these details shall include a description of all the measurement devices, including but not limited to flow meters, pressure measurement devices, and temperature measurement devices, the calculations used to calculate the useful thermal energy, and the technique and procedures used to calibrate each measurement device. Each measurement device shall be calibrated against standards which are traceable to NIST standards or to a higher authority if no NIST standards exist. The calibration accuracy tolerance of each measurement device shall be ± 1 per cent of all measured values. All measurement devices shall measure and record one data point each minute. The methods submitted to the District shall be subject to the approval of the Executive Officer before they are used for NO_x emission deductions mentioned in (b)(2)(B).~~
- b. ~~Each measurement device shall be calibrated a minimum of once every six months.~~

ATTACHMENT H

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final Staff Report

Proposed Amended Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities

November 2018

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TABLE OF CONTENTS

CHAPTER 1: BACKGROUND

INTRODUCTION	1-1
BACKGROUND	1-1
REGULATORY BACKGROUND	1-2
<i>Electricity Generating Facilities and RECLAIM</i>	1-3
PUBLIC PROCESS	1-4

CHAPTER 2: BARCT ASSESSMENT

INTRODUCTION	2-1
BARCT – RETROFIT VERSUS REPLACEMENT	2-1
BARCT ANALYSIS APPROACH	2-2
<i>Assessment of SCAQMD Regulatory Requirements</i>	2-3
<i>Assessment of Emission Limit for Existing Units</i>	2-4
<i>Other Regulatory Requirements</i>	2-10
<i>Assessment of Pollution Control Technologies</i>	2-11
<i>Initial BARCT Emission Limit and Other Considerations</i>	2-13
<i>Cost-Effectiveness Analysis</i>	2-16
<i>BARCT Emission Limit Recommendation</i>	2-21

CHAPTER 3: SUMMARY OF PROPOSALS

INTRODUCTION	3-1
TITLE	3-1
PURPOSE (SUBDIVISION (A))	3-1
APPLICABILITY (SUBDIVISION (B))	3-1
DEFINITIONS (SUBDIVISION (C))	3-1
EMISSIONS LIMITS (SUBDIVISION (D))	3-2
MONITORING, RECORDKEEPING, AND REPORTING (SUBDIVISION (E))	3-5
USE OF LIQUID PETROLEUM FUEL (SUBDIVISION (F)).....	3-8
EXEMPTIONS (SUBDIVISION (G))	3-9
CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS) REQUIREMENTS DOCUMENT FOR ELECTRIC POWER GENERATING UNITS	3-10

CHAPTER 4: IMPACT ASSESSMENT

POTENTIALLY IMPACTED FACILITIES	4-1
EMISSION INVENTORY AND EMISSION REDUCTIONS	4-2
INCREMENTAL COST-EFFECTIVENESS.....	4-4
RULE ADOPTION RELATIVE TO COST-EFFECTIVENESS	4-6
SOCIOECONOMIC ASSESSMENT	4-7
CALIFORNIA ENVIRONMENTAL QUALITY ACT	4-7
DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY CODE SECTION 40727.....	4-8

<i>Requirements to Make Findings</i>	4-8
<i>Necessity</i>	4-8
<i>Authority</i>	4-8
<i>Clarity</i>	4-8
<i>Consistency</i>	4-8
<i>Non-Duplication</i>	4-8
<i>Reference</i>	4-8
COMPARATIVE ANALYSIS	4-8

APPENDIX A – COMMENTS AND RESPONSES

COMMENT LETTER 1	A-1
COMMENT LETTER 2	A-9
COMMENT LETTER 3	A-21
COMMENT LETTER 4	A-24
COMMENT LETTER 5	A-29
COMMENT LETTER 6	A-34
COMMENT LETTER 7	A-36
COMMENT LETTER 8	A-39
COMMENT LETTER 9	A-46
COMMENT LETTER 10	A-49
COMMENT LETTER 11	A-51
COMMENT LETTER 12	A-53

REFERENCES	R-1
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CHAPTER 1: BACKGROUND

INTRODUCTION

BACKGROUND

REGULATORY BACKGROUND

PUBLIC PROCESS

INTRODUCTION

In March 2017, the SCAQMD adopted the Final 2016 Air Quality Management Plan (2016 AQMP) which includes a series of control measures to achieve the National Ambient Air Quality Standards for ozone. The adoption resolution of the 2016 AQMP directed staff to achieve additional NO_x emission reductions and to transition the Regional Clean Air Incentives Market (RECLAIM) program to a command-and-control regulatory structure requiring Best Available Retrofit Control Technology (BARCT) as soon as practicable. ~~Additionally, California State Assembly Bill (AB) 617, approved by the Governor on July 26, 2017, requires air districts to develop, by January 1, 2019, an expedited schedule for the implementation of BARCT no later than December 31, 2023 for facilities that are in the state greenhouse gas cap and trade program.~~

Rule 1135 – Emissions of Oxides of Nitrogen from Electric Power Generating Systems (Rule 1135) was adopted in 1989 and currently applies to electric power generating steam boiler systems, repowered units, and alternative electricity generating sources. Proposed Amended Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities (PAR 1135) is being amended to facilitate the transition of the NO_x RECLAIM program to a command-and-control regulatory structure and to implement Control Measure CMB-05 – Further NO_x Reductions from RECLAIM Assessment (Control Measure CMB-05) of the 2016 AQMP. PAR 1135 applies to RECLAIM and non-RECLAIM electricity generating facilities that are investor-owned electric utilities, publicly owned electric utilities, or have a generation capacity of at least 50 megawatts of electrical power.

BACKGROUND

The SCAQMD Governing Board adopted the RECLAIM program in October 1993. The purpose of RECLAIM is to reduce NO_x and SO_x emissions through a market-based approach. The program replaced a series of existing and future command-and-control rules and was designed to provide facilities with the flexibility to seek the most cost-effective solution to reduce their emissions. It also was designed to provide equivalent emission reductions, in the aggregate, for the facilities in the program compared to what would occur under a command-and-control approach. Regulation XX – Regional Clean Air Incentives Market (RECLAIM) (Regulation XX) includes a series of rules that specify the applicability and procedures for determining NO_x and SO_x facility emissions allocations, program requirements, as well as monitoring, reporting, and recordkeeping requirements for RECLAIM facilities.

Various rules within Regulation XX have been amended throughout the years. On December 4, 2015, Regulation XX was amended to achieve programmatic NO_x emission reductions through an overall reduction in RECLAIM trading credits (RTC) of 12 tons per day from compliance years 2016 through 2022. Regulation XX was amended on October 7, 2016 to incorporate provisions that limited use of RTCs from facility shutdowns. The most recent amendments to Regulation XX ~~on January 5, 2018 was were~~ to amend Rules 2001 – Applicability and 2002 – Allocations for Oxides of Nitrogen (NO_x) and Oxides of Sulfur (SO_x) to commence the initial steps to transition RECLAIM facilities to a command-and-control regulatory approach and to allow facilities to opt-out if certain criteria are met or to stay in RECLAIM for a limited time while complying with applicable command-and-control requirements.

In response to concerns regarding actual emission reductions and implementation of BARCT under RECLAIM, Control Measure CMB-05 of the 2016 AQMP committed to an assessment of the RECLAIM program in order to achieve further NO_x emission reductions of five tons per day, including actions to sunset the program and ensure future equivalency to command-and-control regulations. During the adoption of the 2016 AQMP, the Resolution directed staff to modify Control Measure CMB-05 to achieve the five tons per day NO_x emission reduction as soon as feasible but no later than 2025, and to transition the RECLAIM program to a command-and-control regulatory structure requiring BARCT-level controls as soon as practicable. Staff provided a report on transitioning the NO_x RECLAIM program to a command-and-control regulatory structure at the May 5, 2017 Governing Board meeting and provides quarterly updates to the Stationary Source Committee, with the first quarterly report provided on October 20, 2017.

~~On July 26, 2017, AB 617 was approved by the Governor, which addresses non-vehicular air pollution (criteria pollutants and toxic air contaminants). It is a companion legislation to AB 398, which was also approved, and extends California's cap and trade program for reducing greenhouse gas emissions from stationary industrial sources. Electricity generating facilities are not classified as stationary industrial sources. RECLAIM facilities that are in the cap and trade program are subject to the requirements of AB 617. Among the requirements of this bill is an expedited schedule for implementing BARCT for cap and trade facilities. Air Districts are to develop by January 1, 2019, an expedited schedule for the implementation of BARCT no later than December 31, 2023. The highest priority would be given to older, higher polluting units that will need to install retrofit controls.~~

In 2015, staff conducted a programmatic analysis of the RECLAIM equipment at each facility to determine if there are appropriate and up to date BARCT NO_x limits within existing SCAQMD command-and-control rules for all RECLAIM equipment. It was determined that command-and-control rules would need to be adopted and/or amended to update emission limits to reflect current BARCT and to provide implementation timeframes for achieving BARCT compliance limits for certain RECLAIM equipment.

Rule 1135 is being amended to facilitate the transition of the NO_x RECLAIM program to a command-and-control regulatory structure and to implement Control Measure CMB-05, of the 2016 AQMP. PAR 1135 applies to RECLAIM and non-RECLAIM electricity generating facilities that are investor-owned electric utilities, publicly owned electric utilities, or have a generation capacity of at least 50 megawatts of electrical power. The proposed amended rule will update emission limits to reflect current BARCT and to provide implementation timeframes. The provisions in PAR 1135 establish NO_x and ammonia (NH₃) emission limits for boilers and gas turbines and NO_x, ammonia, carbon monoxide, volatile organic compounds, and particulate matter for internal combustion engines located on Santa Catalina Island. Additionally, PAR 1135 establishes provisions for monitoring, reporting, and recordkeeping, and establishes exemptions from specific provisions.

REGULATORY BACKGROUND

Rule 1135 was adopted in 1989 and applied to electric power generating steam boiler systems, repowered units, and alternative electricity generating sources. Rule 1135 set a NO_x system-wide average emission limit of 0.25 lb/MW-hr and a daily NO_x emissions cap for each utility system. Rule 1135 established interim emissions performance levels with a 1996 final compliance date.

Additionally, Rule 1135 required Emission Control Plans and continuous emissions monitoring systems.

Rule 1135 was submitted to the California Air Resources Board (CARB) for review, prior to submittal to the Environmental Protection Agency (EPA), Region IX, for revision to the State Implementation Plan (SIP). In March 1990, CARB staff informed SCAQMD that the adopted rule was lacking specificity in critical areas of implementation and enforcement, and was therefore, considered incomplete for submission to EPA as a SIP revision.

The December 21, 1990 amendment of Rule 1135 was principally developed to resolve many of the implementation and enforceability issues. This amendment included accelerated retrofit dates for emission controls, unit-by-unit emission limits, modified compliance plan and monitoring requirements, computerized telemetering, and an amended definition of alternative resources.

Furthermore, in order to consider additional staff recommendations regarding system-wide emission rates, daily emission caps, annual emission caps, oil burning, and cogeneration, the Board continued the public hearing. The July 19, 1991 amendment addressed all of these outstanding issues, including those related to modeling and BARCT analysis. EPA approved Rule 1135 into the SIP on August 11, 1998.

Electricity Generating Facilities and RECLAIM

Throughout the RECLAIM program, there have been specific provisions for electricity generating facilities. When RECLAIM was adopted in 1993, pursuant to Rule 2001 electricity generating facilities were initially included in NO_x RECLAIM and could opt-in to SO_x RECLAIM. Electricity generating facilities that were owned and operated by the City of Burbank, City of Glendale, or the City of Pasadena were not initially included in NO_x and SO_x RECLAIM program, but were allowed to opt-in to the program. The cities of Burbank and Pasadena opted-in to RECLAIM, while the City of Glendale remained regulated by command-and-control rules.

In June 2000, RECLAIM program participants experienced a sharp and sudden increase in NO_x RECLAIM trading credit (RTC) prices for both the 1999 and 2000 compliance years. Based on the 2000 RECLAIM Annual Report, electricity generating facilities had an initial allocation of 2,302 tons of NO_x per year. In compliance year 2000, these facilities reported NO_x emissions of 6,788 tons per year, approximately 4,400 tons per year over their initial allocation. This was primarily due to an increased demand for power generation and delayed installation of controls by electricity generating facilities. The electric power generating industry purchased a large quantity of RTCs, which depleted the available RTCs. This situation was compounded because few RECLAIM facilities added control equipment. As a result, in May 2001, the Board adopted Rule 2009 – Compliance Plan for Power Producing Facilities (Rule 2009). To facilitate emission reduction projects at the facilities with the majority of the emissions in RECLAIM, Rule 2009 required installation of BARCT through compliance plans at electricity generating facilities. Diesel internal combustion engines providing power to Santa Catalina Island were not subject to Rule 2009 because the facility only generates 9 megawatts of energy and did not qualify as a Power Producing Facility in RECLAIM.

A case-by-case technical and cost-effectiveness evaluation was performed to determine BARCT for electric generating units at electricity generating facilities. At that time BARCT for utility

boilers was determined to be 9 ppmv NO_x at 3% oxygen on a dry basis and for gas turbines was determined to be 9 ppmv NO_x at 15% oxygen on a dry basis. Where technically feasible and cost-effective, RECLAIM electric generating units were retrofitted, repowered, or retired. There were electric generating units that could not cost-effectively control emissions and were given permit limits with higher NO_x concentrations. Between 2001 and 2005, more than 35 simple and combined cycle gas turbines were repowered to BARCT levels or below. Despite the increase in NO_x RTC demand, emissions from electricity generating facilities fell from 26 tons per day of NO_x emissions in 1989 to less than 10 tons per day of NO_x emissions by 2005. Since then, with equipment replacement and increased reliance on renewable sources, NO_x emissions have further decreased to less than 4 tons per day.

PUBLIC PROCESS

Development of Proposed Amended Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities was conducted through a public process. SCAQMD has held five working group meetings at the SCAQMD Headquarters in Diamond Bar on January 24, 2018, April 26, 2018, June 13, 2018, July 5, 2018, and September 25, 2018. The Working Group is composed of representatives from businesses, environmental groups, public agencies, and consultants. The purpose of the working group meetings is to discuss proposed concepts and work through the details of staff's proposal. Additionally, a Public Workshop was held at the SCAQMD Headquarters in Diamond Bar on August 2, 2018.

CHAPTER 2: BARCT ASSESSMENT

INTRODUCTION

BARCT – RETROFIT VERSUS REPLACEMENT

BARCT ANALYSIS APPROACH

INTRODUCTION

Staff conducted an assessment of Best Available Retrofit Control Technology (BARCT) for electric generating units including diesel internal combustion engines located on Santa Catalina Island, natural gas boilers, and natural gas turbines and associated duct burners. BARCT is defined in the California Health and Safety Code section 40406 as “an emission limitation that is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of source.” Consistent with state law, BARCT emissions limits take into consideration environmental impacts, energy impacts, and economic impacts. In addition to NO_x reductions sought in the proposed amended rule, SCAQMD, through the California Environmental Quality Act (CEQA) process, identified potential environmental and energy effects of the proposed rule. Economic impacts are assessed at the equipment category level by a review of cost-effectiveness and incremental cost-effectives contained in this report and at the macro level as part of the socio-economic assessment contained in a separate report.

BARCT – RETROFIT VERSUS REPLACEMENT

A question was raised in the Regional Clean Air Incentives Market (RECLAIM) Working Group concerning the scope of “best available retrofit control technology,” which the SCAQMD must impose for all existing stationary sources, including sources that exit RECLAIM or that exist after RECLAIM has ended pursuant to Health & Safety Code section 40440(b)(1). A commenter stated that the use of the word “retrofit” precludes the SCAQMD from requiring emissions limits that can only be cost-effectively met by replacing the basic equipment with new equipment. Staff believes that the use of the term “retrofit” does not preclude replacement technology. A review of on-line dictionaries supports this view.

The on-line Merriam-Webster Dictionary defines “retrofit” in a manner that does not preclude replacing equipment. That dictionary establishes the following definition for retrofit: “1: to furnish (something, such as a computer, airplane, or building) with new or modified parts or equipment not available or considered necessary at the time of manufacture, 2: to install (new or modified parts or equipment) in something previously manufactured or constructed, 3: to adapt to a new purpose or need: modify.” <https://www.merriam-webster.com/dictionary/retrofit>. This definition does not preclude the use of replacement parts as a retrofit.

The on-line Dictionary.com is more explicit in allowing replacement parts. It includes the following definitions for retrofit as a verb: “1. to modify equipment (in airplanes, automobiles, a factory, etc.) that is already in service using parts developed or made available after the time of original manufacture, 2. to install, fit, or adapt (a device or system) or use with something older; to retrofit solar heating to a poorly insulated house, 3. (of new or modified parts, equipment, etc.) to fit into or onto existing equipment, 4. to replace existing parts, equipment, etc., with updated parts or systems.” <http://www.dictionary.com/browse/retrofit>. This definition clearly includes replacement of existing equipment within the concept of “retrofit.” Accordingly, the use of the term “retrofit” can include the concept of replacing existing equipment.

Moreover, the statutory definition of “best available retrofit control technology” does not preclude replacing existing equipment with new cleaner equipment. Health & Safety Code section 40406 provides: “As used in this chapter, ‘best available retrofit control technology’ means an emission

limitation that is based on the maximum degree of emission reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of source.” Thus, it is clear that BARCT is an emissions limitation, and is not limited to a particular technology, whether add-on or replacement. Certainly this definition does not preclude replacement technologies.

Staff also notes that the argument precluding replacement equipment would have an effect contrary to the purposes of BARCT. For example, staff has proposed a BARCT that may be more cost-effectively be met for diesel-fueled engines by replacing the engine with a new Tier IV diesel engine rather than installing additional add-on controls on the current engine which may be many decades old. If the SCAQMD were precluded from setting BARCT for these sources, the oldest and dirtiest equipment could continue operating for possibly many more years, even though it would be cost-effective and otherwise reasonable to replace those engines. There is no policy reason for insisting that replacement equipment cannot be an element of BARCT as long as it meets the requirements of the statute including cost-effectiveness.

The case law supports an expansive reading of BARCT. In explaining the meaning of BARCT, the California Supreme Court held that BARCT is a “technology-forcing standard designed to compel the development of new technologies to meet public health goals.” *American Coatings Ass’n. v. South Coast Air Quality Mgt. Dist.*, 54 Cal. 4th 446, 465 (2012). In fact, the BARCT requirement was placed in state law for the SCAQMD in order to “encourage more aggressive improvements in air quality” and was designed to augment rather than restrain the SCAQMD’s regulatory power. *American Coatings, supra*, 54 Cal. 4th 446, 466. Accordingly, BARCT may actually be more stringent than Best Available Control Technology (BACT), because BACT must be implemented today by a source receiving a permit today, whereas BARCT may, if so specified by the SCAQMD, be implemented a number of years in the future after technology has been further developed. *American Coatings, supra*, 54 Cal. 4th 446, 467.

The Supreme Court further held that when challenging the SCAQMD’s determination of the scope of a “class or category of source” to which a BARCT standard applies, the challenger must show that the SCAQMD’s determination is “arbitrary, capricious, or irrational.” *American Coatings, supra*, 54 Cal. 4th 446, 474. Therefore, the SCAQMD may consider a variety of factors in determining which sources must meet any particular BARCT emissions level. If, for example, some sources could not cost-effectively reduce their emissions further because their emissions are already low, these sources can be excluded from the category of sources that must meet a particular BACT. Therefore, the SCAQMD may establish a BARCT emissions level that can cost-effectively be met by replacing existing equipment rather than installing add-on controls, and the SCAQMD’s definition of the category of sources which must meet a particular BARCT is within the SCAQMD’s discretion as long as it is not arbitrary or irrational.

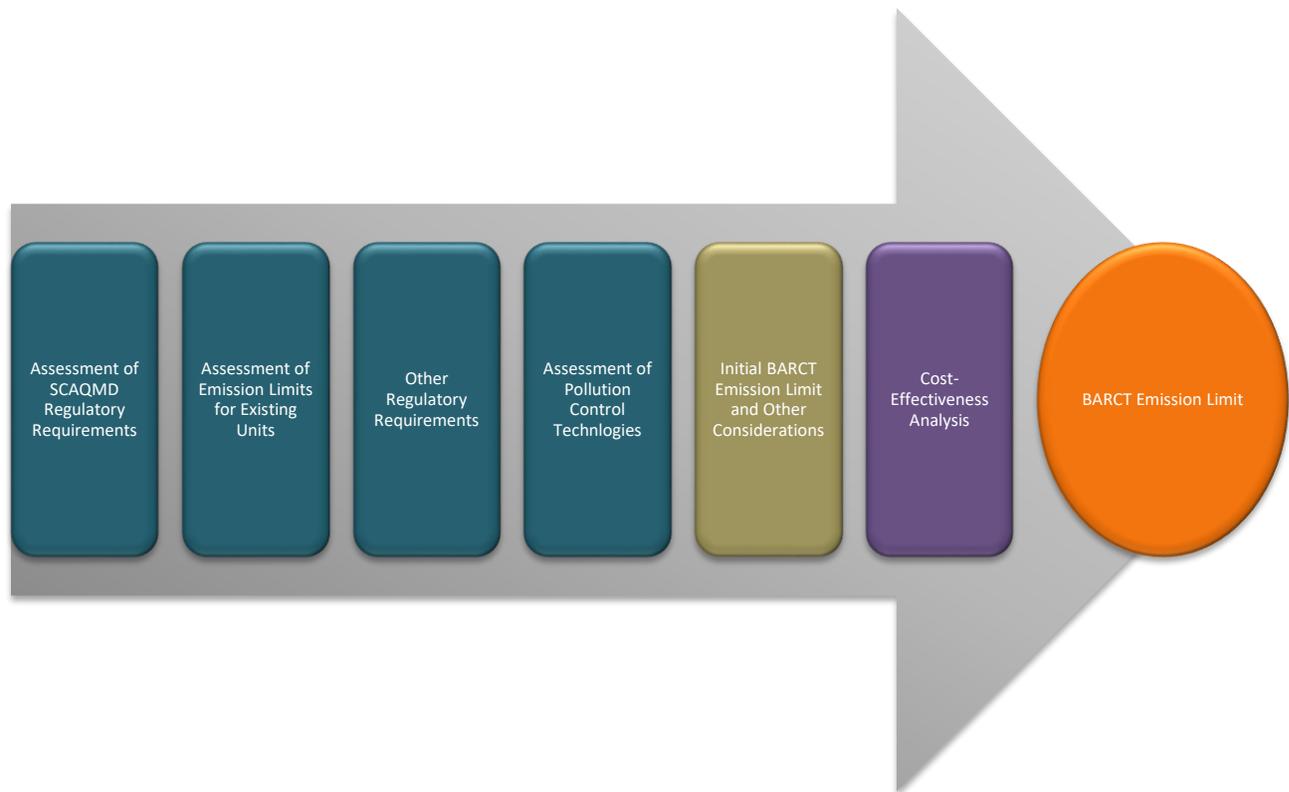
BARCT ANALYSIS APPROACH

The BARCT analysis approach follows a series of steps conducted for each equipment category and fuel type. For Proposed Amended Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities (PAR 1135), liquid petroleum (diesel) fueled internal combustion engines and natural gas fired boilers and turbines were analyzed. Liquid petroleum fuels are only allowable during force majeure natural gas curtailment periods for boiler and turbines and for

internal combustion engines on Santa Catalina Island where natural gas is unavailable. Natural gas fuel burning is required in all other situations.

The steps for BARCT analysis consist of:

- Assessment of SCAQMD Regulatory Requirements
- Assessment of Emissions Limits for Existing Units
- Other Regulatory Requirements
- Assessment of Pollution Control Technologies
- Initial BARCT Emission Limit and Other Considerations
- Cost-Effectiveness Analysis
- Final BARCT Emission Limit



Assessment of SCAQMD Regulatory Requirements

As part of the BARCT assessment, staff reviewed existing SCAQMD regulatory requirements that affect NO_x emissions for equipment at electricity generating facilities. NO_x emissions from electricity generating facilities are regulated under Rule 1135 – Emissions of Oxides of Nitrogen from Electric Power Generating Systems (Rule 1135), Regulation XX – Regional Clean Air Incentives Market (RECLAIM) (Regulation XX), and Rule 2009 – Compliance Plan for Power Producing Facilities (Rule 2009) within RECLAIM. Under Rule 1135, the NO_x emission standard is a system-wide standard and does not include equipment-specific NO_x emissions standards. The current NO_x system-wide standard is as follows in Table 2-1 below.

Table 2-1 – Current Rule 1135 System-Wide NOx Limits

Electric Power Generating System	NOx Limit (tons per year)
Southern California Edison	1,640
Los Angeles Department of Water and Power	960
City of Burbank	56
City of Glendale	35
City of Pasadena	80

Similarly, the RECLAIM program limits NOx emissions from electricity generating facilities, but does not limit emissions or establish concentration limits by equipment category or fuel type. However, emissions limits are established at the time of permitting, and permits include concentration limits for NOx and emissions limits for non-RECLAIM pollutants such as particulate matter. A facility's NOx allocations are diminished over time, requiring facilities to lower emissions or to purchase credits from other facilities that have lowered emissions below their allocations.

In 2001, Rule 2009 was adopted in response to California energy issues. The rule required RECLAIM electricity generating facilities to install pollution controls to help stabilize RECLAIM Trading Credit (RTC) prices. Electricity generating facilities submitted compliance plans demonstrating that all RECLAIM NOx emitting equipment achieved BARCT emission levels. A case-by-case technical and cost-effectiveness evaluation was performed to determine BARCT. At that time BARCT for natural gas utility boilers was determined to be 9 ppmv NOx at 3% oxygen on a dry basis and natural gas turbines was determined to be 9 ppmv NOx at 15% oxygen on a dry basis. Where technically feasible and cost-effective, RECLAIM electric generating units were retrofitted, replaced, or retired. There were electric generating units that could not cost-effectively control emissions and were given permit limits with higher NOx concentrations. The proposed amendments to Rule 1135 do not obviate implementation ~~or~~ of compliance plans under Rule 2009. The assessment of SCAQMD regulatory requirements found a BARCT emission limit of 9 ppmv at 15% ~~02~~ oxygen on a dry basis for both natural gas turbines and 9 ppmv at 3% oxygen on a dry basis for natural gas boilers. No assessment was made for diesel internal combustion engines as they were not subject to Rule 2009 due to low output.

Assessment of Emission Limit for Existing Units

Staff examined all of the current electric generating units to assess the emission rate of equipment located in SCAQMD. Permit limits for NOx concentrations were identified for all equipment to identify what is already being done in practice. Currently, there are approximately ~~124~~ 122 pieces of equipment at 31 facilities: six diesel internal combustion engines at one facility; 23 natural gas boilers at 8 facilities; ~~5960~~ natural gas simple cycle gas turbines at ~~2021~~ facilities; and ~~2322~~ natural gas combined cycle gas turbines and 11 associated duct burners at ~~1211~~ facilities.

Diesel Internal Combustion Engines

Six diesel internal combustion engines are located on Santa Catalina Island. Five of these engines were installed more than 33 years ago and one was installed 23 years ago. All units are controlled with selective catalytic reduction. The permitted NOx emission limits range between 51 ppmv to 140 ppmv at 15% oxygen on a dry basis. The permitted ammonia emission limit for all six units

is 10 ppmv at 15% oxygen on a dry basis. In 2003, the higher emitting units were retrofitted, while the lowest emitting unit was a new installation in 1995. The lowest permitted NOx limit for a diesel engine used for electricity generation in SCAQMD is 51 ppmv at 15% oxygen on a dry basis. The details of the diesel internal combustion engines subject to PAR 1135 are listed below in Table 2-2 below.

Table 2-2 – Diesel Internal Combustion Engines

Unit	Size (HP)	Output (MW)	Install Year	Retrofit Date	Control ³	NOx Permit Limit ¹	Ammonia Permit Limit (ppmv at 15% oxygen, dry)	2016 NOx Emissions (tons)
ICE1	1575	1.125	1968	2003	SCR	6.5 lbs/MWh ²	10	16
ICE3	1950	1.4	1985	2003	SCR	6.5 lbs/MWh ²	10	5.3
ICE6	2150	1.5	1964	2003	SCR	6.5 lbs/MWh ²	10	8.2
ICE5	1500	1	1967	2003	SCR	6.5 lbs/MWh ²	10	12
ICE2	2200	1.5	1976	2003	SCR	6.5 lbs/MWh ²	10	22
ICE4	3900	2.8	1995	None	SCR	51 ppmv at 15% oxygen, dry; 6.5 lbs/MWh ²	10	5.9

¹ – Actual NOx concentrations emitted are generally lower than the NOx permit limits

² – Averaged over one calendar year, limit is based on total mass NOx emitted from Units 1 – 6 and micro turbines

³ – SCR: Selective Catalytic Reduction

Natural Gas Boilers

Of the 23 natural gas boilers used to generate electricity, 16 of them are subject to the Clean Water Act's once-through-cooling (OTC) provisions and are scheduled for shutdown. Eight of the 16 units were retrofitted between 1990 and 2002 to meet a NOx limit of 5 ppmv at 3% oxygen on a dry basis. Ammonia limits range between 10 ppmv and 20 ppmv at 3% oxygen on a dry basis. Information regarding natural gas boilers subject to the Clean Water Act's once-through-cooling regulation is provided in Table 2-3 below.

There are seven natural gas boilers that are not subject to the Clean Water Act's OTC provisions. Two of the natural gas boilers are scheduled for shut-down and retirement by 2019. Three natural gas boilers, all with NOx permit limits between 38 and 82 ppmv NOx at 3% oxygen on a dry basis, are operated by a municipality. The operator has informed their city council of plans to shut-down the natural gas boilers and replace them with one or more natural gas turbines and the project is pending city council approval. The remaining two natural gas boilers have not been in operation

since 2012. For these remaining seven natural gas boilers, the lowest permitted NOx concentration limit is 5 ppmv at 3% oxygen on a dry basis, which was retrofitted in 2002. The lowest permitted NOx limit for a natural gas boiler used for electricity generation in SCAQMD is also 5 ppmv at 3% oxygen on a dry basis. The details of the natural gas boilers subject to PAR 1135 are listed below in Table 2-3 below.

Table 2-3 – Natural Gas Boilers

Unit	Size (MMBTU/HR)	Output (MW)	Install Year	Retrofit Year	Control ²	NOx Permit Limit ¹ (ppmv @ 3% oxygen, dry)	Ammonia Permit Limit (ppmv @ 3% oxygen, dry)	2016 NOx Emissions (tons)	Shut Down Date
B15	492	44	1959	None	LNB/FGR	82	N/A	177.5	Pending
B12	260	20	1953	None	LNB/FGR	40	N/A	39.7	Pending
B18	527.25	44	1969	2002	FGR/SNCR	38	10	133.6	Pending
B2	2021	215	1958	2001	SCR	7	10	8.2	OTC 11/1/19
B17	1785	175	1954	2001	SCR/staged- <u>Staged eombComb</u>	7	10	1.3	OTC 11/1/19
B20	1785	175	1957	2001	SCR/staged- <u>Staged eombComb</u>	7	10	3.3	OTC 11/1/19
B1	1785	175	1956	2001	SCR/FGR/staged- <u>Staged eombComb</u>	7	10	2.0	OTC 12/29/19
B6	1785	175	1957	2001	SCR/FGR/staged- <u>Staged eombComb</u>	7	10	3.8	OTC 12/29/19
B10	3350	320	1961	2001	SCR/FGR	7	10	14	OTC 12/31/20
B13	3350	320	1962	2001	SCR/FGR	7	10	8.6	OTC 12/31/20
B7	2021	215	1958	2001	SCR	7	10	7.6	OTC 12/31/20
B11	2900	320	1963	2001	FGR/Staged Comb/SCR	7	10	3.6	12/31/2018
B14	2900	320	1963	2001	FGR/Staged Comb/SCR	7	10	4.1	12/31/2018
B9	1750	179	1959	2002	SCR	5	10	1.8	OTC 12/31/24
B4	1750	179	1958	2002	SCR	5	10	6.9	OTC 12/31/24
B23	551.84	44	1959	2002	SCR/LNB	5	10	0.0	None
B24	604.7	55	1964	2002	SCR	5	10	0.0	None
B3	2240	230	1962	1993	SCR	5	20	5.3	OTC 12/31/29
B8	2240	230	1963	1993	SCR	5	20	5.5	OTC 12/31/29
B21	4752.2	480	1968	1994	SCR/FGR/staged- <u>Staged eombComb</u>	5	20	5.4	OTC 11/1/19
B22	4752.2	480	1968	1994	SCR/FGR/staged- <u>Staged eombComb</u>	5	20	3.3	OTC 11/1/19
B19	4752.2	480	1966	1994	SCR/FGR	5	20	2.3	OTC 12/29/19
B16	4750	480	1969	1994	SCR/LNB/FGR	5	20	2.1	OTC 12/31/20

¹ – Actual NOx concentrations emitted are generally lower than the NOx permit limit

² – FGR: Flue Gas Recirculation, LNB: Low NOx Burner, SCR: Selective Catalytic Reduction, SNCR: selective Selective non-catalytic Catalytic reduction, ~~staged-Staged eombComb~~: ~~staged-Staged eombComb~~ ~~staged-Staged eombComb~~

Natural Gas Combined Cycle Gas Turbines

For natural gas combined cycle gas turbines, 15 of ~~2223~~ units are permitted at 2 ppmv NOx at 15% oxygen on a dry basis. All units were replacement units installed in 2005 or later. Two units were installed as late as 2015, still with a permitted NOx limit of 2 ppmv at 15% oxygen on a dry basis. Units that were permitted at 2 ppmv NOx at 15% oxygen on a dry basis also had ammonia permit limits of 5 ppmv at 15% oxygen on a dry basis. The lowest permitted NOx limit for a natural gas combined cycle gas turbines used for electricity generation in SCAQMD is 2 ppmv at 15% oxygen on a dry basis. Table 2-4 lists the information regarding natural gas combined cycle gas turbines.

Table 2-4 – Natural Gas Combined Cycle Gas Turbines

Unit	Size (MMBTU/HR)	MW Rating	Install	Control	NOx Permit Limit ¹ (ppmv @ 15% oxygen, dry)	Ammonia Permit Limit (ppmv @ 15% oxygen, dry)	2016 NOx Emissions (tons)
T-CC-1	442	48	1993	SCR	9 and 7.6	20	4.3
T-CC-26	350	30	1976	SCR	9	5	0.75
T-CC-27	350	60	1976	SCR	9	5	0.51
T-CC-28	350	60	1976	SCR	9	5	0.51
T-CC-22	1088	182	1993	SCR/water injection	7	20	12
T-CC-23	1088	182	1993	SCR/water injection	7	20	8.9
T-CC-24 ⁴	1944	290	2002	SCR/DLN	2.5	5	33
T-CC-25 ⁴	1944	290	2002	SCR/DLN	2.5	5	36
T-CC-10	2597	405	2008	SCR/DLN	2	5	1.8
T-CC-11 ⁴	535	71.7	2005	SCR	2	5	20
T-CC-12 ⁴	535	71.7	2005	SCR	2	5	20
T-CC-13 ⁴	2126	264	2005	SCR/DLN	2	5	24
T-CC-14 ⁴	2126	264	2005	SCR/DLN	2	5	23
T-CC-15 ⁴	2126	264	2005	SCR/DLN	2	5	23
T-CC-16 ⁴	2126	264	2005	SCR/DLN	2	5	25
T-CC-18 ^{3,4}	2043.6	295	2008	SCR/DLN	2	5	22
T-CC-19 ^{3,4}	2043.6	295	2008	SCR/DLN	2	5	39
T-CC-20	2205	321	2015	SCR/DLN	2	5	26
T-CC-21	547.5	71	2015	SCR/water injection	2	5	0.4
T-CC-6	2096	286.5	2013	SCR/DLN	2	5	11
T-CC-7	2096	386.5	2013	SCR/DLN	2	5	11
T-CC-8 ⁴	2370	328	2005	SCR/DLN	2	5	33
T-CC-9	2597	405	2008	SCR/DLN	2	5	6.2

¹ – Actual NOx concentrations emitted are generally lower than the NOx permit limit

² – DLN: Dry Low NOx, SCR: Selective Catalytic Reduction

³ – Subject to the Clean Water Act's once-through cooling (OTC) provisions and scheduled for shutdown 12/31/29

⁴ – Natural Gas Combined Cycle Gas Turbine with Associated Duct Burner

Natural Gas Simple Cycle Gas Turbines

For natural gas simple cycle gas turbines, 37 of ~~5960~~ units are permitted at or below 2.5 ppmv NOx at 15% oxygen on a dry basis. Two of the 37 units are permitted at 2.3 ppmv NOx at 15% oxygen on a dry basis. However, the operator of the two units is seeking permit changes to raise the limit to 2.5 ppmv NOx at 15% oxygen on a dry basis to avoid compliance issues. All of the

low concentration natural gas simple cycle turbines were new installations commissioned after 2006. Units that were permitted at 2.5 ppmv NO_x at 15% oxygen on a dry basis also have ammonia permit limits of 5 ppmv at 15% oxygen on a dry basis. Table 2-5 lists the information regarding natural gas simple cycle turbines.

Table 2-5 – Natural Gas Simple Cycle Gas Turbines

Unit	Size (MMBTU/HR)	Output (MW)	Install Year	Control ²	NO _x Permit Limit ¹ (ppmv at 15% oxygen, dry)	Ammonia (ppmv at 15% oxygen, dry)	2016 NO _x Emissions (tons)
T-SC-61	69.12	6	1989	Water Injection	24	NA	0.058
T-SC-63	69.12	6	1989	Water Injection	24	NA	0.13
<u>T-SC-76</u>	<u>442</u>	<u>48</u>	<u>1993</u>	<u>SCR</u>	<u>9 and 7.6</u>	<u>20</u>	<u>4.3</u>
T-SC-64	298	31	1975	SCR/water injection	9	5	0.088
T-SC-65	298	30	1975	SCR/water injection	9	5	0.0
T-SC-68	450	46	2002	SCR/water injection	5	5	1.2
T-SC-10	450	45	2001	SCR/water injection	5	5	1.9
T-SC-30	450	45	2001	SCR/water injection	5	5	1.5
T-SC-40	450	45	2001	SCR/water injection	5	5	1.6
T-SC-13	128.8	10.5	2001	SCR/DLN	5	5	0.030
T-SC-33	128.8	10.5	2001	SCR/DLN	5	5	0.037
T-SC-43	128.8	10.5	2001	SCR/DLN	5	5	0.036
T-SC-52	128.8	10.5	2001	SCR/DLN	5	5	0.026
T-SC-66	448	47.4	2003	SCR/water injection	5	5	2.4
T-SC-67	448	47.4	2003	SCR/water injection	5	5	8.9
T-SC-18	466.8	47.4	2001	SCR/water injection	5	5	2.0
T-SC-19	466.8	47.4	2001	SCR/water injection	5	5	1.6
T-SC-21	466.8	47.4	2001	SCR/water injection	5	5	1.1
T-SC-23	466.8	47.4	2001	SCR/water injection	5	5	1.0
T-SC-25	466.8	47.4	2001	SCR/water injection	5	5	2.0
T-SC-57	466.8	47.4	2001	SCR/water injection	5	5	1.5
T-SC-75	470	49.6	2003	SCR/water injection	5	5	3.6
T-SC-15	456.5	48	2003	SCR/water injection	3.5	5	0.49
T-SC-71	505	47	2007	SCR/water injection	2.5	5	1.5
T-SC-70	511.5	47	2007	SCR/water injection	2.5	5	2.0
T-SC-72	522	47	2007	SCR/water injection	2.5	5	1.7
T-SC-29	871.3	65	2007	SCR/water injection	2.5	5	1.2
T-SC-39	871.3	65	2007	SCR/water injection	2.5	5	1.2
T-SC-49	871.3	65	2007	SCR/water injection	2.5	5	1.2
T-SC-9	871.3	65	2007	SCR/water injection	2.5	5	0.91
T-SC-14	490	50	2006	SCR/water injection	2.5	5	1.3
T-SC-34	490	50	2006	SCR/water injection	2.5	5	1.3
T-SC-16	891.7	100	2013	SCR/water injection	2.5	5	9.7
T-SC-35	891.7	100	2013	SCR/water injection	2.5	5	10.2
T-SC-45	891.7	100	2013	SCR/water injection	2.5	5	9.7
T-SC-54	891.7	100	2013	SCR/water injection	2.5	5	8.0
T-SC-58	891.7	100	2013	SCR/water injection	2.5	5	7.7
T-SC-69	505.7	47	2007	SCR/water injection	2.5	5	1.9
T-SC-1	891.7	100	2013	SCR/water injection	2.5	5	2.7
T-SC-2	891.7	100	2013	SCR/water injection	2.5	5	2.7
T-SC-3	891.7	100	2013	SCR/water injection	2.5	5	2.5

Unit	Size (MMBTU/HR)	Output (MW)	Install Year	Control ²	NOx Permit Limit ¹ (ppmv at 15% oxygen, dry)	Ammonia (ppmv at 15% oxygen, dry)	2016 NOx Emissions (tons)
T-SC-4	891.7	100	2013	SCR/water injection	2.5	5	2.7
T-SC-5	891.7	100	2013	SCR/water injection	2.5	5	2.6
T-SC-6	891.7	100	2013	SCR/water injection	2.5	5	2.6
T-SC-7	891.7	100	2013	SCR/water injection	2.5	5	2.6
T-SC-8	891.7	100	2013	SCR/water injection	2.5	5	2.0
T-SC-17	479	50	2011	SCR/water injection	2.5	5	1.5
T-SC-36	479	50	2011	SCR/water injection	2.5	5	1.3
T-SC-46	479	50	2011	SCR/water injection	2.5	5	1.4
T-SC-55	479	50	2011	SCR/water injection	2.5	5	1.5
T-SC-20	906.6	103	2013	SCR/water injection	2.5	5	4.9
T-SC-22	906.6	103	2013	SCR/water injection	2.5	5	0.9
T-SC-24	906.6	103	2013	SCR/water injection	2.5	5	4.6
T-SC-26	906.6	103	2013	SCR/water injection	2.5	5	1.1
T-SC-27	906.6	103	2013	SCR/water injection	2.5	5	4.4
T-SC-28	906.6	103	2013	SCR/water injection	2.5	5	3.8
T-SC-60	959	106	2015	SCR/water injection	2.5	5	7.0
T-SC-62	959	106	2015	SCR/water injection	2.5	5	8.2
T-SC-44	490	50	2009	SCR/water injection	2.3	5	0.7
T-SC-53	490	50	2009	SCR/water injection	2.3	5	0.9

¹ – Actual NOx concentration emitted are generally lower than the NOx permit limit

² – DLN: Dry Low NOx, SCR: Selective Catalytic Reduction

Summary

A summary of permitted limits in SCAQMD for the four types of electrical power-generating units is provided in Table 2-6. While previous SCAQMD regulatory requirements established BARCT at 9 ppmv at 15% oxygen on a dry basis for natural gas boilers and natural gas turbines, existing equipment in SCAQMD in all categories have been found at lower NOx concentration limits as seen in the Table 2-6.

Table 2-6 – Assessment of NOx Concentration Levels for Existing Units

Equipment	Initial Recommendation for NOx Concentration Limit Based on Existing Units	Number of Units Meeting Retrofit Concentration Limit	Pollution Control Technology
Diesel Internal Combustion Engine	45 ppmv at 15% oxygen, dry	0 units	Selective Catalytic Reduction (Replacement)
Natural Gas Boiler	5 ppmv at 3% oxygen, dry	10 units	Selective Catalytic Reduction, Low-NOx Burners, Flue Gas Recirculation, Staged Combustion (Retrofit)
Natural Gas Combined Cycle Gas Turbine	2 ppmv at 15% oxygen, dry	15 units	Selective Catalytic Reduction, Water Injection, Dry Low NOx (Replacement)
Natural Gas Simple Cycle Gas Turbine	2.5 ppmv at 15% oxygen, dry	37 units	Selective Catalytic Reduction, Water Injection, Dry Low NOx (Replacement)

Other Regulatory Requirements

As part of the BARCT assessment, staff examined NOx limits for electric generating units promulgated by Bay Area Air Quality Management District (BAAQMD) and San Joaquin Valley Air Pollution Control District (SJVAPCD). BAAQMD Regulation 9, Rule 8 – Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines; Regulation 9, Rule 9 – Nitrogen Oxides and Carbon Monoxide from Stationary Gas Turbines; and Regulation 9, Rule 11 – Nitrogen Oxides and Carbon Monoxide from Utility Electric Power Generating Boilers were reviewed. Similarly, SJVAPCD Rule 4306 – Boilers, Steam Generators, and Process Heaters – Phase 3, Rule 4702 – Internal Combustion Engines, and Rule 4703 – Stationary Gas Turbines were reviewed. Finally, U.S. EPA Final Rule for Control of Emissions of Air Pollution from Nonroad Diesel Engines and Fuel was reviewed. Tables 2-7 through 2-9 below note the NOx limits in the two air districts and U.S. EPA's diesel engine NOx limit for Tier IV Final engines. The applicable equipment sizes differ by regulation. All limits except the Tier IV Final limits are applicable to new units and retrofitted units.

Table 2-7 – Non-Emergency Internal Combustion Engines (Diesel)

Agency	Rule Adoption Date	Rule Effective Date	NOx Limit (ppmv @ 15% oxygen, dry)
BAAQMD – Rich Burn	July 2007	January 2012	56
BAAQMD – Lean Burn	July 2007	January 2012	140
SJVAPCD	September 2003	June 2007	80
U.S. EPA	May 2004	2008 - 2015	45 (0.67 g/kWh) ¹

¹ – EPA Tier IV limit is 0.67 g/kWh, 45 ppmv is assuming 40% efficiency

Table 2-8 – Boilers (Natural Gas)

Agency	Rule Adoption Date	Rule Effective Date	Boiler Capacity (MMBTU/HR)	NOx Limit (ppmv @ 3% oxygen, dry)
BAAQMD	February 1994	May 1995	> 1,750	10
			> 1,500 to < 1,750	25
			< 1,500	30
SJVAPCD	October 2008	December 2008	> 20	6

Table 2-9 – Turbines (Natural Gas)

Agency	Rule Adoption Date	Rule Effective Date	Capacity (MMBTU/HR)	Output (MW)	NOx Limit (ppmv @ 15% oxygen, dry)
BAAQMD ¹	December 2006	January 2010	5 - 50	N/A	42
			> 50 - 150	N/A	25 - 42
			> 150 - 250	N/A	15
			> 250 - 500	N/A	9
			> 500	N/A	5
SJVAPCD	September 2007	January 2012	< 35 ²	< 3	25
			> 35 - 130 ²	> 3 - 10	25
			> 130 ²	> 10	25 - 42

¹ – Currently under review

² – Non-regulatory, converted for comparison purposes only

For natural gas boilers, natural gas combined cycle gas turbines, and natural gas simple cycle gas turbines, the NOx concentration limits in other Air District regulations was higher than existing units located in SCAQMD. For diesel internal combustion engines, the NOx concentration limits in U.S. EPA Final rule—Rule for Control of Emissions of Air Pollution from Nonroad Diesel Engines and Fuel NOx concentration limits were lower than existing units located in SCAQMD.

Assessment of Pollution Control Technologies

As part of the BARCT assessment, staff conducted a technology assessment to evaluate NOx pollution control technologies for electric generating units. Staff reviewed scientific literature, vendor information, and strategies utilized in practice. The technologies are presented below and the applicability for use with various electric power-generating units is noted. In most cases, post-combustion technologies may be utilized in conjunction with pre-combustion technologies.

Pre-Combustion Technologies

Dry Low-NOx or Lean Premix Emission Combustors (Natural Gas Turbines)

Prior to combustion, gaseous fuel and compressed air are pre-mixed, minimizing localized hot spots that produce elevated combustion temperatures and therefore, less NOx is formed. Atmospheric nitrogen from the combustion air is mixed with air upstream of the combustor at deliberately fuel-lean conditions. Approximately twice as much air is supplied as is actually needed to burn the fuel. This excess air is a key to limiting NOx formation, as very lean conditions cannot produce the high temperatures that create thermal NOx. Using this technology, NOx emissions, without further controls, have been demonstrated at single digits (< 9 ppmv at 15% oxygen, on a dry basis). The technology is engineered into the combustor that becomes an intrinsic

part of the turbine design. Fuel staging or air staging is utilized to keep the flame within its operating boundaries. It is not available as a “retrofit” technology and must be designed for each turbine application.

Water or Steam Injection (Natural Gas Turbines)

Demineralized water is injected into the combustor through the fuel nozzles to lower flame temperature and reduce NO_x emissions. Water or steam provides a heat sink that lowers flame temperature. Imprecise application leads to some hot zones so NO_x is still created. NO_x levels in natural gas turbines can be lowered by 80% to 25 ppmv at 15% oxygen on a dry basis. Addition of water or steam increases mass flow through the turbine and creates a small amount of additional power. The addition of water increases carbon monoxide emissions and there is added cost to demineralize the water. Turbines using water or steam injection have increased maintenance due to erosion and wear.

Catalytic Combustion (Natural Gas Turbines)

A catalytic process is used instead of a flame to combust the natural gas. Flameless combustion lowers combustion temperature resulting in reduced NO_x formation. The overriding constraints are operating efficiency over a wide operating range of the turbine. Initial engine demonstrations have shown that catalytic combustion reduces NO_x emissions. In its first commercial installation, NO_x concentrations were lowered from approximately 20 ppmv to below 3 ppmv at 15% oxygen on a dry basis without post-combustion controls. Several turbine manufacturers are in the development stage to incorporate this technology.

Low-NO_x Burners (Natural Gas Boilers)

Controlled fuel and air mixing at the burner reduces the peak flame temperature resulting in reduced NO_x formation. Lean pre-mixed combustion gases and low turbulence flow of combustion gases combine to achieve NO_x reductions of 80 to 90%. Ultra-Low-NO_x Burners are able to reduce NO_x concentration to 5 to 7 ppmv at 3% oxygen on a dry basis. The burners are scalable for various sizes of boilers and heating units. The burners can be designed for retrofit or new installations. However, retrofits to existing boilers may require complex engineering and re-design.

Post-Combustion Technologies

Selective Catalytic Reduction (Diesel Internal Combustion Engines/Natural Gas Boilers/Natural Gas Turbines)

Selective Catalytic Reduction is the primary post-combustion technology for NO_x reduction and is widely used in turbines, boilers, and engines including stationary engines and heavy duty trucks. It is the primary control for engines that meet U.S. EPA’s Tier IV Final standards. The technology can reduce NO_x emissions by 95% or greater. In many cases the NO_x reduction is limited by the release of other pollutants (ammonia and carbon monoxide), space constraints, or reaches the practical limit of the NO_x measuring device. Nearly all electric generating units already utilize selective catalytic reduction. Further reductions could be possible by adding catalyst modules. From observations made during site visits, space is not readily available to add catalyst modules and would require construction.

Ammonia is injected into the flue gas and reacts with NO_x to form nitrogen and water. Catalysts are made from ceramic materials and active catalytic components of base metals, zeolites, or precious metals. The catalyst may be configured into plates but many new systems are configured into honeycombs to ensure uniform dispersion and reduce ammonia emissions to below 5 ppmv. The reductant, ammonia, is available as anhydrous ammonia, aqueous ammonia, or urea. Anhydrous ammonia is toxic and SCAQMD does not permit new installations of anhydrous ammonia storage tanks. Urea is an alternative but requires conversion to ammonia to be used. Most new selective catalytic reduction installations utilize aqueous ammonia in a 19% solution.

To perform optimally, the gas temperature in the control device should be between 400°F and 800°F. During start-up and shutdown, the temperature will be below optimal range, greatly reducing the effectiveness. Thus, NO_x concentration limits are generally not applicable during start-up or shutdown. Newer electric generating units reduce the low temperature periods where emissions are out of control.

The catalyst is susceptible to “poisoning” if the flue gas contains contaminants including sulfur compounds, particulates, reagent salts, or siloxanes. Poisoned catalysts require cleaning or replacement resulting in additional costs and extended periods of non-operation for the electrical power-generating equipment unit. In those cases, filtering may be used to reduce the impacts on the catalyst.

Catalytic Absorption Systems (Natural Gas Turbines)

Catalytic absorption is based on an integration of catalytic oxidation and absorption technology resulting in similar control efficiency as selective catalytic reduction without the use of ammonia. Carbon monoxide and nitrogen oxide catalytically oxidize to carbon dioxide and nitrogen dioxide, then the nitrogen dioxide molecules are absorbed onto the catalyst. The catalyst is a platinum-based substrate with a potassium carbonate coating. The catalyst appears to be very sensitive to sulfur, even the small amounts in pipeline natural gas. Initial issues regarding catalyst failures have been addressed by conducting more frequent and extensive catalyst washing. At one facility, they have determined that emission levels are best met when all three layers of catalyst are washed about every four months. During the wash process, the turbine is non-operational for about three days.

The NO_x concentration levels achieved by the various technologies assessed were consistent with the NO_x concentration levels found in existing natural gas boilers, natural gas combined cycle gas turbines, and natural gas simple cycle gas turbines located in SCAQMD. Additionally, the NO_x concentration levels from the technology assessment were consistent with the NO_x concentration levels found in diesel internal combustion engines compliant with U.S. EPA’s Final Rule for Control of Emissions of Air Pollution from Nonroad Diesel Engines and Fuel.

Initial BARCT Emission Limit and Other Considerations

The recommendation for the NO_x BARCT emission limits are established using information gathered from existing SCAQMD regulations, existing units permitted in SCAQMD, regulatory requirements for other air districts, and the technology assessment. Both retrofit and new installations are considered. Once the initial limits are established, a cost-effectiveness determination is made at that initial limit. If the initial limit is not cost-effective, an alternative

limit may be recommended. Unique circumstances are taken under consideration to distinguish alternative limits or to create provisions in the rule to address equipment that would otherwise not be cost-effective.

Diesel Internal Combustion Engines

Existing diesel internal combustion engines have been found in SCAQMD to be retrofitted to 82 ppmv NO_x at 15% oxygen on a dry basis. In other air districts, regulations require retrofit on existing engines to meet a NO_x concentration limit between 56 and 140 ppmv at 15% oxygen on a dry basis. For new diesel internal combustion engines, SCAQMD has an engine permitted at 51 ppmv NO_x at 15% oxygen on a dry basis. Stationary diesel internal combustion engines installed after 2015 must meet U.S. EPA's Regulation for Emissions from Heavy Equipment with Compression-Ignition (Diesel) Engines Tier IV Final standard of 0.67 g/kWh NO_x concentration limit (approximately 45 ppmv NO_x at 15% oxygen on a dry basis, assuming 40% efficiency). Replacing existing engines with new engines that meet the Tier IV Final standard were initially used to determine cost-effectiveness.

Table 2-10 – Initial BARCT Recommendation for Diesel Internal Combustion Engines

	Existing Units (ppmv @ 15% oxygen, dry)	Other Regulatory Requirements	Technology Assessment	Initial BARCT Recommendation
Retrofit	82 ppmv	56-140 ppmv @ 15% oxygen dry	290 -420 ppmv @ 15% oxygen dry	56-140 ppmv @ 15% oxygen dry
New Install	51 ppmv	0.67 g/kWh	0.67 g/kWh	0.67 g/kWh

Natural Gas Boilers

Both new installations and retrofits of natural gas boilers have been found in the SCAQMD that meet a 5 ppmv NO_x at 3% oxygen on a dry basis concentration limit. Other air districts require retrofit of existing boilers to meet a concentration limit of 6 ppmv NO_x at 3% oxygen on a dry basis and new boilers to meet a concentration limit of 5 ppmv NO_x at 3% oxygen on a dry basis. The technology assessment has shown that selective catalytic reduction, in conjunction with ultra-low NO_x burners can meet a limit of 5 ppmv NO_x at 3% oxygen on a dry basis. Therefore, the initial BARCT recommendation for new installations and retrofitted natural gas boilers will be 5-θ ppmv NO_x at 3% oxygen on a dry basis.

Table 2-11 – Initial BARCT Recommendation for Natural Gas Boilers

	Existing Units (ppmv @ 3% oxygen, dry)	Other Regulatory Requirements (ppmv @ 3% oxygen, dry)	Technology Assessment (ppmv @ 3% oxygen, dry)	Initial BARCT Recommendation (ppmv @ 3% oxygen, dry)
Retrofit	5	6	5	5
New Install	5	5 - 6	5	5

Natural Gas Combined Cycle Gas Turbines

In all but one case, natural gas combined cycle gas turbines at electricity generating facilities have been new installations. In the single retrofit instance, the natural gas combined cycle gas turbine was retrofitted to meet a limit of 5 ppmv NO_x at 15% oxygen on a dry basis. Otherwise, the lowest NO_x concentration limit for new installations in SCAQMD is 2 ppmv at 15% oxygen on a dry

basis. Other air districts limit NO_x emissions to between 5-25 ppmv at 15% oxygen on a dry basis for existing units and 2-25 ppmv at 15% oxygen on a dry basis for new installations. The technology assessment found that a-for natural gas combined cycle turbines, a combination of pre-combustion technology and post-combustion control can meet a concentration of 2 ppmv NO_x at 15% oxygen on a dry basis. The initial BARCT recommendation for both new installations and retrofits of natural gas combined cycle gas turbines is 2 ppmv NO_x at 15% oxygen on a dry basis.

Table 2-12 – Initial BARCT Recommendation for Natural Gas Combined Cycle Gas Turbines

	Existing Units (ppmv @ 15% oxygen, dry)	Other Regulatory Requirements (ppmv @ 15% oxygen, dry)	Technology Assessment (ppmv @ 15% oxygen, dry)	Initial BARCT Recommendation (ppmv @ 15% oxygen, dry)
Retrofit	5	5-25	2	2
New Install	2	2-25	2	2

Natural Gas Simple Cycle Gas Turbines

The lowest NO_x concentration for a retrofitted natural gas simple cycle gas turbine is 9 ppmv at 15% oxygen on a dry basis. For new installations, numerous natural gas simple cycle gas turbines have a NO_x concentration limit of 2.5 ppmv at 15% oxygen on a dry basis. Other air districts limit NO_x emissions to between 5 and 25 ppmv at 15% oxygen on a dry basis for existing units and 2.5-25 ppmv at 15% oxygen on a dry basis for new installations. The technology assessment found that a combination of pre-combustion technology and post-combustion control can meet a concentration of 2.5 ppmv NO_x at 15% oxygen on a dry basis for natural gas simple cycle gas turbines. The initial BARCT recommendation for both new installations and retrofits of natural gas simple cycle gas turbines is 2.5 ppmv NO_x at 15% oxygen on a dry basis.

Table 2-13 – Initial BARCT Recommendation for Natural Gas Simple Cycle Gas Turbines

	Existing Units (ppmv @ 15% oxygen, dry)	Other Regulatory Requirements (ppmv @ 15% oxygen, dry)	Technology Assessment (ppmv @ 15% oxygen, dry)	Initial BARCT Recommendation (ppmv @ 15% oxygen, dry)
Retrofit	9	5-25	2.5	2.5
New Install	2.5	2.5-25	2.5	2.5

In summary, the initial BARCT recommendations are presented in Table 2-14 below:

Table 2-14 – Summary of Initial BARCT Recommendation

Equipment	Initial BARCT Recommendation
Diesel Internal Combustion Engine	0.67 g/kWh @ 15% oxygen, dry
Natural Gas Boiler	5 ppmv @ 3% oxygen, dry
Natural Gas Combined Cycle Gas Turbine	2 ppmv @ 15% oxygen, dry
Natural Gas Simple Cycle Gas Turbine	2.5 ppmv @ 15% oxygen, dry

Cost-Effectiveness Analysis

Cost-effectiveness is examined for each equipment category type. Cost-effectiveness is measured in terms of control costs (dollars) per air emissions reduced (tons). If the cost per ton of emissions reduced is less than the maximum required cost-effectiveness, then the control method is considered to be cost-effective. The 2016 Air Quality Management Plan (AQMP) establishes a cost-effectiveness threshold of \$50,000 per ton of NO_x reduced.

The discounted cash flow method (DCF) is used in to determine cost-effectiveness. The DCF method calculates the present value of the control costs over the life of the equipment by adding the capital cost to the present value of all annual costs and other periodic costs over the life of the equipment. A real interest rate of four per-cent and a 25-year equipment life is used. The cost-effectiveness is determined by dividing the total present value of the control costs by the total emission reductions in tons over the same 25-year equipment life.

Baseline emissions are determined by using reported fuel consumption and the permit NO_x concentration limit corrected to 15% oxygen on a dry basis except for natural gas boilers where it is corrected to 3% oxygen on a dry basis. Proposed Amended 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities (PAR 1135) emissions are determined by using reported fuel consumption and the proposed emission limit. Emission reductions are the difference between baseline emissions and PAR 1135 emissions.

Costs for retrofitting natural gas boilers, natural gas combined cycle gas turbines, and natural gas simple cycle gas turbines were determined using U.S. EPA’s Air Pollution Control Cost Estimation Spreadsheet for Selective Catalytic Reduction. The methodology used in the spreadsheet is based on U.S. EPA Clean Air Markets Division Integrated Planning Model. Size and costs of selective catalytic reduction control equipment and operational costs are based on size, fuel burned, NO_x removal efficiency, reagent consumption rate, and catalyst costs. Fuel consumption is based on 2016 reported fuel usage. Values are reported in 2015 dollars.

Diesel Internal Combustion Engines

Replacement cost for a 2.8 MW (4,000 brake horsepower) U.S. EPA Tier 4 Final diesel internal combustion engine is approximately \$3.9 million based on a vendor quote to the electricity generating facility using the diesel internal combustion engines. No change is expected for operating costs. Infrastructure costs are included because the replacement engines are larger requiring some facility modifications. The vendor quote includes:

Engine replacement and exhaust after treatment:	\$2.1 million
Generator set refurbishment and testing:	\$0.3 million
Removal and transportation:	\$0.5 million
Infrastructure:	\$1.0 million
Total Cost:	\$3.9 million

Using the \$3.9 cost estimate for all six engines, the cost-effectiveness is provided below in Table 2-15.

Table 2-15 – Diesel Internal Combustion Engine Cost-Effectiveness

Unit	Size (BHP)	2016 Annual NOx Emissions (tons)	NOx Permit Limit (ppmv @ 15% oxygen dry)	Proposed BARCT NOx Emission Limit (ppmv @ 15% oxygen, dry)	Capital Cost (million)	Annual Emission Reductions (tons)	Cost-Effectiveness (\$/ton NOx)
ICE1	1,575	16	6.5 lbs/MWh ²	45	\$3.9	9.9	\$14,826
ICE3	1,950	5.3	6.5 lbs/MWh ²	45	\$3.9	2.7	\$52,034
ICE6	2,150	8.2	6.5 lbs/MWh ²	45	\$3.9	3.9	\$35,414
ICE5	1,500	12	6.5 lbs/MWh ²	45	\$3.9	5.6	\$24,768
ICE2	2,200	22	6.5 lbs/MWh ²	45	\$3.9	8.4	\$15,520
ICE4	3,900	5.9	51	45	\$3.9	0.7	\$224,221

Average Cost-Effectiveness: \$27,000

The average cost-effectiveness for replacing all six units is approximately \$27,000 per ton of NOx reduced. Total NOx reduced is 31.2 tons annually. The average cost-effectiveness for replacing five units and excluding the 3,900 brake horsepower engine with a 51 ppmv NOx limit is approximately \$23,000 per ton of NOx reduced. In that scenario, total NOx reduced is 30.5 tons annually.

Natural Gas Boilers

Because of the Clean Water Act's once-through-cooling provisions and business decisions by electricity generating facilities, 18 of 23 natural gas boilers are planned to be shutdown. Of those 18 natural gas boilers, all but four of them will be shutdown by January 1, 2024. Due to the shutdowns, 273 tons of NOx will be reduced annually by 2024 from natural gas boilers at electricity generating facilities. Another 57 tons of NOx will be reduced annually from the two natural gas boilers scheduled for shutdown in 2025 and the two natural gas boilers scheduled for shutdown in 2029. Three natural gas boilers are expected to be repowered to natural gas turbines or renewable power sources. However, if they are not, they will be required to meet the proposed limit. Repowering or retrofitting those three boilers will result in another 318 tons of NOx reductions annually. The last two natural gas boilers have not been in operation since 2012, but the electricity generating facility intends to keep them as low-use units.

Table 2-16 – Natural Gas Boiler Cost-Effectiveness

Unit	Input (MM/BTU/HR)	Output (MW)	2016 Annual NOx Emissions (tons)	Average Annual Capacity Factor (%)	NOx Permit Limit (ppmv @ 3% oxygen dry)	Proposed BARCT NOx Emission Limit (ppmv @ 3% oxygen, dry)	Capital Cost (millions)	Operating Cost (millions)	Annual Emission Reductions (tons)	Cost-Effectiveness (\$/ton reduced)	Annual Capacity Factor (%) at \$50,000 per ton of NOx Reduced
B18	527	44	113.6	42.6	38	5	7.5	0.8	116.3	\$6,922	5.9
B12	260	20	39.7	25.6	40	5	4.8	0.4	34.6	\$13,262	6.8
B15	492	44	177.5	29.5	82	5	5.9	0.4	167.1	\$3,149	1.9

Average Cost-Effectiveness: \$5,630

The average cost-effectiveness is approximately \$5,630 per ton of NOx reduced. Previous calculations only included natural gas fuel usage and did not include landfill gas that the boilers utilize as their primary fuel. PAR 1135 includes a low-use provision that would allow natural gas boilers to continue to operate at levels below an average annual capacity factor of 1 percent in any one year and 2.5% averaged over three consecutive years.

Natural Gas Combined Cycle Gas Turbines

Eight of 23 natural gas combined cycle gas turbines currently have NOx permit limits greater than the proposed NOx concentration limit of 2 ppmv at 15% oxygen on a dry basis. Two units are permitted at 2.5 ppmv NOx at 15% oxygen on a dry basis and the other six units are permitted between 7 - 9 ppmv NOx at 15% oxygen on a dry basis. The cost-effectiveness for natural gas combined cycle gas turbines is presented below in Table 2-17 below.

Table 2-17 – Natural Gas Combined Cycle Gas Turbine Cost-Effectiveness

Unit	Input (MMBTU/HR)	Output (MW)	2016 Annual NOx Emissions (tons)	Estimated MWh/yr	% Capacity	NOx Permit Limit (ppmv @ 15% oxygen, dry)	Capital Cost (Millions)	Operating Cost (millions)	Emission Reductions (tons)	Cost-Effectiveness (\$/ton reduced)	Annual Capacity Factor (%) at \$50,000 per ton of NOx Reduced
T-CC-24 ¹	1944	290	33	900,000	35%	2.5	\$20.1	\$1.6	6.6	\$282,898	198.0
T-CC-25 ¹	1944	290	36	1,000,000	39%	2.5	\$20.1	\$1.6	7.2	\$261,226	203.8
T-CC-22	1088	182	12.1	60,000	4%	7	\$14.8	\$1.1	7.8	\$169,744	12.8
T-CC-23	1088	182	8.9	40,000	3%	7	\$14.8	\$1.1	5.2	\$253,696	12.7
T-CC-1	442	48	4.3	35,000	8%	7.6	\$6.2	\$0.5	3.2	\$174,447	29.0
T-CC-26	350	30	0.8	6,000	2%	9	\$4.6	\$0.3	0.6	\$669,774	30.6
T-CC-27	350	60	0.5	4,000	1%	9	\$7.2	\$0.5	0.4	\$1,579,869	24.0
T-CC-28	350	60	0.5	4,000	1%	9	\$7.2	\$0.5	0.4	\$1,579,869	24.0

Average Cost-Effectiveness: > \$100,000

1 – Natural Gas Combined Cycle Gas Turbine with Associated Duct Burner

In all cases, the cost-effectiveness exceeds \$50,000 per ton of NOx reduced. For the natural gas combined cycle gas turbines permitted at 2.5 ppmv NOx at 15% oxygen on a dry basis, the cost-effectiveness threshold of \$50,000 per ton reduced is never reached, even when used at 100% annual capacity factor. Those two units will not be required to retrofit to the proposed BARCT limit. For the remaining units, a low-use provision is included in the proposed rule allowing the units to operate at current permitted levels if their annual capacity factor remains below 25% in any one year and 10% averaged over three consecutive years.

Natural Gas Simple Cycle Gas Turbines

Twenty-two of 67 natural gas simple cycle gas turbines have permitted NOx limits greater than the proposed BARCT limit of 2.5 ppmv at 15% oxygen on a dry basis. One unit is permitted at 3.5 ppmv NOx at 15% oxygen on a dry basis, 17 units are permitted at 5 ppmv NOx at 15% oxygen on a dry basis, two units are permitted at 9 ppmv NOx at 15% oxygen on a dry basis, and two units are permitted at 24 ppmv NOx at 15% oxygen on a dry basis. The natural gas simple cycle gas turbines that are permitted at NOx concentration levels above the proposed limit are used sporadically to support renewable power generation. The cost-effectiveness for natural gas simple cycle gas turbines is presented below in Table 2-18 below.

Table 2-18 – Natural Gas Simple Cycle Gas Turbine Cost-Effectiveness

Unit	Input (MMBTU/HR)	Output (MW)	2016 Annual NOx Emissions (tons)	Estimated MWh/yr	%Capacity	NOx Permit Limit (ppmv @ 15% oxygen, dry)	Capital Cost (Millions)	Operating Cost (millions)	Emission Reductions (tons)	Cost-Effectiveness (\$/ton reduced)	Annual Capacity Factor (%) at \$50,000 per ton of NOx Reduced
T-SC-15	456.5	48	0.5	1500	0.36%	3.5	\$6.2	\$0.41	0.14	\$3,679,674	26%
T-SC-68	450	46	1.2	4000	0.99%	5	\$6.1	\$0.41	0.62	\$820,407	16%
T-SC-10	450	45	1.9	4000	1.01%	5	\$6.0	\$0.39	0.97	\$513,404	10%
T-SC-30	450	45	1.5	4000	1.01%	5	\$6.0	\$0.39	0.75	\$664,064	13%
T-SC-40	450	45	1.6	4000	1.01%	5	\$6.0	\$0.39	0.81	\$613,190	12%
T-SC-13	128.8	10.5	0.0	120	0.13%	5	\$2.3	\$0.15	0.01	\$12,993,169	34%
T-SC-33	128.8	10.5	0.0	120	0.13%	5	\$2.3	\$0.15	0.02	\$10,320,468	27%
T-SC-43	128.8	10.5	0.0	120	0.13%	5	\$2.3	\$0.15	0.02	\$10,624,725	28%
T-SC-52	128.8	10.5	0.0	120	0.13%	5	\$2.3	\$0.15	0.01	\$14,756,563	39%
T-SC-66	448	47.4	2.4	8000	1.93%	5	\$6.2	\$0.41	1.20	\$426,186	16%
T-SC-67	448	47.4	8.9	40000	9.63%	5	\$6.2	\$0.42	4.45	\$116,440	22%
T-SC-18	466.8	47.4	2.0	6000	1.45%	5	\$6.2	\$0.41	1.00	\$512,207	15%
T-SC-19	466.8	47.4	1.6	5000	1.20%	5	\$6.2	\$0.41	0.81	\$636,213	15%
T-SC-21	466.8	47.4	1.1	4000	0.96%	5	\$6.2	\$0.41	0.53	\$971,264	19%
T-SC-23	466.8	47.4	1.0	4000	0.96%	5	\$6.2	\$0.41	0.51	\$1,004,867	19%
T-SC-25	466.8	47.4	2.0	5000	1.20%	5	\$6.2	\$0.41	0.99	\$519,131	13%
T-SC-57	466.8	47.4	1.5	4000	0.96%	5	\$6.2	\$0.41	0.74	\$693,129	13%
T-SC-75	470	49.6	3.6	12000	2.76%	5	\$6.4	\$0.42	1.79	\$295,758	16%
T-SC-64	298	31	0.09	270	0.10%	9	\$4.7	\$0.34	0.06	\$6,419,676	13%
T-SC-65	298	30	0.0	0		9	\$0.0	\$0.00	0.00		
T-SC-61	69.12	6	0.06	120	0.23%	24	\$1.6	\$0.12	0.05	\$2,697,954	12%
T-SC-63	69.12	6	0.13	240	0.46%	24	\$1.6	\$0.12	0.11	\$1,254,841	11%

The current average annual capacity factor is approximately 1%. A low-use provision is included in the proposed rule allowing the units to operate at current permitted levels if their annual capacity factor remains below 25% in any one year and 10% averaged over three consecutive years.

BARCT Emission Limit Recommendation

In all four categories, the technology is available to meet the Initial BARCT NO_x concentration limits. For diesel internal combustion engines, the cost-effectiveness is approximately \$27,000 per ton of NO_x reduced. In all three remaining categories, the cost-effectiveness is high because the units are used far below their capacity. If these were to operate at higher annual capacity factors, NO_x reductions would become cost-effective. To address these sporadically used electric generating units, a low-use provision is included in the rule. The provision allows low-use equipment to continue operating without retrofit provided that they do not exceed an annual capacity factor limit and that they include an annual capacity factor in their Permit to Operate. This ensures that electric generating units that increase use to the point where the cost-effectiveness threshold is reached, that they will be required to retrofit the units to meet the proposed BARCT concentration limits.

The BARCT emission limits for the proposed rule are listed below in Table 2-19.

Table 2-19 – Recommended BARCT Emission Limits

Equipment Type	NO_x (ppmv)	Ammonia (ppmv)	Oxygen Correction (% dry)
Diesel Internal Combustion Engine	45	5	3
Natural Gas Boiler	5	5	15
Natural Gas Combined Cycle Gas Turbine	2	5	15
Natural Gas Simple Cycle Gas Turbine	2.5	5	15

CHAPTER 3: SUMMARY OF PROPOSALS

INTRODUCTION

TITLE

PURPOSE (Subdivision (a))

APPLICABILITY (Subdivision (b))

DEFINITIONS (Subdivision (c))

EMISSIONS LIMITS (Subdivision (d))

MONITORING, RECORDKEEPING, AND REPORTING (Subdivision (e))

USE OF LIQUID PETROLEUM FUEL (Subdivision (f))

EXEMPTIONS (Subdivision (g))

CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS)

REQUIREMENTS DOCUMENT FOR UTILITY BOILERS

INTRODUCTION

Proposed Amended Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities (PAR 1135) establishes the following emission limits at electricity generating facilities: NO_x and ammonia emission limits for boilers and gas turbines, and NO_x, ammonia, carbon monoxide, volatile organic compounds, and particulate matter for internal combustion engines located on Santa Catalina Island. Additionally, PAR 1135 establishes provisions for monitoring, reporting, and recordkeeping, and establishes exemptions from specific provisions.

TITLE

The title for Rule 1135 is changed from “Emissions of Oxides of Nitrogen from Electric Power Generating Systems” to “Emissions of Oxides of Nitrogen from Electricity Generating Facilities”; the term “electric power generating system” is replaced with “electricity generating facilities” to reflect changes in definitions in the proposed amended rule.

PURPOSE (Subdivision (a))

Purpose (subdivision (a)) is added to PAR 1135 to be consistent with the structure of current SCAQMD rules. The purpose of PAR 1135 is to reduce emissions of oxides of nitrogen from electric generating units (diesel internal combustion engines located at Santa Catalina Island, boilers, combined cycle turbines, and simple cycle turbines) at electricity generating facilities.

APPLICABILITY (Subdivision (b))

While there is no specific language excluding RECLAIM facilities from current Rule 1135, only one facility is currently subject to Rule 1135. Rule 2001 – Allocations of Oxides of Nitrogen (NO_x) and Oxides of Sulfur (SO_x) allowed the municipal utilities the option to enter RECLAIM. Current Rule 1135 applies to electric power generating systems and establishes system-wide NO_x emission limits; PAR 1135 will apply to electric generating units at electricity generating facilities. Electric power generating systems consists of boilers, turbines, other advanced combustion resources, and alternative equipment that are capable of producing power and owned by or under contract to sell power to an electric utility. PAR 1135 no longer uses the term “electric power generating system” and now refers to “electric generating units,” including diesel internal combustion engines located on Santa Catalina Island, boilers, combined cycle gas turbines, and simple gas-cycle gas turbines at electricity generating facilities. An electricity generating facility is an investor-owned electric utility, publicly owned electric utility, or a facility with 50 megawatts or more of combined generation capacity. The rule will not apply to units located at landfills, petroleum refineries, or publicly owned treatment works. NO_x generating equipment located at petroleum refineries and refinery associated facilities will be subject to forthcoming Proposed Rule 1109.1 – Refinery Equipment. Equipment at landfills and publicly owned treatment works will be subject to equipment specific regulations.

DEFINITIONS (Subdivision (c))

PAR 1135 adds and modifies definition to clarify and explain key concepts and removes obsolete definitions. Please refer to PAR 1135 for each definition.

Proposed Deleted Definitions:	<p>Advanced Combustion Resource Alternative Resource Approved Alternative or Advanced Combustion Resource Alternative Resource or Advanced Combustion Resource Breakdown Cogeneration Facility Displace District-Wide Daily Limits Electric Power Generating System Replacement Unit Start-Up or Shutdown Useful Thermal Energy</p>
Proposed Modified Definitions:	<p>Boiler Daily Force Majeure Natural Gas Curtailment NOx Emissions</p>
Proposed Added Definitions:	<p>Annual Capacity Factor Cogeneration Turbine Combined Cycle Gas Turbine Duct Burner Electric Generating Unit Electricity Generating Facility Former RECLAIM NOx Source Internal Combustion Engine Investor-Owned Electric Utility Landfill Non-RECLAIM NOx Source Petroleum Refinery Publicly Owned Electric Utility Publicly Owned Treatment Works RECLAIM NOx Source SCAQMD-Wide Daily Limits Shutdown Simple Cycle Gas Turbine Start-uUp Tuning</p>

EMISSIONS LIMITS (Subdivision (d))

Throughout subdivision (d), due to the deletion of the term “electric power generating system,” any reference to “electric power generating system” was changed to “electric generating unit” or “electricity generating facility.”

The emissions limits in subdivision (d) will be applicable to all electricity generating facilities, including RECLAIM electricity generating facilities. PAR 1135 includes a provision which states RECLAIM facilities will still be applicable to the requirements of PAR 1135 despite Rule 2001 subdivision (j) – Rule Applicability and Table 1: Existing Rules Not Applicable to RECLAIM Facilities for Requirements Pertaining to NO_x Emissions exempting them from Rule 1135 NO_x emissions requirements. Staff is working on amendments to Rule 2001 to specify that NO_x RECLAIM facilities are required to comply with all NO_x provisions in rules contained in Table 1 that are adopted or amended after Proposed Amended Rule 2001 is adopted.

The emission limits in Tables 1 and 2 of PAR 1135 are based on the BARCT assessment presented in Chapter 2 – BARCT Assessment.

PAR 1135, Table 1: Emissions Limits for Boilers and Gas Turbines

Equipment Type	NO _x ¹ (ppmv)	Ammonia (ppmv)	Oxygen Correction (%, dry)
Boiler	5	5	3
Combined Cycle Gas Turbine and Associated Duct Burner	2	5	15
Simple Cycle Gas Turbine	2.5	5	15

¹ – The NO_x emission limits in Table 1 shall not apply during start-up, shutdown, and tuning.

PAR 1135, Table 2: Emissions Limits for Diesel Internal Combustion Engines Located on Santa Catalina Island

NO _x ^{1,4} (ppmv) ^{1,4}	Ammonia ¹ (ppmv) ¹	Carbon Monoxide ² (ppmv) ^{2,4}	Volatile Organic Compounds ³ (ppmv) ^{3,4}	Particulate Matter (lbs/mmbtu)
45	5	250	30	0.0076

¹ – Corrected to 15% oxygen on a dry basis and averaged over a 60 minute rolling average

² – Corrected to 15% oxygen on a dry basis and averaged over 15 minutes

³ – Measured as carbon, corrected to 15% oxygen on a dry basis, and averaged over sampling time required by the test method

⁴ – The NO_x, carbon monoxide, and volatile organic compounds emissions limits in Table 2 shall not apply during start-up and shutdown, and tuning.

To help achieve the emission reduction goals of the 2016 AQMP and AB 617 requirement of BARCT implementation, PAR 1135 subparagraphs (d)(1) and (d)(2) set the compliance date for electric generating units as January 1, 2024.

Subparagraph (d)(1)(A) requires the emissions limits of boilers and turbines that are installed after [Date of Adoption] to be averaged over a 60 minute rolling average. Boilers and turbines that have

been installed or issued permits to construct before [Date of Adoption] shall retain their averaging times on their current permit or be averaged over a 60 minute rolling average. The averaging times for these units were evaluated during the permitting process and should be maintained. For diesel internal combustion engines, Table 2 specifies that NOx and ammonia limits are averaged over a 60 minute rolling average and, carbon monoxide is averaged over 15 minutes corrected to 15% oxygen on a dry basis, and volatile organic compounds are averaged according to the test method. For ~~electric generating units~~ internal combustion engines installed before [Date of Adoption], subparagraphs ~~(d)(1)(B) and~~ (d)(2)(B) allow the units to retain their current averaging time. The averaging times for these units were evaluated during the permitting process and should be maintained.

Subparagraph (d)(3) states that requirements for start-up, shutdown, and tuning periods will be put in each electric generating unit's permit;— each electric generating unit must have these requirements incorporated into their permits by January 1, 2024. The requirements will specify duration, mass emissions, and number of start-ups, shutdowns, and, if applicable, tunings. Requirements for start-up, shutdown, and tuning of existing electric generating units are currently in the permits for that equipment. Additionally, start-up, shutdown, and tuning are unique to each unit and evaluated during the permitting process. Therefore, PAR 1135 does not specify specific start-up, shutdown, and tuning requirements, but instead states that the requirements will be put in each electric generating unit's permit.

Under paragraph (d)(2)(A), the compliance date for diesel internal combustion engines located on Santa Catalina Island is January 1, 2024. However, paragraph (d)(4) includes an alternative compliance approach in order to accommodate potential plans for less emissive electricity generating equipment than diesel internal combustion engines. In 2016, the diesel internal combustion engines on Santa Catalina Island emitted 69 tons of NOx. Assuming the same throughput, but with diesel internal combustion engines with 45 ppmv NOx emission limits, the annual NOx emissions would be 39 tons. The alternative approach was designed to reduce NOx emissions by 67% from diesel internal combustion engines, and therefore under this approach the operator must reduce emissions to 13 tons of NOx annually. By January 1, 2022, the owner or operator of diesel internal combustion engines located on Santa Catalina Island must submit a notification that they are electing the alternative compliance approach. The notification must include a description of the proposed technologies, schedule of permit submittals, and timeframes for ordering and installing equipment. Additionally, the facility must take a permit condition limiting their total annual NOx emissions to 13 tons.

To further incentivize lower emitting electricity generating technologies, paragraph (d)(5) allows Santa Catalina Island an extension of up to three years for compliance with Table 2 or the alternative compliance approach as the facility. The extension is allowed for both compliance approaches as the facility may initially pursue lower emitting technologies later to discover that hurdles to permitting, land acquisition, or some other extenuating circumstance prevents the implementation of the lower emitting technology. The extension includes a mitigation fee of \$100,000/year. The mitigation fee will be used to fund studies and projects to reduce criteria pollutants and toxic air contaminant emissions. The amount for the mitigation fee is approximately the amount they would have had to pay to go through the variance process, including excess emissions fees, notification fees, and other procedural fees. In order to qualify for the extension,

the facility must reduce some NOx upfront. If the facility wants an extension for installing diesel internal combustion engines, two diesel internal combustion engines must be retrofitted or repowered to 45 ppmv NOx at 15% oxygen on a dry basis by January 1, 2023. If requesting an extension for the alternative compliance approach, Santa Catalina Island must reduce actual mass emissions to 50 tons of NOx for compliance year 2022 and 40 tons of NOx for compliance year 2023. The time extension must be submitted at least one year before the compliance deadlines and must include: which units need a time extension, the reason an extension is needed, and the progress to date of the project. To be approved for the time extension, the Executive Officer will determine if the facility followed the proper procedure for submitting a request for time extension and if the time extension was needed due to an extenuating circumstance. Examples of extenuating circumstances would include engineering designs, construction plans, land acquisition contracts, permit applications, and purchase orders that impact scheduling.

Current Rule 1135 paragraphs (d)(1) and (d)(2) have been deleted as the requirements are no longer applicable. Current Rule 1135 paragraph (d)(3), PAR 1135 paragraph (d)(6), maintains only provisions applicable to the City of Glendale. The District-wide daily limits on emissions rate and emissions cap and the annual emissions limits for Southern California Edison, Los Angeles Department of Water and Power, the City of Burbank, and the City of Pasadena, became obsolete once these facilities entered into RECLAIM. Since the City of Glendale is still a Rule 1135 facility, their current SCAQMD-wide daily limits on emissions rates and emissions cap and annual emissions limits will be maintained and references to older limits will be removed. The SCAQMD-wide daily limits on emissions rates and emissions caps and annual emissions limits need to be maintained for the City of Glendale in the interim period until the emissions limitations in paragraph (d)(1) ~~is~~ are achieved.

Paragraph (d)(7) requires that by July 1, 2022 facilities must submit applications to reconcile their permits with Rule 1135. As electricity generating facilities transition out of RECLAIM to Rule 1135, their permits will need to be revised to remove references to RECLAIM rules and include references to Rule 1135.

Several additional obsolete provisions will be deleted. Current Rule 1135 subparagraphs (d)(6) will be removed since those dates have passed. Current Rule 1135 subparagraph (d)(8), the provision stating that a violation of any unit specific NOx emission limit in a permit or a compliance plan constitutes a violation of Rule 1135 will be removed since permits and compliance plans are enforceable and it would be redundant to also make it a violation of the Rule.

Compliance Plans

Current Rule 1135 subdivision (d) – Compliance Plans, will be deleted, as those dates have passed and Compliance Plans will no longer be necessary with the emissions limits in PAR 1135 subdivision (d).

MONITORING, RECORDKEEPING, AND REPORTING (Subdivision (e))

Staff is currently working on adopting Rule 113 – Monitoring, Reporting, and Recordkeeping (MRR) Requirements for NOx and SOx Sources. Once Rule 113 is adopted, all Rule 1135 equipment will transition to Rule 113 for MRR. For the interim period, the intention of the PAR

1135 MRR is to maintain current MRR for all facilities and minimize the RECLAIM reporting requirements.

All the provisions in the current Rule 1135 subdivision (e) will be deleted. These provisions are no longer necessary because of the 125 units under PAR 1135, there are only three units that are required to follow the current Rule 1135 monitoring requirements. In addition to following current Rule 1135, these three units also conduct monitoring according to current Rule 218 – Continuous Emission Monitoring. Deleting Current Rule 1135 monitoring requirements will not affect these three units.

~~Paragraph (e)(1) requires that facilities maintain all their monitoring, recordkeeping, and reporting documents for five years and make it available to SCAQMD upon request.~~

Paragraph (e)(~~1~~2) applies to current ~~RECLAIM~~ RECLAIM NO_x sources and these sources will continue complying with SCAQMD Rule 2012 to demonstrate compliance with the NO_x emissions limits.

Paragraph (e)(~~2~~3) applies to former RECLAIM facilities. To demonstrate compliance with the NO_x emissions limits, these facilities will be required to comply with SCAQMD Rule 2012 with the exception of the following provisions that reference reporting requirements or that do not apply to electric power-generating units:

- (c)(3) – facility permit holder of a major NO_x source
- (c)(4) – Super Compliant Facilities
- (c)(5) – facility Permit holder of a facility which is provisionally approved for NO_x Super Compliant status
- (c)(6) – after final approval of Super Compliant status
- (c)(7) – facility designated as a NO_x Super Compliant Facility
- (c)(8) – super Compliant Facility exceeds its adjusted allocations
- (d)(2)(B) – install, maintain and operate a modem
- (d)(2)(C) – equipment-specific emission rate or concentration limit
- (d)(2)(D) – monitor one or more measured variables as specified in Appendix A
- (d)(2)(E) – comply with all applicable provisions of subdivision (f)
- (e) – NO_x Process Unit
- (g)(5) – system is inadequate to accurately determine mass emissions
- (g)(6) – sharing of totalizing fuel meters
- (g)(7) – equipment which is exempt from permit requirements pursuant to Rule 219 - Equipment Not Requiring A Written Permit Pursuant to Regulation II
- (g)(8) – rule 2012 and Appendix A
- (h)(1) – facilities with existing CEMS and fuel meters as of October 15, 1993
- (h)(2) – interim emission reports
- (h)(4) – installation of all required or elected monitoring and reporting systems
- (h)(5) – existing or new facility which elects to enter RECLAIM or a facility which is required to enter RECLAIM
- (h)(6) – new major NO_x source at an existing facility
- (i) – Recordkeeping

- (k) – Exemption
- (l) – Appeals
- Reported Data and Transmitting/Reporting Frequency requirements from Appendix A – “Protocol for Monitoring, Reporting and Recordkeeping for Oxides of Nitrogen (NOx) Emissions”

Paragraph (e)(34) applies to non-RECLAIM facilities. To demonstrate compliance with the NOx emissions limits, these facilities have the option to comply with 40 CFR Part 75 or Rule ~~2012-218~~ – ~~Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Nitrogen (NOx) Emissions~~ Continuous Emission Monitoring. If opting to comply with 40 CFR Part 75, the facility must calculate NOx in ppmv pursuant to Rule 218.

Paragraph (e)(45) applies to the City of Glendale. To demonstrate compliance with the SCAQMD-wide daily limits on emissions rates and emissions caps and annual emissions limits, the City of Glendale must calculate these NOx emissions in accordance with their approved CEMS plan.

Paragraph (e)(56) applies to the diesel internal combustion engines located on Santa Catalina Island. To demonstrate compliance with the carbon monoxide and volatile organic compound emissions limits, the facility must comply with Rule 1110.2 – Emissions from Gaseous- and Liquid-Fueled Engines subdivisions (f) – Monitoring, Testing, Recordkeeping and Reporting and (g) – Test Methods. To demonstrate compliance with the particulate matter emission limit, the facility must conduct yearly source tests according to SCAQMD Method 5.1 – Determination of Particulate Matter Emissions from Stationary Sources Using a Wet Impingement Train or SCAQMD Method 5.2 – Determination of Particulate Matter Emissions from Stationary Sources using Heated Probe and Filter. Yearly is defined as a period of twelve consecutive months determined on a rolling basis with a new twelve month period beginning on the first day of each calendar month.

Paragraph (e)(76) applies to electric generating units with catalytic control devices. To demonstrate compliance with the ammonia emission limit, subparagraph (e)(6)(A) requires facilities to conduct source testing according to SCAQMD Method 207.1 – Determination of Ammonia Emissions from Stationary Sources. Source testing will be quarterly for the first twelve months of operation and then annually thereafter if four consecutive quarterly source tests determines that the unit is in compliance with the ammonia limit. If there is a failed annual test, then the facility must conduct quarterly source tests until four consecutive tests pass before resuming annual source tests. In lieu of ammonia source testing, subparagraph (6)(B) allows facilities to utilize ammonia CEMS certified under an approved SCAQMD protocol. At this time, SCAQMD is in the process of finding a host site for an ammonia CEMS demonstration project. Upon successful demonstration, SCAQMD will develop an ammonia CEMS protocol. Once an ammonia CEMS protocol is developed then SCAQMD intends to require ammonia CEMS instead of source testing to demonstrate compliance with the ammonia limits. At this time, an ammonia CEMS is approximately \$60,000. The provision that allows for ammonia CEMS instead of source testing allows facilities to transition to ammonia CEMS once a protocol is ready, but is not specifically required by Rule 1135.

Paragraph (e)(7) requires that former RECLAIM NO_x sources and non-RECLAIM NO_x sources facilities maintain all their monitoring, recordkeeping, and reporting documents for five years and make it available to SCAQMD upon request. The exception is data gathered and computed for 15 minute intervals or less, those records need to be maintained for a minimum of 48 hours.

In addition to demonstrating compliance with the emissions limits of the rule, paragraph (e)(8) requires ~~all facilities~~ former RECLAIM NO_x sources and non-RECLAIM NO_x sources to maintain an operating log for each electricity generating unit. The log must include: time and duration of start-ups and shutdowns; total hours of operation; quantity of fuel; cumulative hours of operation to date for the calendar year; megawatt hours of electricity produced; and net megawatt hours electricity produced.

USE OF LIQUID PETROLEUM FUEL (Subdivision (f))

Throughout subdivision (f), due to the deletion of the term electric power generating system, any reference to electric power generating system was changed to electric ~~power~~-generating unit or electricity generating facility. Also, to encompass all electric ~~power~~-generating units, the term boiler is replaced with the term electric ~~power~~-generating unit.

Current Rule 1135 paragraph (f)(1) allows the use of liquid petroleum fuel and an exemption from the District-wide daily limits on emissions rate and emissions cap during force majeure natural gas curtailment. Since District-wide daily limits on emissions rate and emissions cap have been removed for almost all facilities, PAR 1135 paragraph (f)(1) replaces the term with emissions limits from paragraph (d)(1). The requirement in current Rule 1135 subparagraph (f)(1)(B) will be deleted since all units will have to comply with the emissions limits specified in paragraph (d)(1). Current Rule 1135 subparagraph (f)(1)(D) will be deleted because it is a duplicative requirement to current Rule 1135 subparagraph (f)(1)(C) (proposed to be subparagraph (f)(1)(B)). If an electricity generating facility can meet the requirements of subparagraph (f)(1)(C), it would be able to meet the requirements of subparagraph (f)(1)(D); alternatively, if an electricity generating facility cannot meet the requirements of subparagraph (f)(1)(C), it would not be able to meet the requirements of subparagraph (f)(1)(D).

PAR 1135 subparagraph (f)(1)(B) states that during force majeure natural gas curtailment and when burning liquid petroleum fuel exclusively, the NO_x emission limit for an electric ~~power~~ generating unit must comply with the limit in the permit for that unit. Not all permits for electric ~~power~~-generating units have a NO_x emission limit when exclusively burning liquid petroleum fuel. But, the limit is unique to each unit and evaluated during the permitting process. Therefore, PAR 1135 does not specify a NO_x emission limit for liquid petroleum fuel and instead states that this emissions limit in the permit must be complied with.

PAR 1135 paragraph (f)(2) increases the hours allowed for readiness testing from 24 hours in a calendar year to sixty minutes ~~per day on one day~~ per week; weekly readiness testing is necessary to assure reliability of the oil firing units in case of emergencies. To be consistent with subparagraph (f)(1)(B), subparagraph (f)(2)(B) states that during readiness testing and when burning liquid petroleum fuel exclusively, the NO_x emission limit for an electric ~~power~~-generating unit must comply with the limit in the permit for that unit. Several requirements are being added to readiness testing. The first added requirement, subparagraph (f)(2)(C), states that readiness testing can only occur once the equipment has reached the emissions limitation in paragraph (d)(1)

while running on natural gas and must start within 60 minutes of achieving that emissions limitation. For clarification purposes, subparagraph (f)(2)(D) defines readiness testing as the time from when the equipment is switched from natural gas to liquid petroleum fuel to the time the equipment is switched back to natural gas.

PAR 1135 will add a provision, paragraph (f)(3), that allows liquid petroleum fuel to be used during source testing, initial certification of Continuous Emissions Monitoring Systems (CEMS), and semi-annual Relative Accuracy Test Audits (RATAs). The RATA tests must be conducted at the same time as weekly readiness testing.

Municipal Bubble Options

The subdivision regarding Municipal Bubble Options, Current Rule 1135 subdivision (g), has been removed because PAR 1135 will establish emissions limits for each unit and will no longer have limits for electric generating systems.

EXEMPTIONS (Subdivision (g))

All of the current Rule 1135 exemptions will be removed. These exemptions were based on old technology and are no longer necessary.

Rule 1135 will be amended to include several exemptions. The first exemption, subparagraph (g)(1), exempts existing combined cycle gas turbines at 2.5 ppmv NOx concentration or less averaged over 60 minutes at 15% oxygen on a dry basis from the emissions limitations in paragraph (d)(1), with the condition that the units keep their NOx and ammonia limits, start-up, shutdown, and tuning requirements, and averaging times on the current permit. According to the BARCT assessment, it is not cost-effective for combined cycle gas turbines at 2.5 ppmv NOx at 15% oxygen on a dry basis to reduce their limits to 2 ppmv at 15% oxygen on a dry basis.

Paragraph (g)(2) exempts once-through-cooling electric generating units that are subject to the Clean Water Act Section 316(b) from the emissions limitations in paragraph (d)(1) under the conditions that the units keep their NOx and ammonia limits, start-up, shutdown, and tuning requirements, and averaging times on the current permit ~~and~~ Additionally, the units must comply with their current compliance dates established pursuant to Table 1 of Section 2(B) of the State Water Resources Control Board's Statewide Water Quality Control Policy on the Use of Coastal Estuarine Waters for Power Plant Cooling (Once-Through-Cooling Policy) implementing Section 316(b) of the Clean Water Act. Notifications of shutdown and retirements dates must be submitted for each once-through-cooling electric generating unit by January 1, 2023. This provision coordinates the compliance date for PAR 1135 NOx concentration limit and the compliance dates in Clean Water Act Section 316(b). Additionally, the provision avoids stranded assets of adding pollution controls for an interim period of time. If the once-through-cooling electric generating unit is granted an extension by the State Water Resources Control Board, the facility must notify SCAQMD of the extension within three months. This extension is not applicable to facilities that have utilized the Modeling and Offset Exemptions in Rule 1304 (a)(2) and the associated replacement electric generating unit is in operation as the emission credits transferred to the replacement unit are no longer available.

The BARCT assessment determined that it is not cost-effective for diesel internal combustion engines at 51 ppmv NO_x at 15% oxygen on a dry basis to reduce their limits to 45 ppmv at 15% oxygen on a dry basis. Therefore, PAR 1135 paragraph (g)(3) exempts existing diesel internal combustion engines at 51 ppmv NO_x averaged over 60 minutes at 15% oxygen on a dry basis from the emissions limitations in paragraph (d)(2), with the condition that the units keep their NO_x, ammonia, carbon monoxide, volatile organic compounds, and particulate matter limits, start-up and ~~shutdown, and tuning~~ requirements, and averaging times on the current permit.

To address low-use electrical power generating units, a low-use provision, paragraph (g)(4) is included in PAR 1135. The provision allows low-use equipment to continue operating without retrofit provided that they: do not exceed annual capacity factor limits; include annual capacity factor limits in their permit; and keep the NO_x and ammonia limits, start-up, shutdown, and tuning requirements, and averaging times on the current permit. The annual capacity factor, paragraph (c)(1), is defined as the ratio between the actual annual heat input and the annual maximum heat input if operated continuously over one year excluding usage during an Emergency Phase of the California Energy Commission Energy Emergency Response Plan or a Governor-declared State of Emergency or Energy Emergency. The annual capacity factor limits for gas turbines in subparagraph (g)(4)(A) is less than twenty-five percent in one calendar year and less than ten percent averaged over three years. For boilers, the low-use provision in subparagraph (g)(4)(B) establishes the annual capacity factor limit as less than two and one half percent in one calendar year and less than one percent averaged over three years. In order to obtain the low-use exemption, subparagraph (g)(4)(C) requires that an application for the low-use exemption be submitted by July 1, 2022. Subparagraph (g)(4)(D) requires ~~that~~ annual capacity factor to be determined annually and submitted to the Executive Officer no later than March 1 following the reporting year. If a unit exceeds the annual capacity factor, clause (g)(4)(E)(i) states the owner or operator is subject to a notice of violation for each year of exceedance and for each annual and/or three year exceedance. Subclause (g)(4)(E)(ii)(C) requires that after two years of the date of reported exceedance, the unit must come into compliance with the emissions limits in paragraph (d)(1). There are also interim milestone requirements in subclauses (g)(4)(E)(ii)(A) and (g)(4)(E)(ii)(B): submitting a permit application within six months from the date of reported exceedance and a CEMS plan within six months from the date of permit application submittal.

The last exemption, paragraph (g)(5) exempts internal combustion engines on Santa Catalina Island from the requirements in subdivision (f) – Use of Liquid Petroleum Fuel.

CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS) REQUIREMENTS DOCUMENT FOR ELECTRIC POWER GENERATING UNITS

The document specifying requirements under Rule 1135 for continuous emission monitoring systems has been removed. The MRR requirements have been updated and no longer reference the document.

CHAPTER 4: IMPACT ASSESSMENT

POTENTIALLY IMPACTED FACILITIES

EMISSIONS INVENTORY AND EMISSION REDUCTIONS

INCREMENTAL COST-EFFECTIVENESS

RULE ADOPTION RELATIVE TO COST-EFFECTIVENESS

SOCIOECONOMIC ASSESSMENT

CALIFORNIA ENVIRONMENTAL QUALITY ACT

**DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY CODE
SECTION 40727**

COMPARATIVE ANALYSIS

POTENTIALLY IMPACTED FACILITIES

There are 31 electricity generating facilities that are potentially impacted by Proposed Amended Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities (PAR 1135). Of these 31 facilities, 26 are currently in the NO_x RECLAIM program. The remaining five facilities are not in the RECLAIM program; one is currently subject to SCAQMD Rule 1134 – Emissions of Oxides of Nitrogen from Stationary Gas Turbines and Rule 1135 – Emissions of Oxides of Nitrogen from Electric Power Generating Systems, and four are not subject to Rule 1134 or 1135 because of current applicability requirement in those rules.

There are approximately ~~123~~122 electric generating units at these 31 electricity generating facilities: 61 are at the proposed emissions limits, 5 are exempt, 27 qualify for the low-use provisions, and 21 are schedule for shutdown. The remaining 9 electric generating units at 3 facilities will need to be replaced, repowered, or retrofitted to come into compliance with PAR 1135.

Of the five exempt units, two are natural gas combined cycle turbines with associated duct burners and one is a diesel internal combustion engine located on Santa Catalina Island. The natural gas combined cycle gas turbines with associated duct burners are exempt from emissions limits in Table 1 because of the exemption in paragraph (g)(1). The diesel internal combustion engine located on Santa Catalina Island is exempt from the emissions limits in Table 2 because of the exemption in paragraph (g)(3). Table 4-1 summarizes equipment exempt due to paragraphs (g)(1) and (g)(3).

Table 4-1: Units Exempt Due to PAR 1135 Paragraphs (g)(1) and (g)(3)

Facility	Equipment	Current NO _x Permit Limit (ppmv at 15% oxygen, dry)
Southern California Edison (Pebbly Beach)	ICE 12	51
LADWP Valley	Combined cycle turbine 6 and duct burner 6	2.5
LADWP Valley	Combined cycle turbine 7 and duct burner 7	2.5

Assuming similar usage as in 2016, 27 electric generating units would qualify for the low-use provisions. At this time, staff is aware of 12 electric generating units that will be retrofitting to come into compliance with PAR 1135 emissions limits. Staff believes the remaining 15 will be using the low-use provisions, as summarized in Table 4-2.

Table 4-2: Units Potentially Utilizing Low-Use Provisions in Paragraph (g)(4)

Facility	Equipment	Current NO_x Permit Limit (ppmv at 15% oxygen, dry)
Vernon	Simple cycle turbine 6	24
Vernon	Simple cycle turbine 7	24
Glendale DWP	Combined cycle turbine 8A	9
Glendale DWP	Combined cycle turbine 8B/C	9
Glendale DWP	Combined cycle turbine 8B/C	9
Burbank DWP	Simple cycle turbine 1	5
Glendale DWP	Simple cycle turbine 9	5
Riverside DWP	Simple cycle turbine 1	5
Riverside DWP	Simple cycle turbine 2	5
Riverside DWP	Simple cycle turbine 3	5
Riverside DWP	Simple cycle turbine 4	5
Wildflower/Indigo	Simple cycle turbine 1	5
Wildflower/Indigo	Simple cycle turbine 2	5
Wildflower/Indigo	Simple cycle turbine 3	5
City of Colton	Simple cycle turbine 1	3.5

EMISSION INVENTORY AND EMISSION REDUCTIONS

The original NO_x emission inventory for electricity generating facilities was 25.6 tons per day in 1986. After the adoption of Rule 1135 and Rule 2009 – Compliance Plan for Power Producing Facilities, the NO_x inventory declined to under 10 tons NO_x per day. With a greater reliance on renewable power sources and further replacement of equipment, the emission inventory fell to 3.5 tons NO_x per day in 2016.

Table 4-23 – NO_x Emission Inventory and MWh Capacity

Equipment Type	2016 NO _x Emission Inventory (tons per day)	MWh Capacity
Diesel Internal Combustion Engines	0.2	9
Boilers	1.9	5,355
Combined Cycle Turbine	1.0	6,082
Simple Cycle Turbine	0.4	4,458

Most of the emissions from combined cycle turbines and simple cycle turbines come from units that meet the proposed BARCT limits. Only 23 tons per year of NO_x are emitted from turbines that do not meet the proposed BARCT limits.

Table 4-34 – NO_x Emission Inventory from BARCT and Non-BARCT Equipment

Equipment Type	2016 NO _x Emission Inventory (tons per day)	2016 NO _x Emissions from BARCT Equipment (tons per day)	2016 NO _x Emissions from Equipment Not Meeting BARCT (tons per day)
Diesel Internal Combustion Engines	0.2	0.0	0.2
Boilers	1.9	0.2	1.7
Combined Cycle Turbine	1.0	0.98	0.12
Simple Cycle Turbine	0.4	0.43	0.01

After the implementation of the BARCT limits and the Clean Water Act once-through-cooling provision, ~~1.91.7~~ tons per day of NO_x emission reductions will be realized.

Table 4-45 – NO_x Emission Reductions

Equipment Type	2016 NO_x Emission Inventory (tons per year)	NO_x Emissions from BARCT Equipment (tons per year)	<u>NO_x Emissions from non-BARCT Equipment (tons per year)</u>	2016 NO_x Emissions Reductions (tons per year)
Diesel Internal Combustion Engines	0.2	0.1	<u>0.0</u>	0.1
Boilers	1.9	0.1	<u>0.0</u>	1.8 <u>1.6</u> ¹
Combined Cycle Turbine	1.0	0.9 ¹	<u>0.2</u>	< 0.1
Simple Cycle Turbine	0.4	0.4 ¹	<u>0.1</u>	0.0
Total	3.5	1.5 ⁺	<u>0.3</u>	1.97 ⁺

¹ – Boilers will either shutdown or repower to turbines, therefore some boiler emissions will transfer to turbine emissions as they repower ~~Totals do not add correctly due to rounding~~

The use of ammonia in the selective catalytic reduction (SCR) process results in an increase of particulate matter emissions. There are 11 low-use turbines that already utilize SCR but will change catalysts and increase their ammonia usage by an estimated 27% to meet the proposed emissions limits. As these turbines are used rather infrequently, the particulate matter increase is 818.2 pounds annually or 0.001 tons per day. The three boilers are used considerably more and do not currently utilize SCR. The particulate increase from incorporating SCR into their process is expected to increase particulate matter emissions by 8,971.4 pounds annually or 0.01 tons per day.

INCREMENTAL COST-EFFECTIVENESS

Health and Safety Code section 40920.6 requires an incremental cost-effectiveness analysis for Best Available Retrofit Control Technology (BARCT) rules or emission reduction strategies when there is more than one control option which would achieve the emission reduction objective of the proposed amendments relative to ozone, carbon monoxide, sulphur oxides, oxides of nitrogen, and their precursors. Incremental cost-effectiveness is the difference in the dollar costs divided by the difference in the emission reduction potentials between each progressively more stringent potential control option as compared to the next less expensive control option.

Incremental cost-effectiveness is calculated as follows:

$$\text{Incremental cost-effectiveness} = (C_{\text{alt}} - C_{\text{proposed}}) / (E_{\text{alt}} - E_{\text{proposed}})$$

Where:

- C_{proposed} is the present worth value of the proposed control option;
- E_{proposed} are the emission reductions of the proposed control option;
- C_{alt} is the present worth value of the alternative control option; and
- E_{alt} are the emission reductions of the alternative control option

Diesel Internal Combustion Engines

PAR 1135 paragraph (g)(3) exempts diesel internal combustion engines meeting 51 ppmv NOx at 15% oxygen on a dry basis from the proposed NOx limit of 45 ppmv at 15% oxygen on a dry basis. The progressively more stringent potential control option would be to remove the exemption and require all engines to meet the 45 ppmv at 15% oxygen on a dry basis NOx limit. The present worth value of the proposed control option is \$19,500,000 and the emission reductions of the proposed control option are 762.5 tons over the 25 year life of the equipment. The present worth value of the alternative control option is \$23,400,000 and the emission reductions of the alternative control option is 780 tons. The incremental cost-effectiveness for removing the exemption for diesel internal combustion engines is \$222,900 per ton of NOx reduced as calculated below.

$$\text{Incremental cost-effectiveness} = (\$23,400,000 - \$19,500,000) / (780 - 762.5) = \$222,900 \text{ per ton of NOx reduced}$$

Natural Gas Boilers

Removing subparagraph (g)(4)(B), the provision for low-use boilers allowing boilers operating below one percent annual capacity factor, would require boilers to install and operate SCR. Under the proposed rule, a low-use boiler could apply for a permit restriction at a cost of \$24,119. This would result in no emission reductions. Under the alternative scenario, the boilers would be retrofitted at present worth value of \$16,788,600 and realize 242.5 tons of NOx reductions over 25 years. The incremental cost-effectiveness for removing the low-use provisions for natural gas boilers is \$759,400 per ton of NOx reduced as calculated below.

$$\text{Incremental cost-effectiveness} = (\$16,788,600 - \$72,400) / (242.5 - 0) = \$68,900 \text{ per ton of NOx reduced}$$

Natural Gas Combined Cycle Gas Turbines

Paragraph (g)(1) exempts natural gas combined cycle gas turbines meeting 2.5 ppmv NOx at 15% oxygen on a dry basis from the proposed NOx limit of 2 ppmv at 15% oxygen on a dry basis. The progressively more stringent potential control option would be to remove the exemption and require all natural gas combined cycle gas turbines to meet the 2 ppmv @ 15% oxygen on a dry basis NOx limit. The present worth value of the proposed control option is \$57,066 and there are no emission reductions. The present worth value of the alternative control option is \$39,062,000 and the emission reductions of the alternative control option is 362.5 tons over 25 years. The incremental cost-effectiveness for removing the exemption for natural gas combined cycle gas turbines meeting 2.5 ppmv NOx at 15% oxygen on a dry basis is \$222,900 per ton of NOx reduced as calculated below.

$$\text{Incremental cost-effectiveness} = (\$39,062,000 - \$57,000) / (362 - 0) = \$107,800 \text{ per ton of NOx reduced}$$

The proposed rule also includes low-use provisions for combined cycle natural gas turbines that operate at less than ten percent of their annual capacity. The progressively more stringent proposal control option would be to remove the exemption. The present worth value of the proposed control option is \$114,132 and there are no emission reductions. The present worth value of the alternative control option is \$45,644,000 and the emission reductions of the alternative control option is 440 tons over 25 years. The incremental cost-effectiveness for removing the exemption for natural gas combined cycle gas turbines is \$103,500 per ton of NOx reduced as calculated below.

$$\text{Incremental cost-effectiveness} = (\$45,644,000 - \$114,000) / (440 - 0) = \$103,500 \text{ per ton of NOx reduced}$$

Natural Gas Simple Cycle Gas Turbines

Subparagraph (g)(4)(A) is a low-use provision for natural gas simple cycle gas turbines that operate at less than ten percent of their annual capacity. The progressively more stringent proposal control option would be to remove the exemption. The present worth value of the proposed control option is \$418,484 and there are no emission reductions. The present worth value of the alternative control option is \$80,712,000 and the emission reductions of the alternative control option is 390.0 tons over 25 years. The incremental cost-effectiveness for removing the exemption for natural gas simple cycle gas turbines is \$205,000 per ton of NOx reduced as calculated below.

$$\text{Incremental cost-effectiveness} = (80,712,000 - \$418,000) / (390.0 - 0) = \$205,900 \text{ per ton of NOx reduced}$$

Overall Incremental Cost-Effectiveness

If the low-use provisions and provisions for equipment near the proposed limits were removed the overall incremental cost-effectiveness would be the sum of all of the alternative control options less the sum of the proposed control options divided by the sum of the alternative control option emission reductions less the sum of the proposed control option emission reductions.

$$\begin{aligned} \text{Overall incremental cost-effectiveness} = & \\ & ((\$23,400,000 + \$16,788,600 + \$39,062,000 + \$80,712,000) - (\$19,500,000 + \$72,400 + \$114,000 \\ & + \$418,000)) / ((778 + 242.5 + 362 + 390.0) - 762.5) = \\ & (\$159,962,600 - \$20,104,400) / (1,772.5 - 762.5) = \$138,473 \text{ per ton of NOx reduced} \end{aligned}$$

The incremental cost analyses presented above demonstrate that the provisions for low-use equipment and equipment already permitted near the proposed limit are necessary to avoid imposing costs that would exceed the cost-effectiveness threshold.

RULE ADOPTION RELATIVE TO COST-EFFECTIVENESS

On October 14, 1994, the Governing Board adopted a resolution that requires staff to address whether rules being proposed for amendment are considered in the order of cost-effectiveness. The 2016 Air Quality Management Plan (AQMP) ranked, in the order of cost-effectiveness, all of the control measures for which costs were quantified. It is generally recommended that the most

cost-effective actions be taken first. Proposed Amended Rule 1135 implements Control Measure CMB-05. The 2016 AQMP ranked Control Measure CMB-05 sixth in cost-effectiveness.

SOCIOECONOMIC ASSESSMENT

A Draft Socioeconomic Impact Assessment has been prepared and is being released on October 2, 2018, 30 days prior to the SCAQMD Governing Board Hearing on PAR 1135, which is anticipated to be heard on November 2, 2018.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

PAR 1135 is considered a “project” as defined by the California Environmental Quality Act (CEQA), and the SCAQMD is the designated lead agency. Pursuant to CEQA and SCAQMD’s Certified Regulatory Program (Rule 110), the SCAQMD, as lead agency for the proposed project, ~~has prepared a Draft Mitigated Subsequent Environmental Assessment (SEA) that was released for a 30-day public review and comment period from September 18, 2018 to October 18, 2018. The Draft Mitigated SEA indicated that while the project reduces NOx emissions, complying with the proposed project may also create secondary adverse environmental impacts that would not result in significant adverse impacts to any environmental topic areas after mitigation. The proposed project will have no statewide, regional, or area-wide significance; therefore, no CEQA scoping meeting is required pursuant to Public Resources Code Section 21083.9(a)(2) or CEQA Guidelines Section 15162(d). One comment letter was received relative to the Draft Mitigated SEA and rResponses to comments will have been prepared for any comment letters that are received during the comment period relative to the Draft Mitigated SEA. Since the release of the Draft Mitigated SEA, modifications were made to the proposed project in response to verbal and written comments. SCAQMD staff has reviewed the modifications to the proposed project and concluded that none of the modifications constitute significant new information, or a substantial increase in the severity of an environmental impact, or provide new information of substantial importance regarding the Draft Mitigated SEA. In addition, revisions to the proposed project in response to verbal and written comments would not create new, avoidable significant effects. As a result, these revisions do not require recirculation of the Draft Mitigated SEA pursuant to CEQA Guidelines Section 15073.5 or 15088.5. After completion of the public review and comment period, the Draft Mitigated SEA will be updated to reflect any modifications that are made to the proposed project has been revised to reflect the aforementioned modifications and to include the comment letter and the responses to the comments such that it is now a Final Mitigated SEA (see Attachment J). and the Draft Mitigated SEA will be converted to a Final Mitigated SEA. The comment letters and the individual responses to the comments will be included in an appendix to the Final Mitigated SEA. The Final Mitigated SEA will be included as an attachment to the Governing Board package.~~

Prior to making a decision on the adoption of PAR 1135, the SCAQMD Governing Board must review and certify the Final Mitigated SEA, including the responses to comments, as providing adequate information on the potential adverse environmental impacts that may occur as a result of adopting PAR 1135.

DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY CODE SECTION 40727**Requirements to Make Findings**

California Health and Safety Code Section 40727 requires that prior to adopting, amending or repealing a rule or regulation, the SCAQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing, and in the staff report.

Necessity

Proposed Amended Rule 1135 is needed to establish BARCT requirements for electricity generating facilities, including facilities that will be transitioning from RECLAIM to a command-and-control regulatory structure.

Authority

The SCAQMD Governing Board has authority to adopt amendments to Proposed Amended Rule 1135 pursuant to the California Health and Safety Code Sections 39002, 40000, 40001, 40440, 40702, 40725 through 40728, 41508, and 41508.

Clarity

Proposed Amended Rule 1135 is written or displayed so that its meaning can be easily understood by the persons directly affected by it.

Consistency

Proposed Amended Rule 1135 is in harmony with and not in conflict with or contradictory to, existing statutes, court decisions, or state or federal regulations.

Non-Duplication

Proposed Amended Rule 1135 will not impose the same requirements as any existing state or federal regulations. The proposed amended rule is necessary and proper to execute the powers and duties granted to, and imposed upon, the SCAQMD.

Reference

In amending Rule 1135, the following statutes which the SCAQMD hereby implements, interprets or makes specific are referenced: Health and Safety Code sections 39002, 40000, 40001, 40702, 40440(a), and 40725 through 40728.5.

COMPARATIVE ANALYSIS

Health and Safety Code Section 40727.2 requires a comparative analysis of the proposed amended rule with any Federal or District rules and regulations applicable to the same source. A comparative analysis is presented below in Table 4-65.

Table 4-56: PAR 1135 Comparative Analysis

Rule Element	PAR 1135	Rule 1110.2	Rule 2009	RECLAIM	40 CFR Part 60 Da	40 CFR Part 60 GG	40 CFR Part 60 KKKK	40 CFR Part 72
Applicability	Boilers, internal combustion engines, and turbines located at investor-owned electric utilities, publicly owned electric utilities, facilities with combined generation capacity of ≥ 50 MW	Gaseous and liquid fueled engine over 50 rated brake horsepower	Facility generating ≥ 50 MW and owned or operated by Southern California Edison, Los Angeles Dept. of Water and Power, City of Burbank, City of Glendale, City of Pasadena, or any their successors	Facilities regulated under the NOx RECLAIM program (SCAQMD Reg. XX)	Electric utility steam generating units at a facility generating > 73 MW and constructed or modified after 9/18/78	Gas turbines with heat input of ≥ 10 MMBtu/hr constructed or modified before 2/18/2005	Gas turbines with heat input of ≥ 10 MMBtu/hr constructed or modified after 2/18/2005	Facilities regulated under the national sulfur dioxide and nitrogen dioxide air pollution control and emission reductions program
Requirements	Emission limits: <ul style="list-style-type: none"> Boiler: NOx 5 ppmv @ 3% O₂; Ammonia 5 ppmv @ 3% O₂ Combined Cycle Gas Turbine and Associated Duct Burner: NOx 2 ppmv @ 15% O₂; Ammonia 5 ppmv @ 15% O₂ Simple Cycle Gas Turbine: NOx 2.5 ppmv @ 15% O₂; Ammonia 5 ppmv @ 15% O₂ Internal Combustion Engine: NOx 45 ppmv @ 15% O₂; Ammonia 5 ppmv @ 15% O₂; CO 250 ppmv @ 15% O₂; VOC 30 ppmv @ 15% O₂; PM 0.0076 lbs/MMBtu @ 15% O₂ 	Existing Internal Combustion Engine: NOx 11 ppmv @ 15% O ₂ ; CO 250 ppmv @ 15% O ₂ ; VOC 30 ppmv @ 15% O ₂ ;	Submit Compliance Plan to demonstrate BARCT by 2003/2004	As determined by Rule 2009	NOx limit: 0.15 lb/MMBtu	NOx limit @ 15% O ₂ : $0.0075*(14.4/Y) + F$ where Y = manufacture's rated heat input and F = NOx emission allowance for fuel-bound nitrogen	NOx limit for electric generating units (@ 15% O ₂): <ul style="list-style-type: none"> ≤ 50 MMBtu/hr – 42 ppm when firing natural gas ≤ 50 MMBtu/hr and ≤ 850 MMBtu/hr – 15 ppm when firing natural gas > 850 MMBtu/hr – 15 ppm when firing natural gas ≤ 50 MMBtu/hr – 96 ppm when firing other fuel ≤ 50 MMBtu/hr and ≤ 850 MMBtu/hr – 74 ppm when firing other fuel > 850 MMBtu/hr – 42 ppm when firing natural gas 	NOx limits for boilers = 0.40 lb/MMBtu
Reporting	Annual reporting of NOx emissions	Breakdowns, monthly portable engine logs,	None	<ul style="list-style-type: none"> Daily electronic reporting for major sources Quarterly Certification of Emissions Report and Annual Permit Emissions 	Daily written reports or quarterly electronic reports	Excess emissions and CEMS downtime within 30 days	Excess emissions and CEMS downtime within 30 days; annual performance testing within 60 days	40 CFR 75 requirements for quarterly reports of information and hourly data from CEMS monitors, and calibration

Rule Element	PAR 1135	Rule 1110.2	Rule 2009	RECLAIM	40 CFR Part 60 Da	40 CFR Part 60 GG	40 CFR Part 60 KKKK	40 CFR Part 72
				Program for all units				
Monitoring	• A continuous in-stack NOx monitor	A continuous in-stack NOx monitor for engines \geq 1,000 bhp and operating more than two million bhp-hr per calendar year	None	A continuous in-stack NOx monitor for major sources	A continuous in-stack NOx monitor			
Recordkeeping	Performance testing; emission rates; monitoring data; CEMS audits and checks maintained for five years	Source testing or Relative accuracy tests per 40 CFR 70 at least once every two years	None	<ul style="list-style-type: none"> • < 15-min. data = min. 48 hours; • \geq 15-min. data = 3 years (5 years if Title V) • Maintenance & emission records, source test reports, RATA reports, audit reports and fuel meter calibration records for Annual Permit Emissions Program = 3 years (5 years if Title V) 	Performance testing; emission rates; monitoring data; CEMS audits and checks	Performance testing; emission rates; monitoring data; CEMS audits and checks	Performance testing; emission rates; monitoring data; CEMS audits and checks	Performance testing; emission rates; monitoring data; CEMS audits and checks maintained for three years
Fuel Restrictions	Liquid petroleum fuel limited to Force Majeure natural gas curtailment, readiness testing, and source testing	None	None	None	None	None	None	None

APPENDIX A – COMMENTS AND RESPONSES

Comment Letter 1**Montrose Air Quality Services – July 31, 2018**

July 31, 2018

Ms. Uyen-Uyen Vo
 Air Quality Specialist
 South Coast Air Quality
 Management District
 21865 Copley Drive
 Diamond Bar, California 91765

Subject: Proposed Amended Rule 1135

Dear Ms. Vo:

Montrose Air Quality Services (MAQS) is pleased to offer the following comments in response to SCAQMD Proposed Amended Rule 1135. Our comments reflect our many years of compliance management and permitting experience with local municipal utilities.

Sections (b), (d)(3), (d)(4) and (d)(5)– Change is Rule Applicability from Electric Power Generating Systems to Electric Power Generating Facilities

Presently, Rule 1135 is applied to power generating units defined as legacy boilers and their replacements. According to the proposed amendments, emission rate limits and mass emission caps that currently apply only to defined generating units would now be applied to all generating devices at a regulated facility.

The City of Glendale Grayson Power Plant includes three boilers (boilers 3, 4 and 5) that are currently defined as "electrical power generating systems" and are subject to the mass emission caps (or emission rate limits) and annual emission caps of Rule 1135. The facility also includes several turbines that are not boiler replacements and classified as "electric power generating systems". The proposed language would subject these additional devices to emission rate limits and mass emission caps.

1.1

Additionally, paragraph (d)(3) specifies that the daily and annual emission limits would remain in place until the new concentration limits specified in paragraph (d)(1) take

1.2

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Ms. Uyen-Uyen Vo
South Coast AQMD

2

July 31, 2018

effect, even though modifications may be made to ensure compliance with paragraph (d)(1) prior to the effective date.

To ensure continuity in applicability until facility modifications are implemented, we suggest the following changes to paragraphs (d)(3) and (d)(4):

Until compliance with the emission limits pursuant to paragraph (d)(1) becomes effective is achieved, the City of Glendale shall not operate ~~its electric-generating facility~~ electric generating units as defined on July 19, 1991 unless

1.2

Paragraph (d)(5) should also be modified to specify "a violation of any requirement specified in paragraph (d)(3) or (D)(4) shall constitute a violation of this rule for every ~~permitted~~ applicable unit

1.3

Paragraph (c)(20) – Startup Definition

The proposed definition is confusing because it reflects a time period with a defined start point but no end point.

*MAQS recommends the following modification:
"Startup means the time period in which an electric power generating unit begins combusting fuel after a period of zero fuel flow, and ends when compliance with emission limits is sustained, or as otherwise defined in the SCAQMD permit."*

1.4

Paragraph (d)(1), Table I – Emission Limits

The proposed rule language specifies an ammonia limit of 5.0 ppmv. While the proposed limit of 5.0 ppmv reflects BACT for new units based upon recent changes to BACT policy, existing permits for turbines that already comply with the proposed NOx limit may have a permitted limit of 5 ppmv. Existing emission control systems have been designed for the slightly more flexible permitted limit.

1.5

Ms. Uyen-Uyen Vo
South Coast AQMD

3

July 31, 2018

MAQS suggests that the 5.0 ppm ammonia limit apply only for new installations or in cases where turbines or emission control systems are modified to meet the proposed NOx emission concentration limits.

1.5

Paragraph (d)(1)(A) – Exclusions

The proposed rule language excludes startup, shutdown and tuning operations from Table I NOx limits. It makes sense that these operations, especially tuning operations, could also result in ammonia emissions in excess of Table I limits. Additionally, SCAQMD's reference to "tuning" is sometimes referenced as "maintenance operations" in existing permits.

1.6

MAQS suggests the following change to paragraph (d)(1)(a):

"The NOx and ammonia emission limits in Table I shall not apply during start-up, shutdown and tuning/maintenance."

Paragraph (d)(2)(A)(i) should also be accordingly modified.

Paragraphs (e)(2) and (e)(3) – Monitoring

MAQS continues to believe that RECLAIM facilities should have the flexibility to voluntarily transition away from RECLAIM CEMS and DAS requirements. The unique requirements of RECLAIM subject local operators to a limited number of available vendors. RECLAIM facility operators are also subjected to increased software and maintenance costs and a higher risk of noncompliance due to software deficiencies.

1.7

The proposed rule language seems to reinstate the concept of former RECLAIM facilities continuing to be subject to RECLAIM monitoring provisions but gives no reference to the possibility of a future voluntary option to transition to more widely accepted DAS software. The adjoining CEMS requirements document, however, seems to carry on past Rule 1135 monitoring requirements without distinguishing between RECLAIM and non-RECLAIM facilities. Additional discussion regarding SCAQMD's intent for short-term, intermediate and long-term monitoring strategies is warranted.

Ms. Uyen-Uyen Vo
South Coast AQMD

4

July 31, 2018

Paragraph (f)(3) – Exclusions During Source Testing

It is not clear if SCAQMD intended to apply the proposed exclusion only to paragraphs (d)(3) and (d)(4), or if the intent is to also provide exclusions during source testing from paragraphs (d)(1) and (d)(2).

1.8

Paragraphs (g)(1) and (g)(2) - Exemptions

Paragraphs (g)(1) and (g)(2) include exemption provisions for tuning operations, but do not include "maintenance" as referenced in existing permits.

1.9

MAQS recommends that "tuning" be replaced with "tuning / maintenance".

Paragraph (g)(5)(C) – Low-Use Demonstration

The proposed language provides reasonable exemptions from Table I emission limits for low-use units. However, capacity factor is loosely defined and eligibility for the exemption is based upon 2016- 2018 operations, rather than future operations.

The concept of low-use exemptions from proposed emission limits has been proposed by the regulated community since the initial discussions about PAR 1135. However, SCAQMD has not been able to define its low use thresholds until the most recent working group meeting. It seems unreasonable to avoid defining what "low use" really means and now specify eligibility based upon historic operations.

By defining eligibility for low use exemptions based upon prior year operations, SCAQMD eliminates the ability for facility operators to incorporate low use concepts into their future compliance strategies. This is especially important in the electricity generating industry where low use assets can play a critical role in future peak power production to ensure reliability and grid stability without significantly adding to regional ozone formation.

1.10

Allowing facility operators to reduce operations by 2023 to meet low use exemption thresholds provides the same long-term air quality benefits that the proposed language provides, but also provides practical flexibility for facility operators.

Ms. Uyen-Uyen Vo
South Coast AQMD

5

July 31, 2018

MAQS suggests the following revision to proposed paragraph (g)(5)(C):

The owner or operator shall:

- (i) Submit a compliance plan to SCAQMD by January 1, 2020 demonstrating that the low use exemption will be achieved by calendar year 2023.*
- (ii) Submit SCAQMD permit applications.....by January 1, 2021*

1.10

Paragraph (g)(5)(D) – Emergencies

The proposed emergency exclusion provisions are limited to operations in response to a CEC emergency response plan or an energy emergency declared by the Governor. However, local municipalities can operate utilities and local transmission lines but may not control the point of connection to the CAISO grid. As such local emergencies can occur without necessarily being declared by the Governor, CEC or CAISO. Many municipal utility assets have been designed and installed to avert these local emergencies.

1.11

MAQS suggests that paragraph (g)(5)(D) be modified to state "When calculating the annual capacity factor to demonstrate eligibility for.....during a phase of the California Energy Commission Energy Emergency Response Plan or a declared state of emergency or energy emergency declared by the Governor or local official shall not be included."

Ms. Uyen-Uyen Vo
South Coast AQMD

6

July 31, 2018

Again, MAQS appreciates the opportunity to submit these comments and welcomes the opportunity to discuss these concepts in more detail as we proceed through the rule development process. I am also available to discuss at your convenience and best reached at (714) 282-8240.

Sincerely,
Montrose Air Quality Services, LLC

A handwritten signature in blue ink that reads "Karl Lany".

Karl Lany, C.P.P.
District Manager
Regulatory Compliance Services

Par 1135 comments 7-31-18

Response to Comment 1-1

Staff has clarified the rule language in subparagraphs (d)(6)(A) and (d)(6)(B) to reflect that the SCAQMD-wide daily limits and annual emissions limits currently applicable to the City of Glendale boilers will remain applicable to the City of Glendale boilers only.

Response to Comment 1-2

Staff has revised the rule language in subparagraphs (d)(6)(A) and (d)(6)(B) to include provisions that remove the City of Glendale's SCAQMD-wide daily limits and annual emissions limits as soon as the City of Glendale complies with the BARCT emission limits in paragraph (d)(1).

Response to Comment 1-3

Staff has revised the rule language in subparagraph (d)(6)(C).

Response to Comment 1-4

Staff has revised the rule language in paragraph (c)(23) to reflect an endpoint for when startup concludes.

Response to Comment 1-5

Staff has revised the rule language in Tables 1 and 2 and elsewhere to provide consistency in the rules regarding emission limits.

Response to Comment 1-6

Ammonia does not need to be excluded during start-up, shutdown, and tuning operations because staff's understanding of the operation of the turbine during these time periods is that ammonia is either not being injected at all, or the rate of injection is limited to the extent that an exceedance is highly unlikely. Additionally, excluding "maintenance" periods is inappropriate as this term is too broad and can be interpreted to include many types of work performed on a turbine without regards to whether or not the work has the potential to affect emissions. Furthermore, maintenance activities should occur when the equipment is not operating to generate power. In the cases where existing permits refer to "maintenance" rather than "tuning," the facility may consider requesting a permit condition change.

Response to Comment 1-7

At this time, Rule 1135 will require each facility to maintain their current monitoring and recordkeeping practices. SCAQMD will be adopting a new rule, Proposed Rule 113 – Monitoring, Reporting, and Recordkeeping (MRR) Requirements for NOx and SOx Sources. Once Rule 113 is adopted, then all facilities will transition to Rule 113 which should address concerns regarding RECLAIM CEMS and DAS requirements. Staff is reluctant to allow transitions in the interim as Proposed Rule 113 will likely impose different requirements for CEMS and DAS resulting in lost or stranded assets if the facility made changes during the interim period.

Response to Comment 1-8

Paragraph (f)(3) applies to all emissions limits in subdivision (d).

Response to Comment 1-9

Please refer to Response to Comment 1-6.

Response to Comment 1-10

The low-use demonstration provisions have been revised to require that permit applications requesting low-use status be submitted by July 1, 2022, and low-use thresholds be achieved beginning calendar year 2024. The historical demonstration has been removed as many potential low-use electric generating units will be needed to bridge power generation gaps as more emissive units are retrofitted, replaced, or repowered in the years leading up to the January 1, 2024 compliance date.

Response to Comment 1-11

Staff does not believe that local emergencies should be excluded from the calculation for annual capacity factor. The low-use provision has a higher one year average to take into account local emergencies. If a local emergency required electric generating units to operate greater than 25% of its annual capacity in a year, then the equipment should be retrofitted or repowered within the two years provided pursuant to subparagraph (g)(4)(E).

Comment Letter 2

Los Angeles Department of Water & Power, July 25, 2018



Eric Garcetti, Mayor
 Board of Commissioners
 Mel Levine, President
 William W. Funderburk Jr., Vice President
 Jill Banks Barad
 Christina E. Noonan
 Aura Vasquez
 Barbara E. Moschos, Secretary
 David H. Wright, General Manager

July 25, 2018

Ms. Uyen-Uyen Vo
 South Coast Air Quality
 Management District
 Planning, Rule Development and Area Sources
 21865 Copley Drive
 Diamond Bar, CA 91765

Dear Ms. Vo:

Subject: Proposed Amended Rule 1135 – Emissions of Oxides of Nitrogen from
 Electric Power Generating Systems

The Los Angeles Department of Water Power (LADWP) appreciates the opportunity to provide comments on Proposed Amended Rule (PAR) 1135. LADWP remains committed to working with the South Coast Air Quality Management District (SCAQMD) to transition electric generating facilities (EGFs) from the current RECLAIM program to Rule 1135 in an efficient and effective manner. LADWP strongly believes that SCAQMD should strive to complete that transition in a manner that will achieve the air quality goals of the federal Clean Air Act (CAA), while taking into account energy and economic impacts – including the minimization of any potential adverse impacts on the electric power grid and the economy. To that end, LADWP respectfully submits the following comments on the July 20, 2018, version of PAR 1135.

Municipal or Public Electric Utility Definition

PAR 1135 (c)(7) defines "Electricity Generating Facility" as "a facility that generates electrical power and is owned or operated by or under contract to sell power to California Independent System Operator Corporation, a municipal or public electric utility, or an electric utility on Santa Catalina Island..." This approach of differentiating between the segments of the electric generating sector is potentially confusing. It seems to conflict with SCAQMD's stated intent to establish only one regulation that applies to all affected EGFs. For these reasons, LADWP recommends that SCAQMD establish one set of applicability criteria for determining whether a facility is subject to the PAR 1135 requirements. We suggest SCAQMD consider using the following language for the definition of "Electric Generating Facility:"

ELECTRIC GENERATING FACILITY (EGF) means a facility with electric power generating unit(s) that generates electricity for distribution in a local or state grid system, regardless of

2.1

Ms. Uyen-Uyen Vo
Page 2
July 25, 2018

whether it also generates electricity for its own use or for use pursuant to a contract, with the exception of landfills, petroleum refineries, or publicly owned treatment works.

If SCAQMD decides to retain the current definition of EGF, LADWP has concerns with SCAQMD's proposed definition of "Municipal or Public Electric Utility" in PAR 1135 (c)(11). SCAQMD proposes to define this term as "a special-purpose district or other jurisdiction that provides electricity to residents of that district or jurisdiction." However, PAR 1135 does not further define "a special-purpose district" and, for that reason, is not clear if it includes EGFs under the jurisdiction of LADWP. As an alternative, in lieu of introducing a new definition for "a special-purpose district," LADWP recommends clarifying the definition of EGF as shown below in underline/strikeout format:

2.1

ELECTRIC GENERATING FACILITY means a facility that generates electrical power and is owned or operated by or under contract to sell power to California Independent System Operator Corporation, ~~municipal or public electric utility~~, a local publicly owned electric utility (as defined in the California Public Utilities Code Section 224.3), or an electric utility on Santa Catalina Island.

Force Majeure Natural Gas Curtailment Definition

According to the SCAQMD Staff Report to the original Rule 1135,¹ the intent of the force majeure natural gas curtailment definition is to provide a relief mechanism for natural gas curtailments and, as part of the definition, include as an eligible force majeure event supply restrictions resulting from California Public Utilities Commission priority allocations. In order to provide clarity and be consistent with SCAQMD's original intent for setting NOx standards for EGFs under Rule 1135, LADWP recommends revising the proposed definition as follows:

2.2

FORCE MAJEURE NATURAL GAS CURTAILMENT means an interruption in natural gas service due to any one of the following unforeseeable or unavoidable events: failure, malfunction, natural disaster, or a supply restriction resulting from a California Public Utilities Commission priority allocation system; provided that such event is not the result of an intentional or negligent act or omission on the part of the owner or operator of an electric power generating unit; and provided further that as a result of such event, the daily fuel needs of an electric power generating unit cannot be met with the natural gas available.

¹ SCAQMD Staff Report PAR 1135, letter from Stephen Rhoads, California Energy Commission, to James Lents, Ph.D (5/20/91) (comment letter no. 4, page 000156) (enclosure).

Ms. Uyen-Uyen Vo
Page 3
July 25, 2018

Cost-Effectiveness Analysis

The draft staff report provides cost-effectiveness analysis of reducing NOx emissions from natural gas boilers and natural gas combined cycle turbines based on NOx emissions and capacity factor levels. However, the assumptions associated with the emissions and capacity factors are not clear. For example, the draft report does not indicate whether the annual NOx emissions and percent capacity factors used in the cost-effectiveness analysis are based on a historic annual average over a multi-year period and if so, what years are used. In addition, SCAQMD has not provided a cost-effectiveness analysis for natural gas simple cycle turbines. Without this information, stakeholders cannot evaluate the accuracy and appropriateness of the proposed cost-effectiveness analysis.

In addition, LADWP has questions on the technical basis that SCAQMD is using for setting the capacity factor limitations under the proposed low-use exemption. The proposed exemption provides that gas turbines and boilers installed prior to the adoption date of a final Rule 1135 would not be subject to the otherwise applicable NOx limits in paragraph (d)(1) provided that these generating units do not exceed specific capacity factor levels on a calendar year and average three-year basis. However, the draft staff report does not show the cost-effectiveness analysis used to justify the proposed capacity factor levels. LADWP urges SCAQMD provide this cost-effective analysis (and assumptions associated with the analysis) so that stakeholders have an opportunity to review and provide meaningful comments on the cost-effectiveness analysis methodology and approach used for setting the capacity factor cutoff levels used for determining eligibility for the low-use exemption. Currently, stakeholders do not know if affected generating units having to operate above these capacity factor cutoff levels could be required to incur NOx emissions control costs that exceed SCAQMD's own cost-effectiveness threshold of \$50,000 per ton of NOx reduced.

2.3

Use of Liquid Petroleum Fuel

As part of efforts to maintain a reliable electric system and minimize power outages during potential natural gas curtailments, LADWP recommissioned twelve existing dual fuel electric generating units to be able to operate on California Air Resources Board ultra-low sulfur diesel fuel in 2016. At the time of recommissioning, LADWP worked closely with SCAQMD permitting staff to amend the Title V operating permits to meet acceptable NOx emission limits in the event of force majeure natural gas curtailment. In addition, permit conditions related to diesel fuel readiness testing time limits were also established based on the projected air quality impacts determined by extensive air dispersion modeling and electric generating unit manufacturer recommendations. In light of these thorough and rigorous efforts in setting limitations on the use of liquid petroleum fuel that are tailored to the design and operating scenarios of each electric generating unit, LADWP agrees with SCAQMD's decision to rely on these limitations under PAR 1135, instead of setting one-size-fits-all requirements on using diesel fuel at affected generating units. Furthermore, significant

2.4

Ms. Uyen-Uyen Vo
Page 4
July 25, 2018

variability exists depending on the type, design and operating parameters of each specific electric generating unit. Attempting to address all of these variables for the many different types of affected units by rule would be very difficult to achieve.

2.4

Internal Combustion Engines – Emergency Use

PAR 1135 (f)(1)(4) indicates that the owner of an EGF shall not install internal combustion engines that burn liquid petroleum as the primary fuel. Although the draft staff report states that the restriction on new installations of electric power generating internal combustion engines using liquid petroleum as the primary fuel would not apply to engines installed for the purpose of providing emergency backup power, the revised rule language in the July 20 version of PAR 1135 is not clear on this point. In particular, the relevant proposed rule language is silent on whether there is an exclusion for emergency diesel generators that are necessary in the event of "emergency use" as defined in SCAQMD Rule 1470. Therefore, LADWP recommends clarifying PAR 1135 (f)(1)(4) to state:

2.5

Effective [Date of Adoption], the owner or operator of an electricity generating facility shall not install prime electric power generating unit internal combustion engines that burn liquid fuel as the primary fuel.

Also, LADWP recommends adding the following language in (f)(1)(4):

This requirement does not apply to stationary diesel fueled internal combustion and other compression ignition engines that have been installed at an electric generating facility for only the purpose of providing emergency backup power to assure electric grid reliability.

Once-Through Cooling

LADWP supports SCAQMD's proposed exemption for electric generating boiler units that are subject to once-through cooling (OTC) requirements under Clean Water Act Section 316(b) as it would avoid stranded costs incurred for installing NOx pollution control equipment for a short interim period of time. However, other equipment types such as combined cycle and simple cycle turbines are subject to Clean Water Act Section 316(b) and would also have stranded costs associated with pollution controls resulting from the shutdown of the electric generating unit. Therefore, LADWP requests PAR 1135 (g)(3) be revised to broaden the applicability of OTC units:

2.6

Once-Through Cooling Boilers Electric Power Generating Units
An boiler electric power generating unit subject to the Clean Water Act Section 316(b) shall not be subject to paragraph (d)(1) provided that:

Ms. Uyen-Uyen Vo
Page 5
July 25, 2018

(A) The NOx and ammonia limits, averaging times, start-up, shutdown and tuning requirements specified on the SCAQMD permit as [Date of Adoption] are retained.”

2.6

In addition, the requirement for the owner or operator of an OTC unit to submit a shutdown and retirement plan (Subparagraph (g)(3)(B)) should be deleted from PAR 1135. Owners and operators of OTC units are already required to submit implementation plans in compliance with Clean Water Act Section 316(b) and the information in the plans are included in the National Pollution Discharge Elimination System facility permits. Similarly, the OTC plans are posted on the California State Water Resources Control Board's website. Therefore, the proposed OTC shutdown and retirement plan requirement would be duplicative and unnecessary.

2.7

LADWP appreciates the opportunity to provide comments on PAR 1135. If you have questions or would like additional information, please contact me at (213) 367-0403 or Ms. Jodean Giese at (213) 367-0409.

Sincerely,



Mark J. Sedlacek
Director of Environmental Affairs

JG/EK/TG:rs
Enclosure

c/enc.: Ms. Susan Nakamura, SCAQMD
Mr. Michael Morris, SCAQMD
Mr. Gary Quinn, SCAQMD
Mr. Tracy Goss, SCAQMD
Mr. Kevin Orellana, SCAQMD
Ms. Jodean Giese

STATE OF CALIFORNIA—THE RESOURCES AGENCY

PETE WILSON, Governor

CALIFORNIA ENERGY COMMISSION

1516 NINTH STREET
SACRAMENTO, CA 95814-5512

May 20, 1991

James Lents, Ph.D
Executive Office
South Coast Air Quality Management District
9150 Flair Drive
El Monte, California 91731

Dear Dr. Lents:

We received your PAR Rule 1135E last week, and appreciate the opportunity for one final round of comment. Your decision to defer adoption another month makes sense, since this draft contains significant changes and new provisions which merit further discussion.

I should begin by reiterating the California Energy Commission (CEC) staff's continuing support for adoption of an effective, flexible retrofit rule. Clearly, the changes in the May 2 draft rule indicate you are listening to the concerns raised by the affected parties. You have made progress in addressing the definition of alternative resources and thermal credit, force majeure oil use and conditional exemptions for periods of low load or emergency conditions not exceeding ten days per year. Finally, you have made another bold step forward by incorporating the California Air Resources Board's (CARB) Best Available Retrofit Control Technology (BARCT) cost-effectiveness threshold, as well as the resultant rates and caps.

Each of these topics is likely to raise some spirited discussion at the workshop. To further that exchange, the following sections highlight issues which should be addressed.

Section (b)(9) Force Majeure

The 1135E revision removing the post 1996 oil phase-out requirement is a major improvement. Since this is likely to put increased and permanent focus on the definition of force majeure, some additional scrutiny may be in order. Potential questions include:

- Is this definition a reasonable representation of legal language currently used in practice in state and federal administrative and contract law? 4-1
- Should supply restrictions resulting from CPUC priority allocations due to unexpected supply shortfalls or emergency redirections be allowed force majeure treatment? 4-2

000150

Dr. James Lents
 May 20, 1991
 Page 2

Section (c) Emissions Limitations

The emission rate limits in the rule have been lowered in this draft to .15 Lb/MWh for Southern California Edison (SCE) and Los Angeles Department of Water and Power (LADWP). (.20 Lb/MWh remains constant for the smaller cities). Caps have also been adjusted for all utilities, some up, some down.

CEC staff recognizes CARB's statutory responsibility to make BARCT determinations, and we appreciate their willingness to accept and attempt to define a flexible "system" BARCT. The limits in the current draft are, however, below the ER-90 results we reported in our testimony in December. This is primarily due to the fact that the ER-90 analysis did not examine 1135 limits per se, but simply assumed utility-proposed compliance plans meeting a .25 Lb/MWh rate in the "ICEM" electricity system resource cost effectiveness testing. To the extent that District and ARB cost thresholds result in rates below .25, an ER-90 "equivalent" outcome would reflect lower daily and annual caps. For example, at .15 and \$26,500 average cost, illustrative ER-90 results for SCE are summarized in Table 1. (CEC staff has not yet completed its review of PAR 1135E requirements for the municipal utilities.)

The same analysis is presented in Table 2, but with the assumption that repowered units will meet a BACT requirement of .10, rather than .15, which was the assumption in the adopted ER-90 data sets. As the results in Table 2 demonstrate, this question can have a significant impact upon results.

A second issue of consequence is how the repowered resources are treated in the modelling analysis. Tables 1 and 2 show this sensitivity for the .15 and .10 BACT assumption, respectively.

Key clarification questions include:

- What is the District's assumption regarding BACT for repower or replacement combustion projects?] 4-3
- What is the District's intention regarding qualification of .10 utility repower or replacement projects as "alternative" resources?] 4-4
- What additional PROSYM modelling is planned or needed to address peak day variations or other contingency concerns?] 4-5

000151

Dr. James Lents
 May 20, 1991
 Page 3

Section (h) Exemptions

As emphasized in the Attachment to Jim Boyd's recent letter to you, CEC staff recognizes that increasing cost-effectiveness thresholds can make rule limits lower; these rule limits in turn require recognition of potential emergency situations which cannot be accounted for under expectable average conditions, even with standard deviations taken into account. Your staff and ARB agrees, and as a result you have added a new Section (h) to PAR 1135E.

All parties appear to be in agreement that exemption provisions are needed for both "minimum load" and unforeseen "high emission" circumstances. A number of differing options exist to provide high emission exemptions. At District staff's request, CEC staff developed the following language:

(h) System Emergency Exemptions

The emissions limitations specified in sections (c) 1, (c) 2 and (c) 3 shall not apply under emergency conditions in which a utility system is required to request or provide emergency support, as defined in item 8 of the Coordinated Bulk Power Supply Program (April, 1990). This exemption is limited to those situations in which the specified procedure for requesting emergency relief have been followed, including a utility determination that normal arrangements for capacity and energy are not sufficient to meet a system's requirements, and the next relief measure for either the requesting or responding utility is reduction of firm load.

PAR 1135E chooses an alternative approach, one which contains specific conditions and specifies a limited number of days for which an exemption can be utilized.

CEC staff understands this is a difficult issue, and is willing to work with you to evaluate all options. Specific questions in the current draft language meriting workshop discussion include:

- What is the numerical basis for the 10 day exemption limitation?] 4-6
- Is the 10-day language adequate to cover emergency and other unforeseen circumstances?] 4-7
- Why do the conditions specified in Section (h) not include interruption of non-firm load?] 4-8

000152

Dr. James Lents
May 20, 1991
Page 4

In closing I want to emphasize that your staff has made a tremendous effort to produce a staff report which does address the many complex energy and air quality questions the rule raises. And, we recognize that lingering questions such as those above are challenging, and that neither your staff nor the CEC and California Public Utilities Commission staffs have easy answers. These issues, and others, are, however, certain to be raised in the coming weeks. A continuing dialogue can best inform the final decision your board members will make in July.

One final note regarding the compliance plan schedule is needed. In our April comments we urged you to acquire and approve utility compliance plans as expeditiously as possible. While we understand that adoption has been deferred one month, this draft actually defers plan submittal and approval by over 3 months beyond the April Rule. Again, we ask why utilities need 6 months to develop plans, and why approval--even with public hearings-- will require another 6? This schedule appears to add as much as 6 months to actual implementation without justification. Moreover, this will preclude the approved plans from being incorporated into ER-92. We thus recommend amendments to Section (d) as follows:

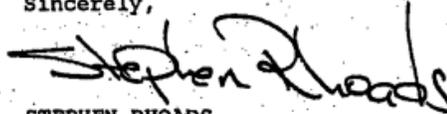
"(d) Compliance Plans

(1) Compliance Plan (Plan) approval and disapproval:

(A) Each owner or operator of a boiler should submit a Plan by November 1, 1991..."

(D) On or after March 1, 1992, failure to have an approved plan..."

Sincerely,



STEPHEN RHOADS
Executive Director

000153

RESPONSE TO RULE COMMENTS
STEPHEN RHOADS, EXECUTIVE DIRECTOR
THE CALIFORNIA ENERGY COMMISSION
(5/20/91)
LETTER NO. 4

- 4-1 We believe that the definition of force majeure gas curtailment is clear, unambiguous, and enforceable.
- 4-2 Staff believes that available evidence shows that very few gas curtailments would actually occur in the District from the mid-1990s. However, a relief mechanism has been built into the proposed regulation for gas curtailments. This definition includes supply restrictions due to the reasons mentioned in the comment.
- 4-3 We assumed 0.15 lbs NO_x/MWH for new combined cycle gas turbine generators.
- 4-4 Gas turbines and other resources that meet the requirements for Approved Alternative or Advanced Combustion Resources would qualify to participate in the Rule 1135 bubble.
- 4-5 Staff does not intend to conduct additional model runs to study peak day variations any further. Sufficient data is currently available to enable the adoption of regulatory limits.
- 4-6 Staff believes 10 days is a good compromise. On one hand it should provide compliance on 355 days per year or more. On the other, it allows the utilities to plan for less than 100% compliance, in case of unusual circumstances beyond their control. It is important to realize that the utilities will not be allowed any of the exemption days unless they can justify they meet the exemption requirements. If a severe emergency were to require extraordinary in-basin generation for more than 10 days, as happened with SCE in 1985, they would be justified to petition the hearing board for a variance. The 10-day exemption will eliminate the burden of a variance for every short-term, high -generation incident that occurs.
- 4-7 The proposed higher daily limits for upto 10 days per year is expected to address anticipated needs. However, totally unforeseen and unusual conditions that make compliance impossible may merit the attention of the Hearing Board.
- 4-8 We have added the condition requested for interruption of non-firm load.
- 4-9 Due to the major changes proposed to the emission rates and caps, the District thinks the almost 6 months provided after rule adoption is a reasonable time to allow the utilities to prepare and submit their compliance plans.

000156

Assuming the District receives CARB, CEC and PUC comments by February 1, 1992, the District will have till March 1, 1992 to review the comments and the plans, and to notify the utilities of necessary changes. This provides the utilities with a month, until April 1, 1992, to consider comments and revise their plans. Because the plans will be submitted as SIP revisions, a public hearing is also required. The public hearing could be set at the May 1, 1992 District Board meeting to be heard at the June 5, 1992 Board meeting. This would be the last opportunity for the Board to approve the plans in time for the July 1, 1992 deadline.

- 4-10 Staff believes that the CEC-recommended language does not address emergency, high-generation situations which do not require emergency support between utilities. Also there should not be an automatic exemption for emergency support days when the support occurs during a low-demand period that does not require high daily generation.

000157

Response to Comment 2-1

To address the potential confusion from the definition for “electricity generating facility,” staff has revised the rule language in paragraphs (c)(7), (c)(8), (c)(12), and (c)(17). “Electricity generating facility” is now defined as a facility that is an investor-owned electric utility, is a publicly owned electric utility, or has combined generation of 50 MW. Investor-owned utility is an electric power distribution company overseen by the California Public Utilities Commission. Publicly owned electric utility is a special purpose district, including municipal districts or municipalities, which operates electric generating units for power distribution to residents of that district or jurisdiction. With the change in applicability, no new facilities are subject to PAR 1135, but Colton Power, LP (SCAQMD ID #s 182561 and 182563) and City of Riverside, Public Utilities Department (SCAQMD ID # 164204) will no longer be subject to PAR 1135 and will instead be subject to PAR 1134.

Response to Comment 2-2

Staff added “unavoidable” to the definition of force majeure natural gas curtailment in paragraph (c)(9). The definition of force majeure natural gas curtailment was amended to be consistent with SCAQMD Rule 701 – Air Pollution Emergency Contingency Actions. The definition is also consistent with the language recommended by the commenter. Therefore, unavoidable or unforeseen events include failures, malfunctions, natural disasters, or supply restrictions from CPUC priority allocation system that are not an intentional or negligent act or omission.

Response to Comment 2-3

As noted in the tables for the assessment of existing equipment (Tables 2-2 through 2-5), the emissions evaluated are from reporting year 2016. The other tables (Tables 2-15 through 2-18) have been updated to clarify that the same data is used to determine cost-effectiveness. Information for the cost-effectiveness for natural gas simple cycle gas turbines has been included in the staff report. Cost-effectiveness varies by unit with the cost-effectiveness threshold for natural gas simple cycle gas turbines reaching annual capacity levels between 10.4% and 38.5% with an average of 18.7% and a mean of 16.3%.

Response to Comment 2-4

Thank you for the comment.

Response to Comment 2-5

Staff has removed subparagraph (f)(1)(4). The definition for “electric generating unit” has been changed to include only internal combustion engines located on Santa Catalina Island and therefore this provision is no longer needed.

Response to Comment 2-6

The rule language in paragraph (g)(2) has been clarified to include turbines as well as boilers subject to once-through-cooling regulation.

Response to Comment 2-7

Staff understands that the owner and operators of once-through-cooling electric generating units subject to the Clean Water Act Section 316(b) have already submitted implementation plans and the information is posted on California State Water Resources Control Board’s website. SCAQMD will instead require notification of the shutdown and retirement date by January 1, 2023, and any further updates to the shutdown and retirement dates.

Comment Letter 3

Burbank Water & Power, August 10, 2018



August 10, 2018

VIA ELECTRONIC MAIL
(mmorris@aqmd.gov)

Mr. Michael Morris
Planning and Rules Manager
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

SUBJECT: Comment Letter – Proposed Amended Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities

Dear Mr. Morris,

Burbank Water and Power (BWP) is pleased to provide comments on the proposed amendments to Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities (PAR 1135). The proposed amendments are of significant interest and concern to BWP.

Overall, it is BWP's opinion that the South Coast Air Quality Management District (SCAQMD) has done a great job addressing stakeholder concerns during the development of PAR 1135. While BWP is supportive of the proposed amended rule, there is one area that BWP feels requires additional review.

The current PAR 1135 language includes a low use provision, paragraph (g)(6). The provision allows low-use equipment to continue operating without retrofit provided that they do not exceed an annual capacity factor limit. According to PAR 1135, a facility will have to submit a permit application requesting a change of permit conditions to incorporate the low use provision by July 1, 2019. Because of the pending New Source Review (NSR) issues, which may not be resolved by July 1, 2019, BWP is requesting that the deadline to submit a permit application to incorporate the low use provision be extended to July 1, 2022.

3.1

This will allow facilities to have a clear understanding of the path going forward prior to making major decisions on retrofitting equipment.

Burbank Water and Power
164 West Magnolia Boulevard, P.O. Box 631, Burbank CA 91503-0631

BWP looks forward to your response. Please feel free to contact Claudia Reyes, Senior Environmental Engineer, at (818) 238-3510 if you have any questions, or would like to discuss further.

Sincerely,



Frank Messineo
Power Production Manager – BWP Power Supply Division

cc: Claudia Reyes (via electronic mail)
Sean Kigerl (via electronic mail)
Dr. Krishna Nand (via electronic mail)

Response to Comment 3-1

In subparagraph (g)(4)(C), staff has extended the submission date of permit applications for the low-use exemption to July 1, 2022. Staff believes this is the latest date in which a permit could be submitted that allows enough time for the permit change to be completed by January 1, 2024, the deadline required in paragraph (d)(1).

Comment Letter 4

Pasadena Water & Power, August 16, 2018



PASADENA WATER AND POWER
POWER SUPPLY BUSINESS UNIT

August 16, 2018

Sent via electronic mail to mmoris@aqmd.gov and US Mail

Mr. Michael Morris
Planning and Rules Manager
21865 Copley Drive
Diamond Bar, CA 91765

Subject: Pasadena Water and Power Comments on Proposed Amended Rule 1135 –
Emissions of Oxides of Nitrogen from Electrical Generating Facilities

Dear Mr. Morris:

The City of Pasadena Water and Power Department (PWP) appreciates the opportunity to comment on the proposed amendments to Rule 1135 (PAR 1135) – Emissions of Oxides of Nitrogen from Electrical Generating Facilities, which would impose additional requirements on PWP's Electrical Power Generating Facility.

PWP is a municipal utility responsible for providing safe, reliable and reasonably priced water and electric power to its customers. PWP's local electric generation units are located at a single facility and consist of five stationary combustion gas turbines ("GT"): GT-1, GT-2, GT-3, and GT-4 are simple cycle units and GT-5 is a combined cycle unit. GT-5 is PWP's new state of the art combined cycle gas turbine system with the lowest emission concentration limits in the basin. It replaced a 1960's era steam boiler system to modernize and increase the efficiency of the City's electrical generating fleet.

These gas turbine units provide reliability and protection against energy market price spikes for our customers, and are an essential part of the Pasadena's electrical system. Under existing agreements their capacity and electrical output is available to California Independent System Operator ("CAISO") as required.

There are several days in a year when sufficient amount of electricity cannot be imported into Pasadena due to the equipment and transmission constraints. During such times, these gas turbine units make up for the shortfall in the electrical power.

85 E. State Street • Pasadena, CA 91105-3418
Office (626) 744-6243 • Fax (626) 744-4491

PWP Comments: Proposed Amended Rule 1135
 August 16, 2018
 Page 2

PWP staff has been regularly meeting and working with the South Coast Air Quality Management District (SCAQMD) PAR 1135 team. We commend their outreach and work to solicit and address stakeholders concerns during this rule-making process. PWP offers its qualified support for PAR 1135 and requests further review of the current language relating to the submission of the permit application for low-use exemption under [g(5)(c)(ii)].

1) **Low use provision paragraph (g)(5)**

As the rulemaking analysis has shown, this is a much needed and beneficial option for the electric power generating units. However, the following change is needed to provide the necessary flexibility to allow PWP to upgrade GT-1, GT-2, GT-3, and GT-4 units to meet the proposed NOx BARCT emission limit of 2.5 ppmv before the PAR 1135 deadline. It will also preserve PWP's ability to run these units past January 1, 2024 as low-use units, if they are not able to meet the NOx BARCT emission limit of 2.5 ppmv after these upgrades.

(C) Initial Requirement for Low-Use Exemption

The owner or operator of an electricity generating facility that elects the low-use exemption pursuant to paragraph (g)(5) for a gas turbine or a boiler shall:

- (i) Demonstrate compliance with subparagraph (g)(5)(A) or (g)(5)(B) using data from calendar years 2016, 2017 and 2018; and
- (ii) Submit SCAQMD Permit applications for each electric power generating unit requesting the change of SCAQMD permit conditions to incorporate the low-use exemption by July 1, ~~2019~~ 2023.

4.1

The reasons for the request for the change in the date of submission of the permit application (from July 1, 2019 to July 1, 2023) are provided below.

As discussed with your team, PWP has completed a feasibility study for upgrading PWP's existing simple cycle gas turbines (GT-1 through GT-4) to meet the proposed NOx BARCT emission limit of 2.5 ppmv. Based on the results of this study, PWP plans to begin these upgrades upon the final adoption of PAR 1135 in the following order: (a) GT-2, (b) GT-1, (3) GT-3 and (4) GT-4. Due to the length of time needed for permitting and procurement, and constraints on taking gas turbine units out of service for the upgrades, PWP will not be able to complete upgrades to all the gas turbine units until April 2023. (See the attached tentative schedule for upgrades to the gas turbine units GT-1 through GT-4).

It is possible that some of the upgraded gas turbine(s) may not be able to meet the NOx BARCT emission limit of 2.5 ppmv and PWP may have to submit permit application(s) requesting the change of permit conditions to incorporate the low-use exemption.

PWP Comments: Proposed Amended Rule 1135
August 16, 2018
Page 3

Therefore, we request the change in permit submission date from July 1, 2019 to July 1, 2023 in (g)(5)(c)(ii). Note that PWP may not operate a gas turbine unit that does not meet the NOx BARCT emission limit of 2.5 ppm after December 31, 2023, unless the modified permit incorporating the low-use exemption has been issued by the SCAQMD.

PWP would also like to discuss with PAR 1135 team another approach for preparing only one permit application for upgrading the gas turbines as well as for incorporating the low-use exemption. Under this approach, the permit issued by the SCAQMD will have a provision for upgrading the gas turbines. The SCAQMD permit will also have a provision for low-use exemption, effective January 1, 2024 if the gas turbine(s) is not able to meet NOx BARCT emission limit of 2.5 ppmv.

Making the requested change in the permit submission date from July 1, 2019 to July 1, 2023 in (g)(5)(c)(ii) will allow PWP to proceed with the upgrades and preserve our ability to apply for the low-use exemption should the upgraded gas turbine units fall short of the NOx BARCT emission limit of 2.5 ppmv.

We look forward to your response. Please contact Kim Yapp, Environmental Engineer at (626) 744-3926 or me at (626) 744-4568 should you have any questions.

Sincerely,



Arturo Silva, Power Plant Manager

cc: Dr. Krishna Nand (via electronic mail)

4.1

Response to Comment 4-1

Please refer to Response to Comment 3-1. There are no provisions in Rule 1135 precluding the incorporation of the low-use exemption as a contingency measure when modifying the gas turbine to meet the proposed emission limits under the same permit application.

Comment Letter 5Southern California Edison, August 16, 2018

Laura Renger
Principal Manager, Air & Climate Policy
Regulatory Affairs
626-302-6984
laura.renger@sce.com

August 16, 2018

Dr. Phil Fine, Deputy Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765
Via e-mail at: pfine@aqmd.gov

SUBJECT: Proposed Amended Rule 1135: Emissions of Oxides of Nitrogen from Electricity Generating Facilities

Dear Dr. Fine:

Southern California Edison (SCE) appreciates the opportunity to comment on the South Coast Air Quality Management District's (District) Proposed Amended Rule (PAR) 1135. This rule would establish Best Available Retrofit Control Technology (BARCT) and the monitoring, recordkeeping, and reporting (MRR) requirements for Electricity Generating Facilities (EGFs) after the sunset of the Regional Clean Air Incentive Market (RECLAIM) Program as required by Assembly Bill 617. SCE greatly appreciates the extra effort that District staff has put into working with us on this complicated set of issues.

SCE generally supports the proposed rule as it relates to our Mountainview Generating Station, two gas turbine peaking units, and two hybrid gas turbine/battery energy storage units. However, SCE has significant concerns about its effect on our Pebbly Beach Generating Station (PBGs) on Catalina Island. Specifically:

- The Proposed Rule's unreasonably tight deadlines likely will prevent SCE from investing in the clean, lower-emission generation we would prefer – instead, forcing us to opt for diesel engines (which can be installed much faster). For the past 3 years, SCE has engaged in an integrated resource planning effort to develop a strategy for ensuring clean, reliable electricity generation for Catalina Island. This effort is currently before the California Public Utilities Commission and includes stakeholders from the public and private sector, as well as other state agencies. We are concerned that there is insufficient time to evaluate potential options – including renewable energy – that would result in lower emissions than could be attained by the installation of new diesel engines.

5.1

PO Box 800
2244 Walnut Grove Ave.
Rosemead, CA 91770

Dr. Phil Fine
Deputy Executive Officer
August 16, 2018
Page 2 of 4

- The proposed rule has a nitrogen oxides (NOx) emission concentration limit of 45 ppm for internal combustion engines based on a 40% efficiency factor. However, emission concentrations vary based on efficiency – higher efficiency generally results in higher NOx concentrations. SCE sees the need for a method to adjust the emissions limit based on actual engine efficiency. 5.2
- SCE would appreciate additional time to work with District staff to clarify Monitoring, Recordkeeping, and Reporting requirements before the Proposed Rule is finalized. 5.3

Additional Time is Needed for BARCT Implementation and Additional Study of the Feasibility of Alternative Technology

Due to the unique geographic and resource constraints on Catalina Island, electricity generation there is so complex that compliance with the Proposed Rule's deadlines will pose a serious challenge. The proposed compliance timeline requires the facility to meet specific emission limits that are quite aggressive. Given this compressed timeline, SCE would need to move quickly to replace the engines with new Tier 4 diesel engines. SCE anticipates this course of action will be met by strong opposition by environmental organizations and possibly state regulators as well.

Rather than replacing the engines with Tier 4 diesel engines, SCE is exploring cleaner options as part of our integrated resource planning effort for PBGS. These options include renewable energy resources and energy storage. It must be noted that all alternative options to diesel replacement face significant issues that are outside SCE's control such as securing the necessary land rights and permits, and even determining the technical feasibility given Catalina's unique geographic issues. As a part of SCE's resource planning process, we will seek input from numerous stakeholders including the CPUC, and conduct engineering studies to determine which options may be feasible based on costs, permitting feasibility, and the likelihood of CPUC approval. To do this, SCE will need at least one year to conduct the analysis of potential alternatives, and two additional years to determine the feasibility of obtaining required land rights and permits. If additional land rights are necessary (for a renewable energy project), the condemnation process could also require an additional 18 months. (This timeline is SCE's best estimate now, and could be affected by actions outside of our control, such as agency delays and stakeholder opposition.) 5.1

If it is determined that alternative options cannot be permitted and SCE needed to move forward with the acquisition of new diesel engines, SCE may still need to acquire some additional land rights, which could take up to 18 months to acquire.

Dr. Phil Fine
Deputy Executive Officer
August 16, 2018
Page 3 of 4

The Proposed Emission Concentration Limits May Not Appropriately Account for Engines' Performance in Practice

PAR 1135 sets a requirement for NOx emissions at 45 ppmv corrected to 15% O₂, based on EPA's certified Tier 4 engine's emissions of 0.67 g/kWh and assuming an engine efficiency of 40%.

Engine efficiencies vary depending upon an engine's type, model, size, and manufacturer's guarantee. Engines with high efficiency will result in high emissions concentrations but can still meet the certified Tier 4 engine's emissions level. For example, while an efficiency factor of 40% yields NOx emissions of 45 ppmv, an engine with an efficiency factor of 60% will have NOx emissions of 67 ppmv. At PBGS, SCE needs to use various sizes of engines to allow operational flexibility and ensure grid reliability. Some of the engines we need to use cannot meet the new proposed limit.

5.2

SCE understands the need to demonstrate compliance in term of concentration limits and has done so successfully on one of the most critical units on the island. Working closely with the District's permitting staff, we have achieved and maintained a low and reasonable NOx concentration level on Unit 15. SCE would like an opportunity to continue working with the District's permitting staff in future permit applications to determine appropriate emissions concentration levels for the engines.

To address the need to correct the emissions concentrations based on the engine efficiency, SCE respectfully suggests that the District include the following language in Table II: "or EPA's certified Tier 4 engine emissions equivalence as established and approved by Executive Officer" to the proposed emissions limits, or provide clarification or guidance to correct the concentration in the event that the engine efficiency is greater or less than 40%.

Additional Details and Clarity are Needed for Monitoring, Recordkeeping, and Reporting

The proposed MRR, in particularly the Continuous Emissions Monitoring Systems (CEMS) requirements, were designed primarily for existing utility boilers. SCE recognizes that the District staff has been working diligently to address MRR requirements for various types of electricity generating units (namely gas turbines, utility boilers, and internal combustion engines). However, significant changes are needed to the provisions regarding CEMS, including for non-RECLAIM facilities. For example, SCE's CEMS for the four peaking units, which are currently subject to Rule 1134, will be required to add additional reporting codes per Section 2.1(h). At this time, SCE is not confident that CEMS manufacturers will be able to effectuate the required changes in order to meet the new requirements and as written, there is not enough definition in the proposal to make that determination. SCE requests more time to work with District staff to provide clarity on these issues.

5.3

Dr. Phil Fine
Deputy Executive Officer
August 16, 2018
Page 4 of 4

Conclusion

SCE appreciates the time and effort the District staff has invested on this issue, as well as the collaboration between District staff and SCE. As many complex issues remain, more time is needed for additional collaboration.

SCE is committed to delivering safe, reliable, affordable, and clean energy. We welcome a partnership with the District and interested parties to develop and execute the vision for PBGS's energy future. Thank you for considering these comments. We look forward to continuing to work with you and your staff on this rulemaking process.

If you have any questions or would like to discuss these issues, please contact me at (626) 302-6984, or by email at Laura.Renger@sce.com, or contact Thomas Gross, Senior Advisor, Environmental Affairs and Compliance, at (626) 302-9545 or by email at Thomas.Gross@sce.com.

Sincerely,



Laura Renger
Principal Manager, Air and Climate Policy

Cc: Dawn Wilson, SCE
Jim Buerkle, SCE
Don Neal, SCE
Wayne Nastri, SCAQMD
Clerk of the Board, SCAQMD

Response to Comment 5-1

Rule 2009 – Compliance Plan for Power Producing Facilities allowed only three years for electric generating units to achieve BARCT. However, staff recognizes the unique challenges of construction on Santa Catalina Island and has included a provision for that facility to request a three-year time extension for electric generating units located on Santa Catalina island in paragraph (d)(5). A mitigation fee of \$100,000 per year extended is included in the proposed rule. The mitigation fee closely approximates the excess emission fees that would be charged if the facility sought a variance to extend the compliance date. The extension would forgo up to an estimated 4.7 tons per year of NOx emission reductions. Rule 303 Table I – Schedule of Excess Emissions Fees establishes a fee of \$3,643.58 per ton of excess NOx. This would result in a fee of \$17,125 per year or \$47 per day. However, Rule 303 (f) establishes a minimum fee of \$192.36 per day. Over a 365-day period, the excess emission fee would be \$70,211. Including filing and appearance fees, and adjusting for inflation, staff approximated the mitigation fee at \$100,000 per year.

Response to Comment 5-2

Staff believes that Rule 1135 needs to have concentration limits to demonstrate continuous compliance. Including compliance provisions allowing demonstration by Tier IV engine emission standards through source testing is periodic at best. This would preclude the use of a continuous emission monitoring system. The internal combustion engine that currently meets a 51 ppmv at 15% oxygen on a dry basis NOx concentration permit limit was installed decades ago and has been shown to meet the permit limit and the proposed NOx concentration rule limit. Engine efficiency typically ranges between 32% and 46%. SCAQMD assumed this range of engine efficiency, and thus, the ability to meet the proposed rule limit are expected to be achievable using readily available diesel technology without needing to allow for differing engine efficiencies.

The 45 ppmv at 15% oxygen on a dry basis was calculated using the EPA Tier IV limit of 0.67 g/kwh, assuming an engine efficiency of 40%, and the equations below.

$$\frac{0.67 \text{ g}}{\text{kwh out}} \times \frac{0.7457 \text{ kwh out}}{1 \text{ bhp out}} \times \frac{\text{lb}}{454 \text{ g}} \times \frac{0.4 \text{ bhp out}}{1 \text{ bhp in}} \times \frac{\text{bhp in}}{0.002545 \text{ mmbtu}} = 0.173 \text{ lbs/mmbtu}$$

$$\frac{0.173 \text{ lbs}}{\text{mmbtu}} \times \frac{\text{mmbtu}}{9190 \text{ scf}} \times \frac{20.9 - 15}{20.9} \times \frac{\text{ppm}}{1.194 \text{E} - 7} = 44.5 \text{ ppm}$$

Response to Comment 5-3

The monitoring, recordkeeping, and reporting requirements for non-RECLAIM units has been revised to allow for use of SCAQMD Rule 218 or 40 CFR Part 75 with the additional requirement to calculate NOx ppmv pursuant to SCAQMD Rule 218. This should allow SCE's four peaking units to continue current monitoring procedures in the interim until Rule 113 is adopted.

Comment Letter 6NRG Energy, August 17, 2018

From: [Piantka, George](#)
To: [Uyen-Uyen Vo](#)
Subject: PAR 1135 Comments
Date: Friday, August 17, 2018 12:00:09 AM

Ms. Vo,

I attended the August 2nd Proposed Amended Rule 1135 Workshop on behalf of the electrical generating facilities owned and operated by NRG Energy in the South Coast. I gave verbal comments which were primarily focused on the request for air district staff to clarify the implementation of PAR 1135 with respect to CEMS data management to ensure compliance with the amended rule. For example, I noted that it is possible for peaking plants to be dispatched infrequently and for short durations such that less than 90% of daily data validation points are possible, in particular for brief operations that are coincident with a daily calibration. The rule should alleviate the potential for non-compliance for short duration operations. I also noted that the full scale span should remain at 10-95% to be consistent with 40 CFR Part 75. Calibration of MW meters should remain consistent with CAISO annual calibration requirements. During the amendment of Rule 1135, we ask staff consider the elimination of the requirement to maintain chart recorders.

6.1

Best Regards,
George Piantka, PE
Sr. Director, Regulatory Environmental Services
NRG Energy, Inc.
5790 Fleet Street, Suite 200
Carlsbad, CA 92008
760.710.2156 office
760.707.6833 mobile
george.piantka@nrg.com

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Response to Comment 6-1

Please refer to Response to Comment 1-7.

Comment Letter 7NRG Energy, August 17, 2018 Cemtek KVB-Enertec, August 16, 2018**Emissions Monitoring for Compliance & Process Improvement**

CEM Systems, DAHS, Service, Repair & Parts

www.cemteks.cominfo@cemteks.com

August 16, 2018

South Coast Air Quality Management District
 ATTN: Ms. Uyen-Uyen Vo
 Planning, Rule Development and Area Sources
 21865 Copley Drive
 Diamond Bar, CA 91765

Subject: Request for Comments and Questions Relevant to the Proposed Amended Rule 1135

Dear Ms. Vo,

Thank you for the opportunity to have open communication with South Coast Air Quality Management District relevant to the Proposed Amended Rule 1135, and the possible impact the amendment has on our customers. Below I have outlined my comments and questions regarding this proposition.

- | | |
|--|-----|
| 1. PAR 1135 is a command and control regulation, given that most if not all of the facilities that are or will be regulated by this do have limits in their air permits that are similar to the ones stated in the proposed rule, how will a facility transition out of the NOX RECLAIM program into being subject to only PAR 1135? | 7.1 |
| 2. If a facilities current air permit does not have limits as low as the PAR 1135 proposed limits, does that force them out of the NOX RECLAIM program? And if yes, what it the timeframe for the facility to make the necessary changes to their emissions units to come in compliance? Would this facility be considered a new source when doing this? | 7.2 |
| 3. PAR 1135-7 (d)(1)(B) and multiple other places. Other CEMS hourly data is block hour averages and a 60-minute rolling average is a departure from that average determination. The rolling 60-minute average, can this be defined by SCAQMD as to how this is expected to be done? | 7.3 |
| 4. Continuous Emission Monitoring Systems (CEMS) Requirements Document for Electric Generating Facilities - PAR-4 (2.1) (h) Can SCAQMD provide definitions for the codes that are not defined in Rule 1135 such as 3 – Tamper/security, 5 – Hot Standby ? Are the CEMS status codes to be determined on minute or hourly basis? How are these CEMS status to be reported or just recorded? | 7.4 |
| 4. Continuous Emission Monitoring Systems (CEMS) Requirements Document for Electric Generating Facilities - PAR-7 (2.10) The criteria for data points gathered by the NOx CEMS to lie with 20-95 percent of span is more restrictive than R218.1 which is 10-95 percent of span. Is this intended to be more restrictive? | 7.5 |

3041 S. Orange Avenue, Santa Ana, CA 92707 • Phone: 714-437-7100 • Fax: 714-437-7177 • Toll Free: 888-400-0200
 2849 Sterling Drive, Hatfield, PA 19440 • Phone: 215-996-9200 • Fax: 330-860-8982 • Tech Support Phone: 800-582-1670

6. Continuous Emission Monitoring Systems (CEMS) Requirements Document for Electric Generating Facilities – PAR – 12 (4.0) The rule does not specify how the data used to demonstrate compliance is to be reported. What is the format of 4.1.5? What reporting frequency of 4.1.3 and 4.1.5? 7.6
7. Continuous Emission Monitoring Systems (CEMS) Requirements Document for Electric Generating Facilities – PAR – 12 (4.0) When will the first report be due the SCAQMD? 7.7

Please let me know if you need any further information and/or clarification to address the comments and questions herein.

Thank you for your consideration and time. My colleagues and I look forward to receiving a response prior to the public hearing date October 5, 2018.

Kind regards,



Keith Crabbe, Engineering Manager
Cemtek KVB-Enertec
Email: keith@cemteks.com
Office: (714) 437-7100 ext. 221
Cell: (714) 904-4405

Response to Comment 7-1

Facilities will exit the NO_x RECLAIM program pursuant to Rule 2001 – Applicability, and Rule 2002 – Allocations for Oxides of Nitrogen (NO_x) and Oxides of Sulfur (SO_x). Facilities that remain in the NO_x RECLAIM program will be required to follow both the RECLAIM regulations and Rule 1135. PAR 1135 paragraph (e)(7) requires facilities to reconcile their permit(s) with Rule 1135 by July 1, 2022.

Response to Comment 7-2

If a facility's SCAQMD permit does not have limits as low as the proposed limits in PAR 1135, they will not be forced out of the NO_x RECLAIM program. A facility is given until January 1, 2024 to make the necessary changes to their units to comply with Rule 1135. Due to the unique circumstance on Santa Catalina Island, that facility has an optional alternative compliance deadline of January 1, 2026 and also has the option to request a three year time extension. If a facility is required to modify their permit(s), depending on the equipment modification, they may be considered a new source.

Response to Comment 7-3

Staff has removed the document “Continuous Emission Monitoring Systems (CEMS) Requirements Document for Utility Boilers” and all references to the document. Units that have been permitted as of the rule adoption date will maintain their averaging time. Units installed as of the rule adoption date will have the rolling 60-minute average which will likely require new software or a software change.

Response to Comment 7-4

Staff has removed the document “Continuous Emission Monitoring Systems (CEMS) Requirements Document for Utility Boilers” and all references to the document. The CEMS status codes are no longer necessary.

Response to Comment 7-5

Staff has removed the document “Continuous Emission Monitoring Systems (CEMS) Requirements Document for Utility Boilers” and all references to the document. Criteria for data points gathered by the NO_x CEMS will be in Rule 2012 for RECLAIM NO_x sources and former RECLAIM NO_x sources and Rule 218 or 40 CFR Part 75 for non-RECLAIM NO_x sources.

Response to Comment 7-6

Staff has removed the document “Continuous Emission Monitoring Systems (CEMS) Requirements Document for Utility Boilers” and all references to the document. 4.1.3 and 4.1.5 are no longer required.

Response to Comment 7-7

Staff has removed the document “Continuous Emission Monitoring Systems (CEMS) Requirements Document for Utility Boilers” and all references to the document. Reporting requirements are no longer specified in this document.

Comment Letter 8

U.S. Environmental Protection Agency, Region 9, August 16, 2018

Uyen-Uyen Vo

From: Gong, Kevin <Gong.Kevin@epa.gov>
Sent: Thursday, August 16, 2018 2:49 PM
To: Uyen-Uyen Vo
Cc: Lo, Doris; Withey, Charlotte; Law, Nicole
Subject: EPA Region 9 Comments on SCAQMD PAR 1135, version dated July 20, 2018

Dear Ms. Vo,

Thank you for providing us an opportunity to comment on the South Coast Air Quality Management District's ("District's") Proposed Amended Rule 1135 "Emissions of Oxides of Nitrogen from Electricity Generating Facilities" ("Rule"). We have reviewed the proposed language and are providing the following comments on certain issues which may impact the EPA's ability to approve the Rule into the California State Implementation Plan (SIP).

Enforceability of "Low-Use" or "Near Limit" Permit Condition Exemptions

The provisions in sections (g)(1), (g)(2) and (g)(4) exempt combined cycle gas turbines, boilers, and internal combustion engines from the Rule's emission limits as laid out in section (d) of the Rule if these units have permit limits that are below specified thresholds, and if these units retain each of those permit limits.

Section (g)(3) exempts once-through-cooling boilers from the emission limits in section (d) if those units retain their existing permit limits and submit shutdown and retirement plans on or before January 1, 2023.

Section (g)(5) exempts low-use turbines and boilers from the emission limits in section (d) if those units operate below specified annual capacity factor thresholds, and retain their existing permit limits.

8.1

The draft rule provisions cited above appear to presume that RACT-level controls are contained in the District permits. However, these permits are not a part of the SIP. While we agree that exempting certain units from the Rule's emission limits may be consistent with the Clean Air Act's requirements (e.g., for units for which additional controls to meet the Rule's emission limits are not cost effective because the incremental improvement is prohibitively expensive), the SIP must be able to stand on its own in ensuring that all applicable units implement Reasonably Available Control Technology (RACT).

In addition, the District would need to provide a demonstration for each affected unit that the existing controls constitute RACT because more effective controls are not economically or technically feasible.

Stringency of Low Use Thresholds

Section (g)(5) allows for units that operate below a specified annual capacity factor averaged over three years (10% for turbines and 1% for boilers) to be exempt from the emission limits in section (d) of this rule, provided that they retain their permitted emission limits and do not operate above a specified annual capacity factor in any one year (25% for turbines, and 2.5% for boilers). Please clarify why such an averaging scheme is necessary for the implementation of this Rule. As with the other exemptions discussed above, the District would also need to provide a demonstration for each affected unit that the existing controls constitute RACT because more effective controls are not economically or technically feasible.

8.2

RECLAIM Replacement

Rule 1135 is intended to regulate applicable units exiting RECLAIM. Please ensure that, prior to the replacement of the RECLAIM provisions with new command and control rules such as Rule 1135, that the District documents how the emission reductions achieved under RECLAIM will be continued in Rule 1135, either in this rulemaking or in a future

8.3

rulemaking that will rescind or replace RECLAIM. For instance, we note that it appears cogeneration facilities are no longer covered by the Rule. 8.3

We look forward to working with the District to resolve these issues. Please let me know if you have any questions regarding our comments.

Thank you,

Kevin Gong

Rules Office, Air Division (AIR-4)
U.S. Environmental Protection Agency, Region 9
75 Hawthorne St. San Francisco, CA 94105
(415) 972-3073 | gong.kevin@epa.gov

Response to Comment 8-1

Cost-effectiveness calculations for near-limit and low-use equipment are now included in the staff report in Tables 2-15 through 2-18. To qualify for the provisions, equipment must retain federally enforceable permit condition limits as of the date of adoption of the rule.

The near-limit diesel internal combustion engine has a cost-effectiveness of \$224,221 based on a replacement cost of \$3.9 million, no change in annual operating costs and annual emission reductions of 0.7 tons per year.

Near-Limit Diesel Internal Combustion Engine from Table 2-15

Unit	Size (BHP)	Annual NOx Emissions (tons)	NOx Permit Limit (ppmv @ 15% oxygen, dry)	Proposed BARCT NOx Emission Limit (ppmv @ 15% oxygen, dry)	Capital Cost (million)	Annual Emission Reductions (tons)	Cost-Effectiveness (\$/ton NOx)
ICE4	3,900	5.9	51	45	\$3.9	0.7	\$224,221

The near-limit combined cycle gas turbines are utilized between 35 and 39 percent of their capacity. To reach the \$50,000 cost-effectiveness threshold, these units would have to run between 198 and 204 percent of their capacity. Units with cost-effectiveness thresholds greater than 100 percent would not be cost-effective to reduce emissions under any circumstances.

Near-Limit Combined Cycle Gas Turbines from Table 2-17

Unit	Annual NOx Emissions (tons)	Estimated MWh/yr	%Capacity	NOx Permit Limit (ppmv @ 15% oxygen, dry)	Capital Cost (Millions)	Operating Cost (millions)	Emission Reductions (tons)	Cost-Effectiveness (\$/ton reduced)	Annual Capacity Factor (%) at \$50,000 per ton of NOx Reduced
T-CC-24 ¹	33	900,000	35%	2.5	\$20.1	\$1.6	6.6	\$282,898	198.0
T-CC-25 ¹	36	1,000,000	39%	2.5	\$20.1	\$1.6	7.2	\$261,226	203.8

For low-use boilers, the annual capacity at which the cost-effectiveness threshold is reached ranges between 1.9 and 6.8 percent. The limit established in the proposed rule is 1 percent averaged over a three-year period or 2.5 percent in any year.

Low-Use Boiler Thresholds from Table 2-16

Unit	Annual NOx Emissions (tons)	Average Annual Capacity Factor (%)	NOx Permit Limit (ppmv @ 3% oxygen dry)	Capital Cost (millions)	Operating Cost (millions)	Annual Emission Reductions (tons)	Cost-Effectiveness (\$/ton reduced)	Annual Capacity Factor (%) at \$50,000 per ton of NOx Reduced
B18	113.6	42.6	38	7.5	0.8	116.3	\$6,922	5.9
B12	39.7	25.6	40	4.8	0.4	34.6	\$13,262	6.8
B15	177.5	29.5	82	5.9	0.4	167.1	\$3,149	1.9

For low-use combined cycle gas turbines, the cost-effectiveness threshold ranges between 12.7 and ~~XXX~~30.6 percent. The limit established is the proposed rule is 10 percent averaged over a three-year period or 25 percent in any year.

Low-Use Combined Cycle Gas Turbines from Table 2-17

Unit	Annual NOx Emissions (tons)	Estimated MWh/yr	%Capacity	NOx Permit Limit (ppmv @ 15% oxygen, dry)	Capital Cost (Millions)	Operating Cost (millions)	Emission Reductions (tons)	Cost-Effectiveness (\$/ton reduced)	Annual Capacity Factor (%) at \$50,000 per ton of NOx Reduced
T-CC-22	12.1	60,000	4%	7	\$14.8	\$1.1	7.8	\$169,744	12.8
T-CC-23	8.9	40,000	3%	7	\$14.8	\$1.1	5.2	\$253,696	12.7
T-CC-1	4.3	35,000	8%	7.6	\$6.2	\$0.5	3.2	\$174,447	29.0
T-CC-26	0.8	6,000	2%	9	\$4.6	\$0.3	0.6	\$669,774	30.6
T-CC-27	0.5	4,000	1%	9	\$7.2	\$0.5	0.4	\$1,579,869	24.0
T-CC-28	0.5	4,000	1%	9	\$7.2	\$0.5	0.4	\$1,579,869	24.0

Similarly, for low-use simple cycle gas turbines, the cost-effectiveness threshold ranges between 10 and 39 percent. The limit established is 10 percent averaged over a three-year period or 25 percent in any year.

Low-Use Simple Cycle Gas Turbines from Table 2-18

Unit	Annual NOx Emissions (tons)	Estimated MWh/yr	%Capacity	NOx Permit Limit (ppmv @ 15% oxygen, dry)	Capital Cost (Millions)	Operating Cost (millions)	Emission Reductions (tons)	Cost-Effectiveness (\$/ton reduced)	Annual Capacity Factor (%) at \$50,000 per ton of NOx Reduced
T-SC-15	0.5	1500	0.36%	3.5	\$6.2	\$0.41	0.14	\$3,679,674	26%
T-SC-68	1.2	4000	0.99%	5	\$6.1	\$0.41	0.62	\$820,407	16%
T-SC-10	1.9	4000	1.01%	5	\$6.0	\$0.39	0.97	\$513,404	10%
T-SC-30	1.5	4000	1.01%	5	\$6.0	\$0.39	0.75	\$664,064	13%
T-SC-40	1.6	4000	1.01%	5	\$6.0	\$0.39	0.81	\$613,190	12%
T-SC-13	0.0	120	0.13%	5	\$2.3	\$0.15	0.01	\$12,993,169	34%
T-SC-33	0.0	120	0.13%	5	\$2.3	\$0.15	0.02	\$10,320,468	27%
T-SC-43	0.0	120	0.13%	5	\$2.3	\$0.15	0.02	\$10,624,725	28%
T-SC-52	0.0	120	0.13%	5	\$2.3	\$0.15	0.01	\$14,756,563	39%
T-SC-66	2.4	8000	1.93%	5	\$6.2	\$0.41	1.20	\$426,186	16%
T-SC-67	8.9	40000	9.63%	5	\$6.2	\$0.42	4.45	\$116,440	22%
T-SC-18	2.0	6000	1.45%	5	\$6.2	\$0.41	1.00	\$512,207	15%
T-SC-19	1.6	5000	1.20%	5	\$6.2	\$0.41	0.81	\$636,213	15%
T-SC-21	1.1	4000	0.96%	5	\$6.2	\$0.41	0.53	\$971,264	19%
T-SC-23	1.0	4000	0.96%	5	\$6.2	\$0.41	0.51	\$1,004,867	19%
T-SC-25	2.0	5000	1.20%	5	\$6.2	\$0.41	0.99	\$519,131	13%
T-SC-57	1.5	4000	0.96%	5	\$6.2	\$0.41	0.74	\$693,129	13%
T-SC-75	3.6	12000	2.76%	5	\$6.4	\$0.42	1.79	\$295,758	16%
T-SC-64	0.09	270	0.10%	9	\$4.7	\$0.34	0.06	\$6,419,676	13%

Unit	Annual NOx Emissions (tons)	Estimated MWh/yr	%Capacity	NOx Permit Limit (ppmv @ 15% oxygen, dry)	Capital Cost (Millions)	Operating Cost (millions)	Emission Reductions (tons)	Cost-Effectiveness (\$/ton reduced)	Annual Capacity Factor (%) at \$50,000 per ton of NOx Reduced
T-SC-65	0.0	0		9	\$0.0	\$0.00	0.00		
T-SC-61	0.06	120	0.23%	24	\$1.6	\$0.12	0.05	\$2,697,954	12%
T-SC-63	0.13	240	0.46%	24	\$1.6	\$0.12	0.11	\$1,254,841	11%

The cost-effectiveness for retrofitting combined cycle gas turbines to 5 ppmv at 15% oxygen on a dry basis, instead of the proposed rule limit of 2 ppmv at 15% oxygen on a dry basis, results in \$2,092,818 per ton of NOx reduced. The cost-effectiveness for retrofitting simple cycle gas turbines to 5 ppmv at 15% oxygen on a dry basis, instead of the proposed rule limit of 2.5 ppmv at 15% oxygen on a dry basis, results in \$3,405,421 per ton of NOx reduced. The cost-effectiveness of retrofitting the gas turbines to a limit higher than the proposed rule is much greater than the \$50,000 per ton of NOx reduced threshold. The cost-effectiveness for retrofitting boilers to 9 ppmv at 3% oxygen on a dry basis, instead of the proposed rule limit of 5 ppmv at 3% oxygen on a dry basis, results in \$45,478 per ton of NOx reduced. While the cost-effectiveness is lower than the \$50,000 per ton of NOx reduced threshold, it remains higher than the \$5,630 per ton of NOx reduced cost-effectiveness of the proposed limits.

Through the rule development process, staff has been in communication with EPA. EPA has provided comments regarding the state implementation plan (SIP) enforceability of Proposed Amended Rule 1135. As proposed, Proposed Amended Rule 1135 includes some provisions which require units to maintain their existing permit conditions. EPA understands the need for these provisions, but requests that limits be incorporated into Rule 1135 when Rule 1135 is amended to incorporate Rule 113 for monitoring, recordkeeping, and reporting

Response to Comment 8-2

The averaged three-year and one-year exemptions for low-use equipment is included because low-use equipment do not meet cost-effectiveness criteria. Allowing both a one-year threshold and a three-year threshold allows for minor year-to-year variations because of inclement weather or local emergencies. The one-year threshold limit avoids allowing two additional years when it is clear that the equipment will no longer qualify for the low-use exemption.

Cost-effectiveness calculations and annual capacity to reach the cost-effectiveness threshold are now included in the staff report (Tables 2-15 through 2-18). For natural gas simple cycle gas turbines, cost-effectiveness varies by unit with the cost-effectiveness threshold for simple cycle units reaching annual capacity levels between 10.4% and 38.5% with an average of 18.7% and a mean of 16.3%. For natural gas combined cycle gas turbines, the cost-effectiveness threshold is reached at annual capacity levels between 12.7% and 204%. The units with cost-effectiveness thresholds greater than 100% would not be cost-effective to reduce emissions under any

circumstances. For boilers, all three remaining non-OTC operable boilers are currently cost-effective to retrofit. However, the facility is considering requesting a low-use provision. Back calculating from their current cost-effectiveness, they would reach the threshold between 1.9% and 6.8%.

The cost-effectiveness for retrofitting combined cycle gas turbines to 5 ppmv at 15% oxygen on a dry basis, instead of the proposed rule limit of 2 ppmv at 15% oxygen on a dry basis, results in \$2,092,818 per ton of NOx reduced. The cost-effectiveness for retrofitting simple cycle gas turbines to 5 ppmv at 15% oxygen on a dry basis, instead of the proposed rule limit of 2.5 ppmv at 15% oxygen on a dry basis, results in \$3,405,421 per ton of NOx reduced. The cost-effectiveness of retrofitting the gas turbines to a limit higher than the proposed rule is much greater than the \$50,000 per ton of NOx reduced threshold. The cost-effectiveness for retrofitting boilers to 9 ppmv at 3% oxygen on a dry basis, instead of the proposed rule limit of 5 ppmv at 3% oxygen on a dry basis, results in \$45,478 per ton of NOx reduced. While the cost-effectiveness is lower than the \$50,000 per ton of NOx reduced threshold, it remains higher than the \$5,630 per ton of NOx reduced cost-effectiveness of the proposed limits.

Through the rule development process, staff has been in communication with EPA. EPA has provided comments regarding the state implementation plan (SIP) enforceability of Proposed Amended Rule 1135. As proposed, Proposed Amended Rule 1135 includes some provisions which require units to maintain their existing permit conditions. EPA understands the need for these provisions, but requests that limits be incorporated into Rule 1135 when Rule 1135 is amended to incorporate Rule 113 for monitoring, recordkeeping, and reporting

Response to Comment 8-3

RECLAIM does not impose specific emission reduction requirements on individual sources. Instead, staff calculates BARCT requirements (which are more stringent than RACT) for all RECLAIM sources, and the total reductions are met on an agency basis. In contrast, Rule 1135 and other BARCT rules being adopted by the SCAQMD, impose BARCT on individual source categories. If no BARCT has changed since the last RECLAIM amendment, the emission reductions from BARCT rules would be identical to those from the last RECLAIM amendments. However, staff expects a number of source categories to have new BARCT requirements, so that aggregate emission reductions under the new BARCT rules will be greater than under existing RECLAIM.

Cogeneration turbines will be covered in Rule 1134 – Emissions of Oxides of Nitrogen from Stationary Gas Turbines and will also remain subject to NOx RECLAIM regulations until the facility exits the NOx RECLAIM program.

Comment Letter 9Bloom Energy, August 16, 2018

August 16, 2018

Chairman William A. Burke
South Coast Air Quality Management District
21865 Copley Dr.
Diamond Bar, CA 91765

Re: Proposed Amended Rule 1135

Dear Chair Burke,

Bloom Energy (Bloom) appreciates the opportunity to provide these comments on Proposed Amended Rule 1135. We strongly support the South Coast Air Quality Management District's (SCAQMD or District) efforts to protect public health, improve air quality, and reduce emissions from oxides of nitrogen (NOx)—as specified under the 2016 Air Quality Management Plan and AB 617 (2017)—from electricity generating facilities. Our comments specifically focus on the benefits fuel cells can provide in assisting SCAQMD in reaching these goals.

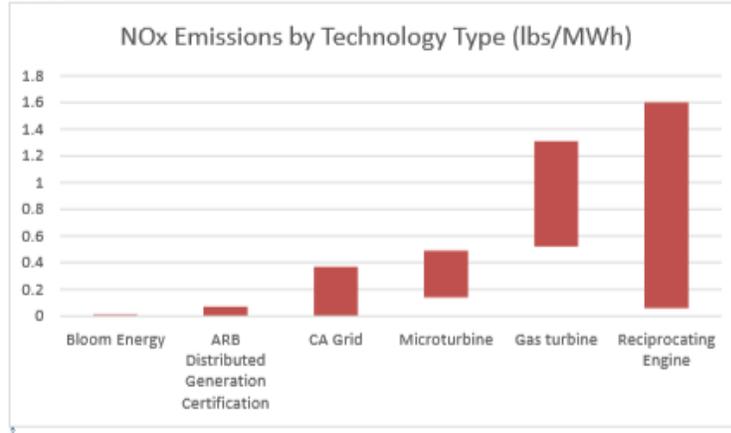
Bloom is a provider of a breakthrough all-electric solid oxide fuel cell technology that produces reliable power using a highly resilient and environmentally superior non-combustion process. By virtue of their non-combustion process, Bloom Energy Servers virtually eliminate emissions of criteria air pollutants including NOx, SOx, CO, VOCs, and particulate matter that are associated with traditional combustion and diesel back up power configurations while providing onsite power 24x7x365. The result is a significantly lower air emissions profile as compared to combustion-based distributed or central station power generation—reducing localized impacts in disadvantaged and vulnerable communities.

Bloom's fuel cells are fuel flexible and can operate on either natural gas or renewable natural gas. In addition, our all-electric solution allows fuel cell systems to be deployed at sites where it is not necessary to match an on-site thermal load, thereby expanding the opportunities available to address energy needs with clean, reliable distributed generation. With more than 200 MW installed across over 480 sites in California, Bloom has a proven technology with a strong track record of providing cost-competitive, clean, reliable energy solutions.

Importantly, on any fuel source, Bloom Energy Servers reduce NOx emissions compared to the grid, gas turbines, and reciprocating engines—see Table 1. These fuel cell benefits align perfectly with SCAQMD's mission to "clean the air and protect the health of all residents in the South Coast Air District through practical and innovative strategies."¹

¹ "Goals and Priority Objectives," South Coast Air Quality Management District, <http://yourstory.aqmd.gov/nav/about/goals-priority-objectives>

Table 1



Given that Bloom's fuel cells emit virtually no NOx, they are a valuable alternative compliance mechanism. We encourage the SCAQMD to explore incorporating this innovative, low-emission solution as part of PAR 1135.

9.1

We thank the District for the opportunity to provide feedback and reiterate that Bloom's fuel cell technology should be an integral component of the District's continuing efforts to protect public health and improve air quality through PAR 1135.

Respectfully,

Erin Grizard
Senior Director, Regulatory and Government Affairs

Sam Schabacker
Policy Manager

² "Amendments to the Distributed Generation Certification Regulation," California Air Resources Board, pg 5, <https://www.arb.ca.gov/energy/dg/2006regulation.pdf>; "Bloom Energy Server ES5-300kW," Bloom Energy, <https://bloomenergy.com/datasheets/energy-server-es5-300kw>; "Catalog of CHP Technologies," Environmental Protection Agency, page 1-6, https://www.epa.gov/sites/production/files/2015-07/documents/catalog_of_chp_technologies_section_1_introduction.pdf; "Combined Heat and Power Catalog: CHP Program," New York State Energy Research and Development Authority, <https://portal.nysed.nyu.gov/servlet/servlet.FileDownload?file=00Pt0000005wxi5EAA>.



Response to Comment 9-1

Thank you for providing the information regarding fuel cells. PAR 1135 does not mandate the types of electric generating units for a facility; PAR 1135 establishes the emissions limits for different types of electric generating units.

Comment Letter 10Sanitation Districts of Los Angeles, July 23, 2018**Uyen-Uyen Vo**

From: Rothbart, David <DRothbart@lacsds.org>
Sent: Monday, July 23, 2018 12:06 PM
To: Uyen-Uyen Vo
Cc: Michael Morris; Steve Jepsen (sjepsen@dudek.com); Alison Torres
Subject: Rule 1135 Comments

Hi Uyen-Uyen,

Thanks for updating the definitions in PAR 1135. While I think most existing biogas energy projects would now be excluded, we probably should address food waste and manure gas as well. With the mandatory diversion of food waste away from landfills, public and private food waste digestion facilities should become more common. At the moment a few non-wastewater treatment plant facilities are digesting food waste and generating biogas (e.g., [CR&R](#) and [Kroger](#)). I'm not sure if any food waste digestion facilities are exporting electricity yet, but it seems probable that some facilities would eventually attempt to install engines, turbines or boilers. Similarly Inland Empire Utilities Agency had a manure digester, so including manure might be reasonable as well. Last, but not least, it's possible to have a privately owned wastewater treatment plant, so it might be helpful to expand the Treatment Works definition. Please let me know if you have any questions.

10.1

10.2

Thanks again,

David

DAVID L. ROTHBART, P.E., BCEE
 SCAP Air Quality Committee Chair
 Supervising Engineer | Air Quality Engineering
 SANITATION DISTRICTS OF LOS ANGELES COUNTY | 1955 Workman Mill Road, Whittier, CA 90601
 Phone: 562.908.4288 x2412 | Cell: 714.878.9655 | FAX: 562.992.9690
 Converting Waste Into Resources | www.LACSD.org

Response to Comment 10-1

If, in the future, biogas is used at electricity generating facilities, it will be subject to the proposed emission limits. Biogas used in turbines, engines, or boilers located at other types of facilities would be subject to equipment specific rules.

Response to Comment 10-2

Staff has revised the definition of electricity generating facility in paragraph (c)(8), which excludes publicly owned treatment works. If a privately owned treatment works were to begin operation, it would be subject to PAR 1135 if its combined generation capacity is 50 megawatts or more of electrical power for distribution in the state or local electrical grid system, excluding power from cogeneration units.

Comment Letter 11Yorke Engineering, July 31, 2018

From: [Greg Wolffe \(GWolffe@YorkeEngr.com\)](mailto:GWolffe@YorkeEngr.com)
To: Uyen-Uyen.Yo
Cc: jadams.yorkeengr.com; Steve.Bean
Subject: SCAQMD Proposed Amended Rule 1135 - OLS Energy
Date: Tuesday, July 31, 2018 11:08:53 AM
Attachments: [image001.jpg](#)
[image002.jpg](#)

Hi Uyen-Uyen.

The proposed Rule 1135 language (g)(5)(C) - Initial Requirement for Low-Use Exemption – appears to require that a EGF demonstrate compliance with the low use exemption using data from calendar years 2016, 2017, and 2018 and that they submit SCAQMD permit applications for a condition to incorporate the low-use exemption by July 1, 2019.

As we discussed with you last month, OLS is transitioning rule applicability from 1134 to 1135 in June/July 2018, based on their new contract to shift from dedicated service to being a EGF to Cal-ISO. As a result, they will not have the calendar years of inventory required to demonstrate the low-use exemption by next year. We seek your opinion as to how this can be accommodated within the current structure of the proposed rule language. For example, one option may be to add language to (g)(5)(C)(i) that states “Demonstrate compliance with subparagraph (g)(5)(A) or (g)(5)(B) using data from calendar years 2016, 2017, and 2018 or any other period deemed representative by the Executive Officer”.

11.1

Please let us know if you would like to discuss options for OLS.

Thanks!

Greg

Greg Wolffe, CPP | Diamond Bar Office
Principal Scientist

O: (909) 861-2729 | M: (714) 315-9049

GWolffe@YorkeEngr.com | [V-card Link](#)

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<image001.jpg>

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Response to Comment 11-1

Please see Response 3-1 and the revised rule language in subparagraph (g)(4)(C).

Comment Letter 12California Council for Environmental and Economic Balance, August 31, 2018

California Council for Environmental and Economic Balance

101 Mission Street, Suite 1440, San Francisco, California 94105
415-512-7890 phone, 415-512-7897 fax, www.cceeb.org

August 31, 2018

Susan Nakamura
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765
Submitted electronically to snakamura@aqmd.gov

RE: PAR 1135 – Best Available Retrofit Control Technology

Dear Susan,

We submit the following comments on behalf of the California Council for Environmental and Economic Balance (CCEEB) on Proposed Amended Rule 1135 (PAR 1135), specifically concerning staff's proposal to require equipment replacement as Best Available Retrofit Control Technology (BARCT). CCEEB is a nonpartisan, nonprofit coalition of business, labor, and public leaders that advances strategies for a healthy environment and sound economy. CCEEB represents many facilities that operate in the South Coast Air Quality Management District (District) and would be affected by these amendments.

CCEEB wishes to better understand the process and authority by which the District is basing its position that a BARCT standard may require total replacement of a particular piece of equipment. We are aware of no other air district that has taken this position. Additionally, the California Health and Safety Code Section 40406 defines BARCT as:

As used in this chapter, "best available retrofit control technology" means an emission limitation that is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of source.

12.1

The Preliminary Draft Staff Report for PAR 1135 makes two arguments supporting staff's position. The first cites "on-line dictionaries" to reason that the definition of retrofit does not "preclude replacement technology."¹ The second cites case law, as determined by *American Coatings Ass'n. v. South Coast Air Quality Mgt. Dist.*, 54 Cal. 4th 446, 465 (2012) to support the notion that the District is not precluded from requiring

¹ SCAQMD. "Preliminary Draft Staff Report Proposed Amended Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities." July, 2018. p.2-1.

RE: PAR 1135 - BARCT

August 31, 2018

Page 2 of 2

replacement technology as long as it is not "arbitrary or irrational."² The notion that because the district is not explicitly *precluded* from acting does not logically – or legally – mean that the district *has* the authority to act.

In this regard, CCEEB seeks further understanding regarding staff's position. CCEEB believes the Preliminary Draft Staff Report does not adequately address or analyze the District's authority for establishing a BARCT standard that requires total replacement of equipment. Detailed analysis is warranted given the statutory requirements of BARCT.

12.1

CCEEB is also concerned regarding the implications of staff's position for future rule makings and BARCT determinations. As the first RECLAIM landing rule to be adopted, we are concerned that PAR 1135 may establish a new precedent that could be applied in future rules. CCEEB believes this may go beyond the definition of and the District's authority for BARCT. At a minimum, this concept should first be discussed with the RECLAIM working group.

We appreciate the opportunity to provide these comments on the PAR 1135 and look forward to continuing to engage staff in the rulemaking and broader public process. In the meantime, should you have any questions or wish to discuss our comments further, please contact me (billq@cceeb.org or 415-512-7890 ext. 115), Janet Whittick (janetw@cceeb.org or ext. 111), or Devin Richards (devinr@cceeb.org or ext. 110).

Sincerely,



Bill Quinn
CCEEB Vice President
South Coast Air Project Manager

cc: Philip Fine, SCAQMD
Jerry Secundy, CCEEB
Janet Whittick, CCEEB
Devin Richards, CCEEB
CCEEB South Coast Air Project Members

² *Ibid*

Response to Comment 12-1

As explained in detail below, BARCT may certainly include the replacement of equipment. In summary, we explain the particular instance in which SCAQMD has sought to specify a level equivalent to equipment replacement as BARCT for internal combustion engines on Santa Catalina Island. This demonstrates how public policy supports SCAQMD's interpretation. Moreover, as we explained in the Preliminary Draft Staff Report, the statutory definition of BARCT supports a broad interpretation. And applicable dictionary definitions do not preclude the view that BARCT can include equipment replacement. Finally, even if a court were to conclude that BARCT cannot encompass equipment replacement, BARCT is not a limitation on SCAQMD authority. The SCAQMD retains broad statutory authority to adopt emission-control requirements for stationary sources, and that authority may require equipment replacement, as long as the requirement is not arbitrary and capricious.

Public Policy Supports the SCAQMD's Interpretation

As noted in the staff report for PAR 1135, staff has proposed a BARCT for diesel fueled engines that appears to be more cost-effectively met by replacing the engine rather than trying to install additional add-on controls. If SCAQMD were precluded from requiring the replacement of these engines, the oldest and dirtiest power-producing equipment would continue to operate for possibly many years, even though it would be cost-effective and otherwise reasonable to replace those engines. As long as an emissions limit meets the requirements of the definition set forth in section 40406, there is no policy reason why replacement equipment cannot be an element of BARCT. And there is no policy reason why BARCT – if it does not include replacements – would somehow limit the SCAQMD from requiring equipment replacement where that requirement is reasonable and feasible. “If the statutory language permits more than one reasonable interpretation, courts may consider other aids, such as the statute’s purpose, legislative history, and public policy.” *Jones v. Lodge at Torrey Pines Partnership*, 42 Cal. 3d. 1158, 1163 (2008). In this case, the statute permits two reasonable interpretations, since the statutory definition in 40406 does not preclude requiring equipment replacement if it is reasonable considering economic and other factors. The legislative history and public policy both support the SCAQMD's interpretation, and a narrow interpretation is inconsistent with the broad language of the statutory definition.

The BARCT proposed for internal combustion engine power producers (replacement with Tier IV engines) is economically and practically reasonable and therefore does not “go beyond” BARCT if we look strictly at the statutory definition. As stated by the Supreme Court, the “statutes that provide the districts with regulatory authority serve a public purpose of the highest order-protection of the public health.” *W. Oil & Gas Assn. v. Monterey Bay Unified Air Pollution Control Dist.*, 49 Cal. 3d 408, 419 (1989) (“WOGA”). Therefore, courts should not find that any statute causes an “implied repeal” of the districts’ authority. *Id.*

The proposal to require replacement of five out of the six internal combustion engines at Santa Catalina Island is supported by overwhelming policy justifications. There are six internal combustion engines at the facility, of which three are at least 50 years old. The other three were installed in 1974, 1985, and 1995. The 1995 engine was installed with SCR; the other five had SCR installed in 2003. Staff concludes that it would be more cost-effective to replace the five oldest of these engines with new Tier IV engines rather than to install additional add-on controls. (The sixth engine was found not to be cost-effective to replace). These engines account for 0.06%

of the electric utility power produced in the District (Draft Staff Report, Table 4-1, 9 MWhr divided by 15,904 MWhr). But they account for 5.7% of the emissions inventory from electricity generating facilities (Draft Staff Report, Table 4-2, 0.2 tpd divided by 3.5 tpd). If the SCAQMD could not require replacement of these engines, then paradoxically the oldest, highest-emitting equipment would escape control.

The SCAQMD has in the past required replacement of old equipment in appropriate cases. The SCAQMD has required replacement, for example, in its dry-cleaning rule, adopted in 2002, which required all perchloroethylene dry-cleaning machines to be phased out by 2020, with other specific requirements implemented starting shortly after rule adoption. (Rule 1421(d)(1)(F)). Thus, a perchloroethylene machine that was installed in 2001 would be required to be replaced with a non-perchloroethylene machine when it is 19 years old. While this is a rule relating to toxic air contaminants, we do not believe the SCAQMD's authority is any less for criteria pollutants.

Dictionary Definitions Support SCAQMD's Interpretation

We do not agree that the term "retrofit" excludes replacement, such as replacement of an engine. We do not find that limitation in the dictionary definitions for the term "retrofit" including those cited in the SCAQMD staff report for Rule 1135. Instead, at least one definition provides that "retrofit" can mean "to replace existing parts, equipment, etc., with updated parts or systems." <http://www.dictionary.com/browse/retrofit>. Nothing in this definition requires that only part of a piece of equipment can be replaced. Indeed, according to this definition, a retrofit can include the replacement of an entire system. In our view, at least one dictionary definition of the term "retrofit" encompasses "replacement of equipment or systems." See definition cited above. This definition is broad enough to include replacing the entire piece of equipment or system. Therefore, the key question is what did the legislature mean when it imposed the BARCT requirement on SCAQMD?

Statutory Definition of BARCT Supports SCAQMD's Interpretation

The statutory definition of BARCT, as found in Health & Safety Code section 40406, does not contain any language precluding replacement technology. Section 40406 defines BARCT as "an emissions limitation that is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of source." Thus, BARCT is an emissions limitation. Nothing in the statutory definition specifies the type of technology that may be used. The California Supreme Court has made it clear that it is the definition of BARCT that controls, not implications from the language used in the term itself. Thus, the Supreme Court rejected the argument that "best available retrofit control technology" is limited to that which is readily available at the time when the regulation is enacted, and instead concluded that it encompasses technology that is "achievable," i.e. expected to become available at a future date. *American Coatings Ass'n. v. South Coast Air Quality Mgt. Dist.*, 54 Cal. 4th 446, 462 (2012). The Court focused on the actual statutory definition, which provides that BARCT is "an emissions limitation that is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts by each class or category of source." *American Coatings*, 54 Cal. 4th at 463. The Court concluded that in common usage, "achievable" means "capable of being achieved," which in turn includes "a potentiality to be fulfilled or a goal to be achieved at some future date." *Id.*

Thus, an emissions reduction was “achievable” when the rule was adopted in 1999 if it was “capable of being achieved” by the rule deadline of 2006. *American Coatings*, 54 Cal. 4th at 464. This was so even if that reduction was not “readily available” in 1999, notwithstanding the use of the word “available” in the term being defined. The Supreme Court held that the statutory definition controls, and in this case the statutory definition does not preclude replacement technology.

When the Legislature has defined a term, courts must follow that definition. *People v. Ward*, 62 Cal. App. 4th 122, 126 (1998). Following the California Supreme Court’s analysis in *American Coatings*, the test of whether an emission limit constitutes BARCT is whether it meets the definition found in the statute, section 40406. If so, then it is within the statutory definition of BARCT, whether or not it is within the most common understanding of “retrofit.” This does not mean that the word “retrofit” is surplusage. The use of the word “retrofit” serves to distinguish an emission limit that is imposed on existing sources, and which under the statutory definition must consider economic and other factors, from the emissions limit imposed on new sources. The limit for new sources must be met if it has been achieved in practice, regardless of cost. See definition of “best available control technology” [BACT] in section 40405, which includes “the most stringent emission limitation that is achieved in practice by that class or category of source.” We do not argue that a replacement can be BARCT if it does not meet the definition of BARCT. Instead, if a limit meets that definition, it can be BARCT even if it can most cost-effectively be met by replacing the equipment with new equipment, as recognized in the dictionary definition discussed above.

The *American Coatings* ruling is not irrelevant just because it dealt with a rule for architectural coatings, requiring coating reformulation, which “does not typically involve the manufacture of modified production equipment or new add-on controls,” whereas control technologies that require physical modification of existing equipment or installation of add-on controls may require “significant disruption to the operation of the facility.” We do not know whether the claim regarding architectural coatings is correct, but even if it is, we do not understand how this relates to the question at issue since *both* retrofit add-on controls and replacements would involve the disruption of facility operations for some time.

Other Statutory References to “Retrofit” Are Inapplicable

The legislature has used the term replacement as well as retrofit in certain sections of the Health and Safety Code. §§ 43021(a), 44281(a). Furthermore, the legislature defined retrofit in sections 44275(a)(19) and 44299.80(o), and the definition does not mention replacement but rather making modifications to the engine and fuel system. Finally, these same code sections define “repower” as replacing an engine with a different engine. §§ 44275(a)(18), 44299.80(n). However, all of these code sections were adopted long after 1987, when the legislature mandated SCAQMD to require BARCT for existing sources. They do not shed any light on what the legislature meant by “retrofit” in 1987 when section 40406 was adopted. All of the sections cited (except section 43021(a)) deal with incentive programs, and the definitions are specifically stated to be only “as used in this chapter”; i.e. for the specific incentive program. (§§ 44275(a); 44299.80(a)). These definitions facilitate the administering agency in implementing the programs, which generally provide different amounts of funding for different types of projects, including “repowering” or “retrofitting.” See *e.g.*

https://www.arb.ca.gov/msprog/moyer/source_categories/moyer_sc_on_road_hdv_2.htm

Therefore, the legislature had a specific purpose in distinguishing between replacements and retrofits in these particular chapters, whereas no one has identified a policy reason that the legislature would have wanted to exclude replacement projects from BARCT, as long as they met the statutory definition.

Section 43021(a), enacted in 2017 as Part of SB1, prohibits Air Resources Board rules that require the “retirement, replacement, retrofit, or repower” of a commercial motor vehicle for a period of time. An argument can be made that this language means that a replacement must be different than a retrofit, under that theory it must also mean that a replacement is different from a repower, whereas under the sections cited above, a repower IS a replacement. Presumably, the legislature wanted to make very sure it covered all possibilities. And to add to the confusion, the Carl Moyer statutes appear to distinguish “retrofit” (an eligible project under §4428244281(a)(2)) from “use of emission-reducing add-on equipment” (an eligible project under §44281(a)(3)). Normally installing add-on controls is considered a type of retrofit.

Statute Discussing Best Available Control Technology Determinations Does Not Circumscribe BARCT Definition

Section ~~40920.64~~440.11 states that in establishing the best available control technology, (BACT), the District shall consider only “*control options or emission limits to be applied to the basic production or process equipment.*” BACT is frequently applied to replacement of an entire source (such as repowers of electric generating units) as well as to new and modified sources. Obviously, in the case of a new source, there is no existing equipment to which to apply the technology. We interpret this statutory language to mean that in establishing BACT, the SCAQMD is not to fundamentally change the nature of the underlying process. For example, if an applicant seeks approval of a simple cycle turbine, the SCAQMD cannot require it to instead construct a combined cycle turbine, since they have different operational characteristics and needs to fill. This would be consistent with EPA’s Draft NSR Workshop Manual, p. B-13, that specifies that in determining BACT, states need not redefine the design of the source, although they retain discretion to do so where warranted (i.e. to require consideration of inherently cleaner technology). <https://www.epa.gov/nsr/nsr-workshop-manual-draft-october-1990>. Similarly, SCAQMD does not propose to require a facility subject to BARCT to “redefine” the nature of its source but merely to replace old diesel internal combustion engines with diesel internal combustion engines meeting EPA’s Tier IV standards. Therefore, section ~~40920.64~~440.1 does not speak to the question at hand: whether BARCT precludes replacing old equipment with new equipment of the same type.

SCAQMD Has Authority to Require Equipment Replacement Which is Not Limited by the BARCT Definition

Finally, even if BARCT by itself did not include replacement equipment, the SCAQMD could still require the equipment to be replaced. We disagree that section 40440(a)(1) grants the authority to require BARCT (i.e., that without that section, the district would have no authority to require BARCT). We also disagree with the proposition that Section 40440(a)(1) limits the District’s authority.

State law has explicitly granted air districts primary authority over the control of pollution from all sources except motor vehicles since at least 1975, when the air pollution regulation provisions

were recodified. *See* § 40000, enacted Stats. 1975, ch. 957, §12; *see also* § 39002, containing similar language and adopted in that same section. As held by the California Supreme Court, these two sections (and their predecessors dating back to 1947) confirm that the air districts had plenary authority to regulate non-vehicular sources “for many years.” *WOGA*, 49 Cal. 3d. at 418-19. And the Supreme Court had previously recognized the air districts’ authority to adopt local regulations for non-vehicular sources under the predecessor statutes. *Orange County Air Pollution Control Dist. v. Public Util. Comm.*, 4 Cal. 3d 945, 948 (1971). Under these broad statutes, the districts could have adopted BARCT requirements for non-vehicular sources. Section 40440(a)(1), therefore, was not a statute granting authority, since the districts already had authority, but a statute imposing a *mandate* to adopt BARCT.

We also disagree with the claim that section 40440(a)(1) requiring the SCAQMD to impose BARCT on existing sources was a “limitation” of district authority. State law expressly provides that districts “may establish additional, stricter standards than those set forth by law” unless the Legislature has specifically provided otherwise §§ 39002; 41508. Nothing in Section 40440(a)(1) specifically limits the District’s authority. In fact, the legislative history of the bill requiring SCAQMD to impose BARCT – among other requirements – states that “this bill is intended to encourage *more aggressive improvements in air quality* and to give the District new authority to implement such improvements.” *American Coatings*, 54 Cal. 4th at 466 (emphasis added). As stated by the Supreme Court, “[t]he BARCT standard was therefore part of a legislative enactment designed to augment rather than restrain the District’s regulatory power.” *Id.* As explained by the legislative history, BARCT is a “minimum” requirement, and the legislature did not intend it to preclude the District from adopting requirements that go beyond BARCT.

Among the new authorities granted were section 40447.5, authorizing fleet rules and limits on heavy duty truck traffic and section 40447.6, authorizing the SCAQMD to adopt sulfur limits for motor vehicle diesel fuel. We do not believe that section 40440(a)(1) granted “new” authority to require BARCT, as the districts already had authority over non-vehicular sources.

Moreover, when the Legislature extended the BARCT requirement to other districts with significant air pollution, section 40919(a)(3) (districts with serious pollution and worse) the legislature expressly stated that the bill “is intended to establish minimum requirements for air pollution control districts and quality management districts” and that “[n]othing in this act is intended to limit or otherwise discourage those district from adopting rules and regulations which exceed those requirements.” Stats. 1992, ch. 945 § 18. Thus it is clear that BARCT is not intended to be a limitation or restriction on existing authority.

Although the California Supreme Court found it unnecessary to decide whether the SCAQMD could adopt rules going beyond BARCT, because it held that BARCT could include technology-forcing measures, it did state that BARCT was not designed to restrain the District’s regulatory power. *American Coatings*, 54 Cal 4th at 466, 469.

In an earlier case, the California Supreme Court made it clear that new legislation does not impliedly repeal an air district’s existing authority unless it “gives *undebatable evidence* of an intent to supersede” the earlier law. *WOGA*, 49 Cal. 3d. at 420 (internal citation omitted; emphasis by Supreme Court). There the court noted that the present statutes and their predecessors giving

air districts authority over non-vehicular sources, including the authority to regulate air toxics, had been in effect before the allegedly preempting law was enacted (in 1983; Stats 1983 Ch. 1047), and had been generally understood and acted upon. *WOGA*, 49 Cal 3d at 419. The court concluded there was no “undebatable evidence of a legislative intent to repeal the districts’ statutory authority to protect the health of their citizens by controlling air pollution.” *WOGA*, 49 Cal 3d at 420. By the same token here, there is no undebatable evidence of an intent to limit air districts’ existing authority by imposing a *mandate* to adopt BARCT requirements. Instead, BARCT was a minimum requirement that SCAQMD must impose, not a limit on its ability to impose additional, including more stringent, requirements. Indeed, the argument that BARCT limits SCAQMD’s authority is illogical. It would make no sense for the Legislature in 1987 to limit only the district with the worst air pollution (SCAQMD) while leaving untouched the authority of other districts with lesser levels of pollution.

Nor does this conclusion leave the SCAQMD with unlimited regulatory power. In going beyond the statutory minimum of BARCT for existing sources, the District would still be limited by the requirement that its rules may not be arbitrary and capricious, or without reasonable or rational basis, or entirely lacking in evidentiary support. *American Coatings*, 54 Cal. 4th at 460. And of course, the SCAQMD’s rulemaking authority is limited by applicable constitutional principles. Therefore, stakeholders need not rely on an argument that BARCT restricts the SCAQMD’s authority in order to ensure the SCAQMD does not implement any arbitrary action.

Conclusion

SCAQMD has the authority to require equipment replacement as a BARCT requirement as long as the requirement meets the statutory definition of BARCT. But even if BARCT were to exclude equipment replacement, the SCAQMD would still have the authority to require replacement, as long as the replacement is not arbitrary and capricious. The proposed BARCT for internal combustion engines on Santa Catalina island is reasonable and feasible, and no one has argued to the contrary.

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

**Final Socioeconomic Impact Assessment for
Proposed Amended Rule 1135 – Emissions of Oxides of Nitrogen from
Electricity Generating Facilities**

November 2018

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EXECUTIVE SUMMARY

A socioeconomic analysis was conducted to assess the potential impacts of Proposed Amended Rule (PAR) 1135 on the four-county region of Los Angeles, Orange, Riverside, and San Bernardino. A summary of the analysis and findings is presented below.

<p>Elements of Proposed Amendments</p>	<p>PAR 1135 - Emissions of Oxides of Nitrogen from Electricity Generating Facilities will be the first command-and-control rule to be amended as part of the transition process of facilities from the NOx RECLAIM program to a command-and-control regulatory structure.</p> <p>PAR 1135 applies to RECLAIM and non-RECLAIM electricity generating facilities that own and operate electricity generating units (e.g., boilers; gas turbines with the exception of cogeneration turbines; and internal combustion engines on Santa Catalina Island) and are investor-owned electric utilities, publicly owned electric utilities, or have a generation capacity of at least 50 megawatts (MW) of electrical power. PAR 1135 will update NOx emission limits to reflect current <u>Best Available Retrofit Control Technology (BARCT)</u> and to provide implementation timeframes. The provisions in PAR 1135 establish NOx and ammonia (NH₃) emission limits for boilers and gas turbines and NOx, ammonia (NH₃), carbon monoxide, volatile organic compounds, and particulate matter for internal combustion engines located on Santa Catalina Island <u>with the exception of emergency internal combustion engines</u>. Additionally, PAR 1135 establishes provisions for monitoring, reporting, and recordkeeping, and establishes exemptions from specific provisions. PAR 1135 is estimated to reduce NOx emissions by 0.91 <u>0.9</u> tons per day by January 1, 2027.</p>
<p>Affected Facilities and Industries</p>	<p>There are 32 <u>31</u> electricity generating facilities subject to PAR 1135. All 32 <u>31</u> facilities are classified under NAICS Code 221112 - Utilities (Fossil Fuel Electric Power Generation). Of these 32 <u>31</u> affected facilities, 17 are located in Los Angeles County, six are in Orange County, five <u>six</u> are in Riverside County, and the remaining three facilities are located in San Bernardino County. Twenty-seven <u>Twenty-six</u> facilities are currently in the NOx RECLAIM program.</p> <p>Twenty-nine <u>Twenty-eight</u> of the 32 <u>31</u> facilities were identified as not needing additional pollution controls, installation of new equipment, or modifications to their existing equipment in order to comply with PAR 1135. The electricity generating units at these facilities are not expected to require modifications to comply with PAR 1135 because the electricity generating units either:</p> <ol style="list-style-type: none"> 1) currently meet the NOx emission limit; 2) are currently eligible for a low-use provision; 3) have <u>a</u> NOx emission levels <u>limit</u> that are <u>is</u> near the proposed NOx emission limit and the unit is exempt from the NOx emission limit because potential equipment modifications exceed a cost-effectiveness

	<p>threshold of \$50,000 per ton of NOx reduced; or 4) are scheduled by facility operators to be either shut down or repowered due to other regulatory requirements not pertaining to PAR 1135.</p> <p>Only three electricity generating facilities would be expected to have existing electric power generating units that would require potential modifications (e.g., installing new or modifying existing air pollution control systems, and repowering, or replacing existing electric power generating units) in order to comply with PAR 1135. <u>Twenty-seven electric generating units would qualify for the low-use provisions. However, three of the facilities will forego use of the low-use provision and instead retrofit their turbines to come into compliance with the PAR 1135 emission limits.</u></p>
<p>Assumptions of Analysis</p>	<p>There are five diesel internal combustion engines located at a single facility that are expected to be replaced in order to comply with PAR 1135. Equipment and installation costs are expected to result in a one-time capital cost of \$3.9 million for each unit.</p> <p>There are three natural gas boilers operated by a municipality. The operator plans to shut down the three natural gas boilers and repower them with three natural gas turbines (one 20 MW unit, and two 44 MW units). One-time capital costs for the 20 MW unit consists of \$19.8 million in equipment costs and \$10.2 million in construction and development fees. Capital costs for the 44 MW units are expected to be \$35.8 million per unit in equipment costs and an additional \$17.4 million per unit in construction and development fees.</p> <p><u>There are seven 47 MW simple cycle gas turbines located at three municipalities that will be retrofit to meet the 2.5 ppmv NOx limit. All but one is being done voluntarily to avoid the low-use provision restrictions. One-time capital costs for equipment and installation are \$1.6 million per unit. Recurring costs for all seven units are comprised of \$10,000 per unit in increased ammonia costs annually and an increase of \$55,000 per unit in selective catalytic reduction (SCR) replacement costs incurred every three years. Additionally, there are two 182 MW combined cycle gas turbines located at a municipality that will be retrofit to meet the 2 ppmv NOx limit. One-time capital costs for equipment and installation are \$6.1 million per unit. Recurring costs for both units are comprised of \$39,000 per unit in increased ammonia costs annually and an increase of \$215,000 per unit in SCR replacement costs incurred every three years.</u></p> <p>Another municipality that operates four natural gas simple cycle gas turbines has scheduled for the catalyst in each of the four existing selective catalytic reduction (SCR) SCR systems to be replaced with more efficient catalyst to comply with the updated BARCT NOx concentration limits in PAR 1135. <u>While the turbines qualify for the low-use provisions, the facility has made a business decision to voluntarily forego that option. Replacement of two 30.6 MW simple cycle gas turbines units are</u> expected to result in a one-time</p>

	<p>capital cost consisting of \$439,000 per unit in equipment costs, \$1.1 million in installation costs per unit, and \$165,000 per unit for spent catalyst disposal and administrative fees. Replacement of two 47.3 MW <u>simple cycle gas turbines units</u> are expected to result in a one-time capital cost consisting of \$241,000 per unit in equipment costs, \$1.1 million in installation costs per unit, and \$165,000 per unit for spent catalyst disposal and administrative fees. Recurring costs for all four units are comprised of \$1,400 per unit in increased ammonia costs annually and an increase of \$55,000 per unit in SCR replacement costs incurred every five years.</p> <p>All 3231 facilities will be required to have their permits modified as a result of PAR 1135. Permit fees for each piece of equipment will result in a one-time cost ranging from \$3,160 - \$23,933. A subset of six facilities may also be required to pay a one-time notification fee of \$2,637.</p>
<p>Compliance Costs</p>	<p>The entirety of the overall annual compliance cost is expected to be incurred by the utilities sector. Average annual compliance costs from 2019 - 2045 are expected to range from \$7.4 - \$10.0\$6.4 - \$8.7 million for the low (1% real interest rate) and high (4% real interest rate) cost scenarios, respectively. Based on the high cost scenario, the majority of <u>PAR 1135 costs</u>, of PAR 1135, \$8.2\$7.2 million (94%72%), stem from installation of five diesel internal combustion engines and three natural gas turbines at two separate facilities <u>a single facility</u>. The additional <u>capital costs</u> of SCR replacement, <u>installation of five diesel internal combustion engines</u>, and permit modifications are estimated at about \$1.4 million, \$360,000\$1.0 million, and \$110,000\$46,000, respectively.</p>
<p>Jobs and Other Socioeconomic Impacts</p>	<p>Based on the above assumptions, the compliance cost of PAR 1135, and the application of the Regional Economic Models, Inc. (REMI) model, it is projected that 88 to 134104 - 154 jobs will be forgone annually, on average, between 2019 and 2045. The projected job loss impacts represent about 0.0012%0.0009% - 0.0014% of total employment in the four-county region.</p> <p>The utilities sector is projected to incur all of the compliance costs and thus experience some jobs forgone. The reduction in disposable income would dampen the demand for goods and services in the local economy, resulting in a small number of jobs forgone projected in sectors such as construction (NAICS 23), retail trade (NAICS 44 - 45), wholesale (NAICS 42), and food services (NAICS 72). The remainder of the projected reduction in employment would be across all major sectors of the economy from secondary and induced impacts of PAR 1135.</p>
<p>Competitiveness</p>	<p>It is projected that the utility sector, where all of the affected facilities belong, would experience a rise in its relative cost of production of 0.062%0.085%0.069% - <u>0.093%</u> in 2025 for the low and high cost scenarios, respectively. The utility sector is also expected to experience an increase in its delivered price by 0.032%0.044%0.036% - <u>0.048%</u> in 2025 for the low and high cost scenarios. Delivered prices that a facility may charge for specific goods or services may increase at a greater rate than this, allowing</p>

	<p>incurred costs to be passed through to downstream industries and end-users. The remaining sectors are likely to experience increases in the relative cost of production and relative delivered price with respect to their counterparts in the rest of the U.S.</p>
<p>Potential NOx RTC Market Impacts</p>	<p>If PAR 1135 is adopted, 27-26 facilities are expected to receive an initial determination notification because, according to staff’s evaluation, all of their permitted RECLAIM NOx source equipment will be subject to this rule once PAR 1135 is adopted. Electricity generating facilities in RECLAIM will need to begin complying with PAR 1135 while in RECLAIM and through the transition out of RECLAIM. Staff has committed to delay issue-issuing a final determination notification to any facilities to exit them from RECLAIM until New Source Review (NSR) issues are resolved.</p> <p>The 27-26 affected <u>RECLAIM</u> facilities currently account for 9.4%<u>9.1%</u> of annual NOx emissions and 19.7%<u>19.5%</u> of NOx RECLAIM trading credit (RTC) holdings in the NOx RECLAIM universe. The simultaneous transition of the 27-26 electricity generating facilities out of the NOx RECLAIM program could potentially assert upward pressure on the discrete-year NOx RTC prices. However, many facilities will likely opt to remain in RECLAIM given RECLAIM’s advantageous NSR provisions<u>until NSR provisions for RECLAIM are resolved</u>. In addition, electricity generating facilities tend to be sellers of RTCs in RECLAIM.</p>

INTRODUCTION

Control measure CMB-05 from the SCAQMD's 2016 Air Quality Management Plan (AQMP) and its adoption resolution establish a timeline to transition facilities from NO_x RECLAIM to a command-and-control regulatory structure. PAR 1135 applies to RECLAIM and non-RECLAIM electricity generating facilities that own and operate electricity generating units (e.g., boilers; gas turbines with the exception of cogeneration turbines; and internal combustion engines on Santa Catalina Island) and are investor-owned electric utilities, publicly owned electric utilities, or have a generation capacity of at least 50 megawatts (MW) of electrical power. PAR 1135 will update emission limits to reflect current Best Available Retrofit Control Technology (BARCT) and to provide implementation timeframes. The provisions in PAR 1135 establish NO_x and ammonia (NH₃) emission limits for boilers and gas turbines and NO_x, ammonia, NH₃, carbon monoxide, volatile organic compounds, and particulate matter for internal combustion engines ~~located on Santa Catalina Island~~ with the exception of emergency internal combustion engines. Additionally, PAR 1135 establishes provisions for monitoring, reporting, and recordkeeping, and establishes exemptions from specific provisions. PAR 1135 is estimated to reduce NO_x emissions by ~~0.9~~ 1.9 tons per day by January 1, 2027.

LEGISLATIVE MANDATES

The socioeconomic impact assessments at SCAQMD have evolved over time to reflect the benefits and costs of regulations. The legal mandates directly related to the assessment of the proposed amended rule include the SCAQMD Governing Board resolutions and various sections of the California Health & Safety Code ~~(H&SC)~~.

SCAQMD Governing Board Resolutions

On March 17, 1989 the SCAQMD Governing Board adopted a resolution that calls for an economic analysis of regulatory impacts that includes the following elements:

- Affected industries
- Range of probable costs
- Cost-effectiveness of control alternatives
- Public health benefits

Health & Safety Code Requirements

The state legislature adopted legislation that reinforces and expands the Governing Board resolutions for socioeconomic impact assessments. Health and Safety Code sections 40440.8(a) and (b), which became effective on January 1, 1991, require a socioeconomic analysis be prepared for any proposed rule or rule amendment that "will significantly affect air quality or emissions limitations."

Specifically, the scope of the analysis should include:

- Type of affected industries
- Impact on employment and the regional economy
- Range of probable costs, including those to industry
- Availability and cost-effectiveness of alternatives to the rule
- Emission reduction potential
- Necessity of adopting, amending or repealing the rule in order to attain state and federal ambient air quality standards

Health and Safety Code section 40728.5, which became effective on January 1, 1992, requires the SCAQMD Governing Board to actively consider the socioeconomic impacts of regulations and make a good faith effort to minimize adverse socioeconomic impacts. It also expands socioeconomic impact assessments to include small business impacts, specifically:

- Type of industries or business affected, including small businesses
- Range of probable costs, including costs to industry or business, including small business

Finally, Health and Safety Code section 40920.6, which became effective on January 1, 1996, requires incremental cost-effectiveness be performed for a proposed rule or amendment that imposes Best Available Retrofit Control Technology or “all feasible measures” requirements relating to ozone, carbon monoxide (CO), oxides of sulfur (SO_x), oxides of nitrogen (NO_x), and their precursors.

Incremental cost-effectiveness is defined as the difference in costs divided by the difference in emission reductions between a control alternative and the next more stringent control alternative. The necessity analysis and the analysis of control alternatives and their incremental cost-effectiveness are presented in the Staff Report prepared for the proposed amendments.

REGULATORY HISTORY

Rule 1135 – Emissions of Oxides of Nitrogen from Electric Power Generating Boilers was adopted in 1989 and applied to electric power generating steam boiler systems, repowered units, and alternative electricity generating sources. Rule 1135 set a NO_x system-wide average emission limit of 0.25 lb/MWh and a daily NO_x emissions cap for each utility system. Rule 1135 established interim emissions performance levels with a 1996 final compliance date. Additionally, Rule 1135 required Emission Control Plans and continuous emissions monitoring systems. The total annualized cost of these amendments was estimated at \$74.0 million with an average cost-effectiveness of \$10,000 per ton of NO_x reduced.

Rule 1135 was submitted to the California Air Resources Board (CARB) for review, prior to submittal to the U.S. Environmental Protection Agency (U.S. EPA), Region IX, for revision to the State Implementation Plan (SIP). In March 1990, CARB staff informed SCAQMD that the adopted

rule was lacking specificity in critical areas of implementation and enforcement, and was considered incomplete for submission to U.S. EPA as a ~~State Implementation Plan (SIP)~~SIP revision.

The December 21, 1990 amendment of Rule 1135 was principally developed to resolve many of the implementation and enforceability issues. This amendment included accelerated retrofit dates for emission controls, unit-by-unit emission limits, modified compliance plan and monitoring requirements, computerized telemetering, and an amended definition of alternative resources. The total annualized cost of these amendments was estimated at \$12.5 million with a cost-effectiveness of \$4,000 per ton of NOx reduced.

In order to consider additional staff recommendations regarding system-wide emission rates, daily emission caps, annual emission caps, oil burning, and cogeneration, the Board continued the public hearing. The July 19, 1991 amendment addressed all of these outstanding issues, including those related to modeling and BARCT analysis. U.S. EPA approved Rule 1135 into the SIP on August 11, 1998.

Electricity Generating Facilities and RECLAIM

Throughout the RECLAIM program, there have been specific provisions for electricity generating facilities. In June 2000, RECLAIM program participants experienced a sharp and sudden increase in NOx RECLAIM trading credit (RTC) prices for both 1999 and 2000 compliance years. Based on the 2000 RECLAIM Annual Report, electricity generating facilities had an initial allocation of 2,302 tons of NOx per year. In compliance year 2000, these facilities reported NOx emissions of 6,788 tons per year, approximately 4,400 tons per year over their initial allocation. This was primarily due to an increased demand for power generation and delayed installation of controls by electricity generating facilities. The electric power generating industry purchased a large quantity of RTCs and depleted the available RTCs. This situation was compounded because few RECLAIM facilities added control equipment.

As a result, in May 2001, the Board adopted Rule 2009 – Compliance Plan for Power Producing Facilities (Rule 2009). To facilitate emission reduction projects at the facilities with the majority of the emissions in RECLAIM, Rule 2009 required installation of BARCT through compliance plans at electricity generating facilities. Diesel internal combustion engines providing power to Santa Catalina Island were not subject to Rule 2009 because the facility only generates 9 MW of energy and did not qualify as a Power Producing Facility in RECLAIM. Despite the increase in NOx RTC demand, emissions from electricity generating facilities fell from 26 tons per day (TPD) of NOx emissions in 1989 to less than 10 TPD of NOx emissions by 2005. Since then, with equipment replacement and increased reliance on renewable sources, NOx emissions have further decreased to less than 4 TPD.

AFFECTED INDUSTRIES

There are ~~32~~³¹ electricity generating facilities subject to PAR 1135. All ~~32~~³¹ facilities are classified under NAICS Code 221112 - Utilities (Fossil Fuel Electric Power Generation). Of these

~~32-31~~ affected facilities, 17 are located in Los Angeles County, six are in Orange County, ~~six-five~~ are in Riverside County, and the remaining three facilities are located in San Bernardino County. ~~Twenty-seven~~Twenty-six facilities are currently in the NOx RECLAIM program. Of the remaining five facilities, one is currently subject to SCAQMD Rules 1134 and 1135 and four are not subject to Rule 1134 or 1135 because of current applicability requirements in the rules.

~~Twenty-nine~~Twenty-eight of the ~~32-31~~ facilities were identified as not needing to modify their existing equipment in order to comply with PAR 1135. The electric power generating units at these facilities are not expected to require modifications to comply with PAR 1135 because the electric power generating units either: 1) currently meet the NOx emission limit; 2) are currently eligible for a low-use provision; 3) have an existing NOx emission levels-limit that ~~are-is~~ near the proposed NOx emission limit and the unit is exempt from the NOx emission limit because potential equipment modifications exceed a cost-effectiveness threshold of \$50,000 per ton of NOx reduced; or 4) are scheduled by facility operators to be either shut down or repowered due to other regulatory requirements not pertaining to PAR 1135.

Only three electricity generating facilities would be expected to have existing electric generating units that would require potential modifications (e.g., installing new or modifying existing air pollution control systems, ~~or~~ repowering, or replacing existing electric power generating units) in order to comply with PAR 1135. Twenty-seven electric generating units would qualify for the low-use provisions. However, three of the facilities will forego use of the low-use provision and instead retrofit their turbines to come into compliance with the PAR 1135 emission limits.

Small Businesses

SCAQMD defines a “small business” in Rule 102, for purposes of fees, as one which employs 10 or fewer persons and which earns less than \$500,000 in gross annual receipts. SCAQMD also defines “small business” for the purpose of qualifying for access to services from SCAQMD’s Small Business Assistance Office as a business with an annual receipt of \$5.0 million or less, or with 100 or fewer employees. In addition to SCAQMD’s definition of a small business, the federal Clean Air Act Amendments (CAAA) of 1990 and the federal Small Business Administration (SBA) also provide definitions of a small business.

The California Health and Safety Code section 42323 classifies a business as a “small business stationary source” if it: (1) is owned or operated by a person who employs 100 or fewer individuals; (2) is a small business as defined under the federal Small Business Act (15 U.S.C. Sec. 631, et seq.); and (3) emits less than 10 tons per year of any single pollutant and less than 20 tons per year of all pollutants. The SBA definitions of small businesses vary by six-digit North American Industrial Classification System (NAICS) codes. In general terms, a small business must have no more than 500 employees for most manufacturing industries, and no more than \$7.0 million in average annual receipts for most nonmanufacturing industries.¹ A business in the industry of fossil fuel electric power generation (NAICS 221112) with fewer than 750 employees is considered a small business by SBA.

¹ The latest SBA definition of small businesses by industry can be found at <http://www.sba.gov/content/table-small-business-size-standards>.

Of the 32 affected facilities within SCAQMD's jurisdiction, 15-14 are public utilities. Information on sales and employees for the 17 remaining facilities were available in the Dun and Bradstreet Enterprise Database.² Under SCAQMD's definition of small business, there are no small businesses affected by PAR 1135. Using the SBA definition of small business for the fossil fuel electric power generation sector, 17 of the facilities are considered small businesses. Under the CAAA definition of small business, eight of the facilities are considered small businesses.

COMPLIANCE COST

The main requirements of PAR 1135 that have cost impacts for affected facilities would include one-time costs and annual recurring costs. The one-time costs would include capital and installation of SCRs, diesel internal combustion engines, natural gas turbines, and one-time permit modifications. Annual recurring cost estimates include annual operating and maintenance costs of SCRs and additional ammonia usage.

The average annual cost of PAR 1135 is estimated to be \$7.4 - \$10.0\$6.4—\$8.7 million between 2019 and 2045, for the low and high cost scenarios, respectively. The low cost scenario assumes a real interest rate of 1%, while the high cost scenario assumes a 4% real interest rate. The entirety of the overall annual compliance costs is expected to be incurred by the utility sector.

Staff has used the following sources to estimate costs of capital, installation, operating and maintenance of SCRs, diesel internal combustion engines, and natural gas turbines:

- 1) Catalog of CHP Technologies, U.S. EPA Combined Heat and Power Partnership, September 2017;
- ~~2) Vendor Cost Estimates.~~
- 2) U.S. EPA Air Pollution Control Cost Manual, November 2017
- 3) Vendor Cost Estimates

~~Of the 32 facilities that are in the PAR 1135 universe, only three facilities were identified as candidates for modifying their existing equipment in order to comply with PAR 1135. Required modifications (and associated costs) to electricity generating units in order to meet the updated BARCT NOx concentration limits in PAR 1135 are detailed below.~~

There are five diesel internal combustion engines (each installed more than 33 years ago) located at one facility that are expected to be replaced in order to comply with PAR 1135. Based on vendor estimates, equipment and installation costs result in a one-time capital cost of \$3.9 million for each unit.

There are three natural gas boilers operated by a municipality. Prior to the development of PAR 1135, the operator presented a project to their city council proposing plans to shut down the three natural gas boilers. Staff has assumed the municipality will repower them with three natural gas

² Dun & Bradstreet Enterprise Database, 2018.

turbines (one 20 MW unit and two 44 MW units). Based on U.S. EPA data, one-time capital costs for the 20 MW unit consists of \$19.8 million in equipment costs and an additional \$10.2 million in construction and development fees. Capital cost for the 44 MW units consist of \$35.8 million per unit in equipment costs and an additional \$17.4 million per unit in construction and development fees.

There are seven 47 MW simple cycle gas turbines located at three municipalities that will be retrofit to meet the 2.5 ppmv NOx limit. All but one is being done voluntarily to avoid the low-use provision restrictions. One-time capital costs for equipment and installation are \$1.6 million per unit. Recurring costs for all seven units are comprised of \$10,000 per unit in increased ammonia costs annually and an increase of \$55,000 per unit in selective catalytic reduction (SCR) replacement costs incurred every three years.³ Additionally, there are two 182 MW combined cycle gas turbines located at a municipality that will be retrofit to meet the 2 ppmv NOx limit. One-time capital costs for equipment and installation are \$6.1 million per unit. Recurring costs for both units are comprised of \$39,000 per unit in increased ammonia costs annually and an increase of \$215,000 per unit in SCR replacement costs incurred every three years.

Another municipality that operates four natural gas simple cycle gas turbines has tentatively scheduled for the catalyst in each of the four existing SCR systems to be replaced with more efficient catalyst to comply with the updated BARCT NOx concentration limits in PAR 1135. While the turbines qualify for the low-use provisions, the facility has made a business decision to voluntarily forgo that option. Based on vendor cost estimates, replacement of two 30.6 MW ~~units~~ simple cycle gas turbines will result in one-time capital costs consisting of \$439,000 per unit in equipment costs, \$1.1 million per unit in installation costs, and \$165,000 per unit for spent catalyst disposal and administrative fees. Replacement of two 40.6 MW ~~units~~ simple cycle gas turbines will result in one-time capital costs consisting of \$241,000 per unit in equipment costs, \$1.1 million per unit in installation costs, and \$165,000 per unit for spent catalyst disposal and administrative fees. Recurring costs for all four units are comprised of \$1,400 per unit in increased ammonia costs annually and an increase of \$55,000 per unit in SCR replacement costs incurred every five years.

In addition, all ~~32~~ 31 facilities will be required to have their permits modified as a result of PAR 1135. Permit fees for each piece of equipment will result in a one-time cost ranging from \$3,160 - \$23,933. ~~A subset of six facilities may also be required to pay a one-time notification fee of \$2,637.~~

Table 1 and Figure 1 present the distribution of the overall costs by selected cost categories. The majority of costs of PAR 1135 (~~\$8.2~~ \$7.2 million annually) stem from the installation of five diesel internal combustion engines and three natural gas turbines at a single municipality. The additional capital costs of SCR replacement, ~~diesel internal combustion engines,~~ and permit modifications are estimated at about \$1.4 million, \$360,000, \$1.0 million, and \$110,000 \$46,000, respectively.

³ U.S. EPA Air Pollution Control Cost Manual, November 2017

**Table 1:
Total and Average Annual Cost of PAR 1135 by Cost Category**

Cost Categories	Present Worth Value (2019)		Annual Average (2019-2045)	
	1% Discount Rate	4% Discount Rate	1% Real Interest Rate	4% Real Interest Rate
One-Time Cost	-	-	-	-
SCR Replacement (including installation)	\$3,847,914	\$3,608,256	\$266,177	\$364,418
Diesel Internal Combustion Engines (including installation)	\$18,725,488	\$15,717,001	\$728,124	\$996,859
Natural Gas Turbines (including installation)	\$131,277,405	\$113,458,877	\$5,283,791	\$7,233,932
Permit Modifications	\$1,838,115	\$1,645,603	\$76,847	\$105,210
Recurring Costs	-	-	-	-
SCR Replacement	\$1,145,113	\$788,918	\$40,686	\$40,686
Ammonia	\$122,598	\$83,479	\$5,030	\$5,030
Total	\$156,956,633	\$135,302,135	\$6,400,655	\$8,746,135

**Table 1:
Total and Average Annual Cost of PAR 1135 by Cost Category**

Cost Categories	Present Worth Value (2019)		Annual Average (2019-2045)	
	1% Discount Rate	4% Discount Rate	1% Real Interest Rate	4% Real Interest Rate
One-Time Cost				
SCR Replacement (including installation)	\$24,384,493	\$21,190,390	\$987,794	\$1,352,369
Diesel Internal Combustion Engines (including installation)	\$18,725,488	\$15,717,001	\$728,124	\$996,859
Natural Gas Turbines (including installation)	\$131,277,405	\$113,458,877	\$5,283,791	\$7,233,932
Permit Modifications	\$773,097	\$711,479	\$33,275	\$45,557
Recurring Costs				
SCR Replacement	\$6,314,051	\$4,299,368	\$269,399	\$269,399
Ammonia	\$3,330,070	\$2,267,514	\$142,083	\$142,083
Total	\$184,804,603	\$157,644,629	\$7,444,466	\$10,040,198

Figure 1:
Annual Estimated Costs of the PAR 1135 Series by Cost Categories

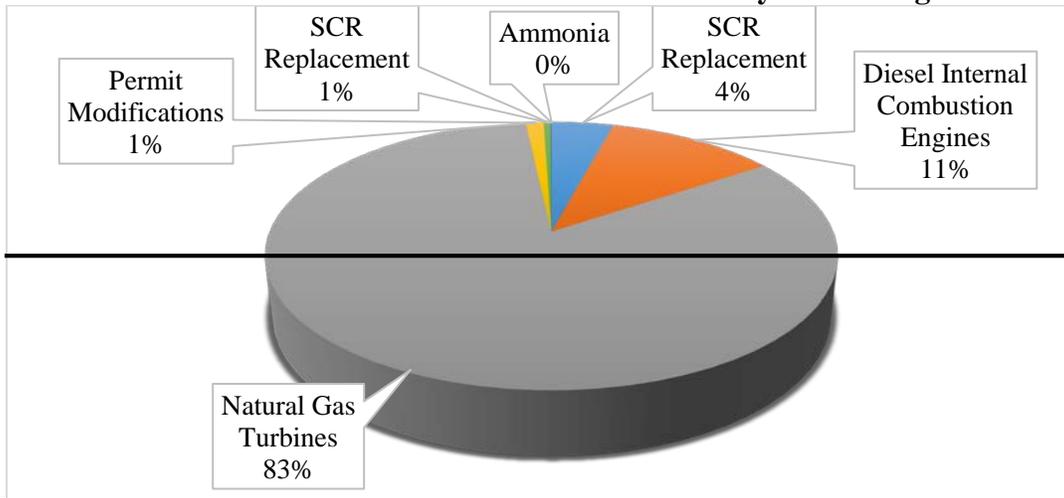
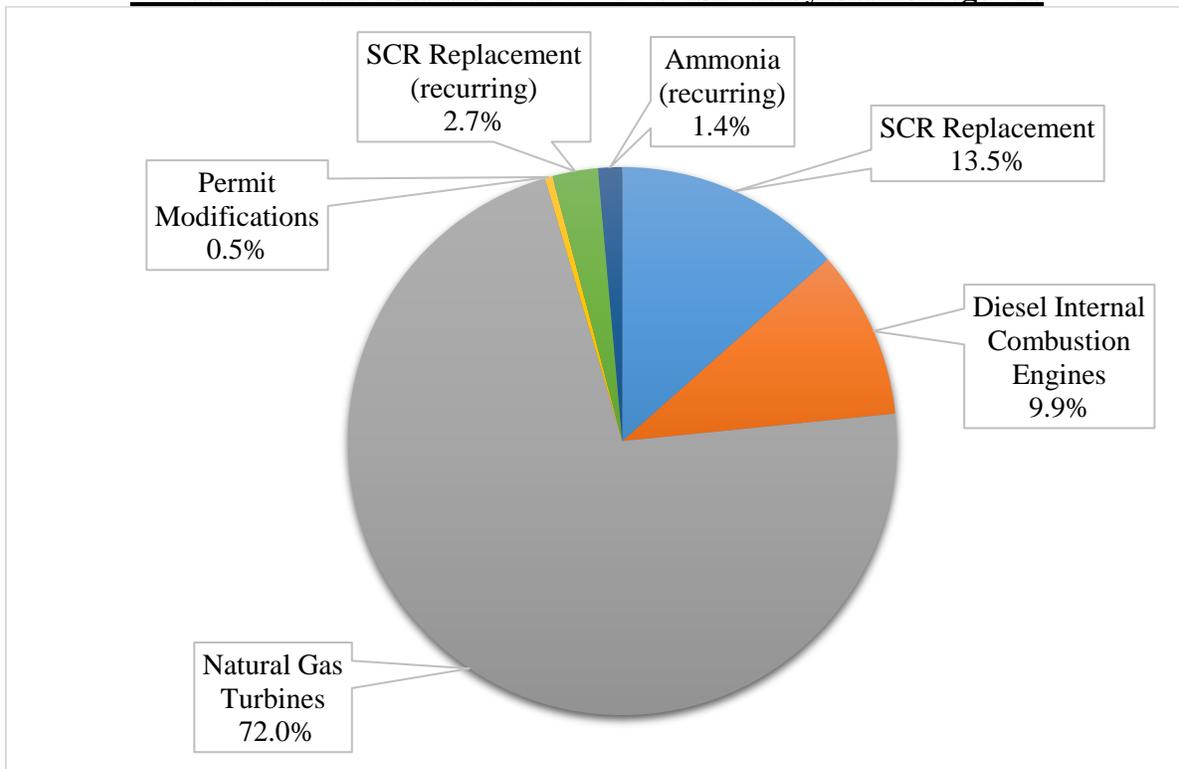


Figure 1:
Annual Estimated Costs of the PAR 1135 Series by Cost Categories



JOBS AND OTHER SOCIOECONOMIC IMPACTS

The REMI model (PI+ v2.2) was used to assess the total socioeconomic impacts of a regulatory change (i.e., the proposed rule).⁴ The model links the economic activities in the counties of Los Angeles, Orange, Riverside, and San Bernardino, and for each county, it is comprised of five interrelated blocks: (1) output and demand, (2) labor and capital, (3) population and labor force, (4) wages, prices and costs, and (5) market shares.⁵

The assessment herein is performed relative to a baseline (“business as usual”) where the proposed amendments would not be implemented. The proposed amendments would create a regulatory scenario under which the affected facilities would incur an average annual compliance costs totaling ~~\$6.4—\$8.7~~\$7.4 - \$10.0 million. Direct effects of the proposed amendments have to be estimated and used as inputs to the REMI model in order for the model to assess secondary and induced impacts for all actors in the four-county economy on an annual basis and across a user-defined horizon (2019 - 2045). Direct effects of the proposed amendments include additional costs to the affected entities and additional sales, by local vendors, of equipment, devices, or services that would meet the proposed requirements.

While compliance expenditures may increase the cost of doing business for affected facilities, the purchase and installation of additional equipment combined with spending on operating and maintenance, may increase sales in other sectors. Table 2 lists the industry sectors modeled in REMI that would either incur a cost or benefit from the compliance expenditures.⁶

As discussed earlier, the total average annual compliance costs for affected facilities by PAR 1135 was estimated to range from ~~\$6.4—\$8.7~~\$7.4 - \$10.0 million per year, depending on the real interest rate assumed (1% - 4%).

PAR 1135 is expected to result in approximately ~~88—134~~104 - 154 jobs on average forgone annually, between 2019 and 2045, depending on the real interest rate assumed (1% - 4%). The projected job loss impacts represent about ~~0.0008%—0.0012%~~0.0009 - 0.0014% of the total employment in the four-county region.

⁴ Regional Economic Modeling Inc. (REMI). Policy Insight® for the South Coast Area (70 sector model). Version 2.2, 2018.

⁵ Within each county, producers are made up of 66 private non-farm industries, three government sectors, and a farm sector. Trade flows are captured between sectors as well as across the four counties and the rest of U.S. Market shares of industries are dependent upon their product prices, access to production inputs, and local infrastructure. The demographic/migration component has 160 ages/gender/race/ethnicity cohorts and captures population changes in births, deaths, and migration. (For details, please refer to REMI online documentation at <http://www.remi.com/products/pi>.)

⁶ Improved public health due to reduced air pollution emissions may also result in a positive effect on worker productivity and other economic factors; however, public health benefit assessment requires the modeling of air quality improvements. Therefore, it is conducted for AQMPs and not for individual rules or rule amendments.

**Table 2:
Industries Incurring vs. Benefitting from Compliance Costs/Spending**

Source of Compliance Costs	REMI Industries Incurring Compliance Costs (NAICS)	REMI Industries Benefitting from Compliance Spending (NAICS)
SCR Replacement	Utilities (22)	<i>One-time Capital Cost:</i> Machinery Manufacturing (333), Construction (23)
Natural Gas Turbines		<i>One-time Capital Cost:</i> Machinery Manufacturing, Construction
Diesel Internal Combustion Engines		<i>One-time Capital Cost:</i> Machinery Manufacturing, Construction
Permit Modifications		<i>One-time Capital Cost:</i> Public Administration (92)
SCR Replacement (Maintenance)		<i>Recurring Cost:</i> Professional, Scientific, and Technical Services (541)
Ammonia		<i>Recurring Cost:</i> Chemical Manufacturing (325)

As presented in Table 3, 235-249 additional jobs could be created in the overall economy in 2022. This is mainly due to additional purchase and spending on installation of diesel internal combustion engines, natural gas turbines, and SCR replacement provided by the industries of machinery manufacturing, construction, and professional and technical services sectors. As the cost of doing business kicks in and is maintained, the positive impact of spending subsidies and jobs forgone are expected to begin. Although the utility sector would bear the entirety of the estimated total compliance costs of PAR 1135, the industry job impact is projected to be relatively small (annual average of 4-five jobs foregone between 2019 and 2045). The impact to the utility sector is expected to be small due to the fact that utilities can potentially pass the additional compliance costs on to rate payers.

In earlier years of the regional simulation, the sector of machinery manufacturing (NAICS 333), construction (NAICS 23), and professional and technical services (NAICS 541) are projected to gain jobs from additional demand for equipment installation and maintenance made by the affected facilities on average. The remainder of the projected reduction in employment would be across all

major sectors of the economy from secondary and induced impacts of the proposed amendments. In earlier years positive job impacts from the expenditures made by the affected facilities would more than offset the jobs forgone from the additional cost of doing business. Jobs foregone in the later years are due to additional costs of doing business by affected facilities.

As the cost of doing business kicks in and is maintained, and positive impact of spending gradually subsides, jobs foregone across all sectors are expected to begin. The reduction in disposable income would dampen the demand for goods and services in the local economy, thus resulting in a relatively large number of jobs forgone projected in sectors such as construction (NAICS 23), professional, scientific and support services, and retail trade (NAICS 44 - 45). A smaller number of jobs foregone are expected in wholesale trade (NAICS 42), administrative and support services (NAICS 561), and food services (NAICS 722).

Table 3:
Job Impacts of PAR 1135 (High Cost Scenario)

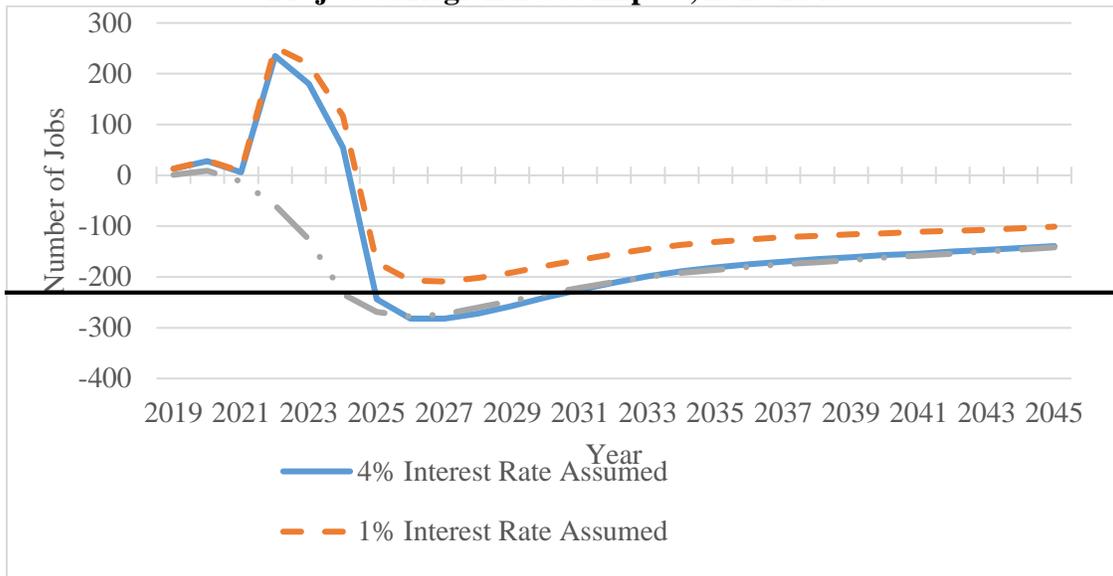
Industries (NAICS)	2020	2022	2025	2035	2045	Average Annual Jobs (2019–2045)	Average Annual Baseline (2019–2045)	% Change from Baseline Jobs
Utilities (22)	0	-1	-6	-5	-1	-4	20,469	-0.019%
Construction (23)	7	59	-93	-32	-10	-30	469,843	-0.006%
Machinery manufacturing (333)	0	21	1	-1	-1	2	19,979	0.008%
Rest of manufacturing (31-33)	0	3	-9	-2	-3	-4	557,185	-0.001%
Total manufacturing (31-33)	0	24	-8	-3	-4	-2	577,164	0.000%
Professional, scientific, and technical services (54)	2	37	-13	-34	-32	-21	922,718	-0.002%
Retail trade (44-45)	2	16	-20	-15	-12	-11	981,761	-0.001%
Administrative and support services (561)	1	12	-13	-12	-11	-9	817,224	-0.001%
Food services and drinking places (722)	1	8	-8	-11	-10	-7	729,571	-0.001%
Wholesale trade (42)	1	7	-9	-6	-5	-5	477,451	-0.001%
State and local government (92)	6	10	-5	-15	-11	-9	907,126	-0.001%
Other industries	8	39	-61	-45	-39	-34	4,798,261	-0.001%
Total	28	235	-244	-181	-139	-134	11,278,751	-0.001%

Table 2:
Job Impacts of PAR 1135 (High Cost Scenario)

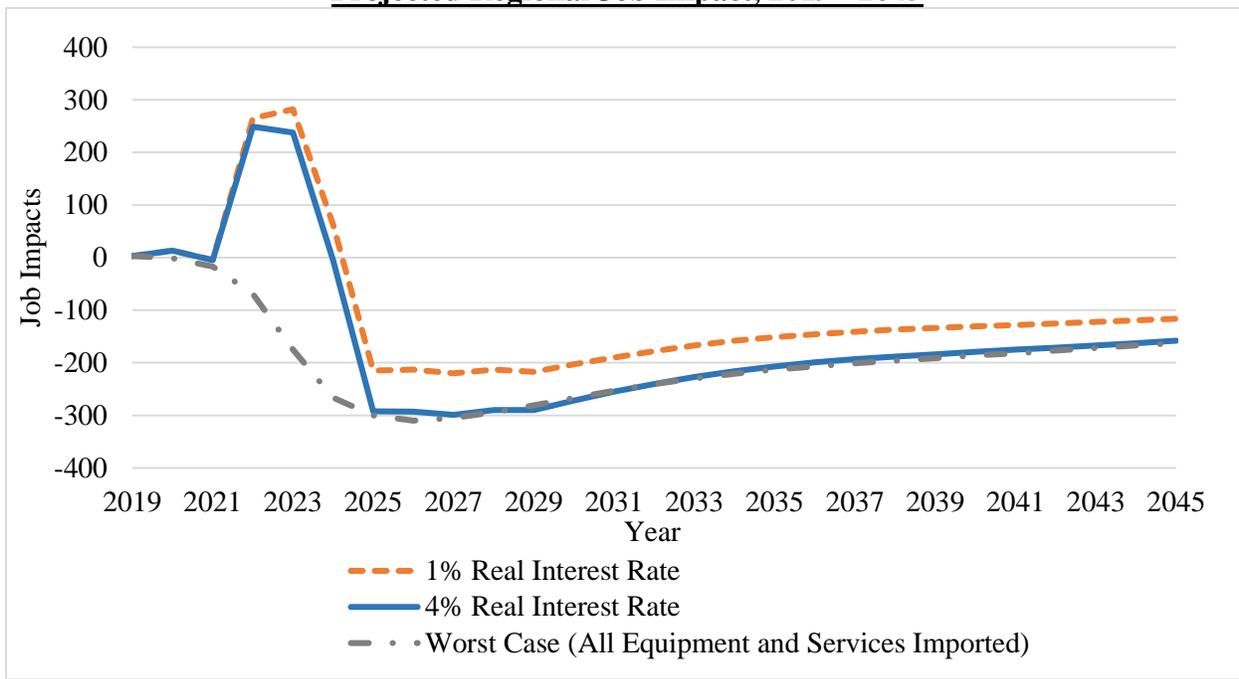
<u>Industries (NAICS)</u>	<u>2020</u>	<u>2022</u>	<u>2025</u>	<u>2035</u>	<u>2045</u>	<u>Average Annual Jobs (2019 - 2045)</u>	<u>Average Annual Baseline (2019 - 2045)</u>	<u>% Change from Baseline Jobs</u>
<u>Utilities (22)</u>	<u>0</u>	<u>-1</u>	<u>-7</u>	<u>-6</u>	<u>-1</u>	<u>-5</u>	<u>20,469</u>	<u>-0.022%</u>
<u>Construction (23)</u>	<u>1</u>	<u>58</u>	<u>-106</u>	<u>-37</u>	<u>-11</u>	<u>-35</u>	<u>469,843</u>	<u>-0.007%</u>
<u>Machinery manufacturing (333)</u>	<u>0</u>	<u>22</u>	<u>-1</u>	<u>-1</u>	<u>-1</u>	<u>2</u>	<u>19,979</u>	<u>0.009%</u>
<u>Rest of manufacturing (31-33)</u>	<u>0</u>	<u>3</u>	<u>-9</u>	<u>-4</u>	<u>-3</u>	<u>-4</u>	<u>557,185</u>	<u>-0.001%</u>
<u>Total manufacturing (31-33)</u>	<u>0</u>	<u>31</u>	<u>-16</u>	<u>-8</u>	<u>-6</u>	<u>-5</u>	<u>577,164</u>	<u>-0.001%</u>
<u>Professional, scientific, and technical services (54)</u>	<u>3</u>	<u>43</u>	<u>-22</u>	<u>-38</u>	<u>-36</u>	<u>-23</u>	<u>922,718</u>	<u>-0.003%</u>
<u>Retail trade (44-45)</u>	<u>1</u>	<u>16</u>	<u>-23</u>	<u>-17</u>	<u>-13</u>	<u>-13</u>	<u>981,761</u>	<u>-0.001%</u>
<u>Administrative and support services (561)</u>	<u>1</u>	<u>12</u>	<u>-16</u>	<u>-14</u>	<u>-12</u>	<u>-10</u>	<u>817,224</u>	<u>-0.001%</u>
<u>Food services and drinking places (722)</u>	<u>0</u>	<u>9</u>	<u>-9</u>	<u>-12</u>	<u>-11</u>	<u>-8</u>	<u>729,571</u>	<u>-0.001%</u>
<u>Wholesale trade (42)</u>	<u>0</u>	<u>8</u>	<u>-10</u>	<u>-7</u>	<u>-6</u>	<u>-6</u>	<u>477,451</u>	<u>-0.001%</u>
<u>State and local government (92)</u>	<u>4</u>	<u>10</u>	<u>-6</u>	<u>-17</u>	<u>-13</u>	<u>-11</u>	<u>907,126</u>	<u>-0.001%</u>
<u>Other industries</u>	<u>3</u>	<u>63</u>	<u>-77</u>	<u>-51</u>	<u>-27</u>	<u>-35</u>	<u>4,798,261</u>	<u>-0.001%</u>
<u>Total</u>	<u>13</u>	<u>249</u>	<u>-292</u>	<u>-207</u>	<u>-158</u>	<u>-154</u>	<u>11,278,751</u>	<u>-0.00137%</u>

Figure 2 presents a trend of job gain and losses over the 2019 - 2045 time frame. The increase in jobs in 2022 ~~are~~ is due to additional spending on installation of diesel internal combustion engines and natural gas turbines. Staff has analyzed an alternative scenario (worst case) where the affected facilities would not purchase any control or service from providers within the South Coast Air Basin. This scenario would result in an average of ~~170~~ 196 jobs forgone annually.

**Figure 2:
Projected Regional Job Impact, 2019-2045**



**Figure 2:
Projected Regional Job Impact, 2019 - 2045**



Competitiveness

The additional cost brought on by PAR 1135 would increase the cost of services rendered by the affected industries in the region. The magnitude of the impact depends on the size, diversification, and infrastructure in a local economy as well as interactions among industries. A large, diversified, and resourceful economy would absorb the impact described above with relative ease.

Changes in production/service costs would affect prices of goods produced locally. The relative delivered price of a good is based on its production cost and the transportation cost of delivering the good to where it is consumed or used. The average price of a good at the place of use reflects prices of the good produced locally and imported elsewhere.

It is projected that the utility sector, where most of the affected facilities belong, would experience a rise in its relative cost of production of 0.069% - 0.093%~~0.062%—0.085%~~ in 2025 for the low and high cost scenarios, respectively. The utility sector is also expected to experience an increase in its delivered price by 0.036% - 0.048%~~0.032%—0.044%~~ in 2025 for the low and high cost scenarios, respectively. Delivered prices that a facility may charge for specific goods or services may increase at a greater rate than predicted, allowing incurred costs to be passed through to downstream industries and end-users. The remaining sectors are likely to experience increases in the relative cost of production and relative delivered price with respect to their counterparts in the rest of the U.S.

UPDATED COST IMPACTS ASSESSMENT FOR COMPLIANCE WITH RULE 2002

Potential Impacts for NO_x RECLAIM Facilities Ready to Exit

Rule 2002(f)(9) prohibits a RECLAIM facility from selling any future compliance year RTCs upon receipt of a final determination notification that it is ready to exit the NO_x RECLAIM program. If PAR 1135 is adopted, ~~27-26~~ facilities are expected to receive an initial determination notification because, according to staff's evaluation, all of their permitted RECLAIM NO_x source equipment will be subject to this rule once PAR 1135 is adopted. Final determination notifications will not be issued, however, until New Source Review (NSR) issues are resolved. In addition, staff ~~is working on amendments to~~ has amended Rules 2001 and 2002 that will allow a facility to remain in RECLAIM to allow time for the SCAQMD to address NSR and permitting for the transition from RECLAIM to a command-and-control regulatory structure.

Among the ~~27-26~~ facilities, 17 were allocated NO_x RTCs (no cost or fee when RTCs were allocated) at the outset of the NO_x RECLAIM program (the remaining ~~12-9~~ facilities joined the NO_x RECLAIM program after its inception in 1994 and were not issued allocations). The initial allocations for the 17 facilities amounted to approximately 4.81 tons per day (TPD). Due to past adjustments including reductions in allocations or "shaves," and more importantly, the sale of these initial allocations as infinite-year block (IYB) RTCs to other NO_x RECLAIM facilities and brokers/investors, the total NO_x RTCs currently held by these ~~27-26~~ facilities is ~~4.424.39~~ TPD for

compliance years 2019 and later.⁷ At the same time, total NOx emissions from these same facilities have declined to 1.86 TPD in 2016.

If these ~~27-26~~ facilities receive final determination notifications in 2018, they will not be able to sell their NOx RTCs for compliance year 2019 and onwards. For the purpose of this analysis, it is assumed that none of the ~~27-26~~ facilities would acquire additional NOx RTCs or sell their current NOx RTC holdings of ~~4.424.39~~ TPD before receiving a final determination notification. However, it is foreseeable that at least some of these NOx RTC holdings may be sold or transferred before they are frozen due to receipt of final determination notifications. In addition, staff has committed to not issuing any final determination notifications until NSR issues are resolved. Lastly, as they pertain to SCAQMD, RTCs are not property rights. It is known to all market participants that are purchasing RTCs beyond the current compliance year is accompanied by known investment risks that are embedded within the RECLAIM programs. The risk factors include, but may not be limited to, programmatic allocation shaves, potential RTC trade freezes, and the eventual sunset of either RECLAIM program.

Since there were no costs associated with the initially allocated NOx RTCs for a RECLAIM facility, the facilities would not incur financial losses as a result of complying with Rule 2002(f)(9) if their frozen future compliance year NOx RTC holdings are at or below their respective adjusted initial allocations. However, it was estimated that, out of the total ~~4.424.39~~ TPD of future compliance year NOx RTCs currently held by the ~~27-26~~ facilities, at least ~~1.51.49~~ TPD were acquired by some of the affected facilities in addition to their initial allocations, either through purchases with positive prices or transfers at no cost. If these facilities continue to stay in the NOx RECLAIM program and their NOx emissions remain between 5% above and below their 2016 levels,⁸ then 0.10 TPD of these additionally acquired RTCs were estimated to be used for compliance purposes, with the remaining ~~1.411.39~~ TPD being potential surplus RTCs available for sale or transfer. Applying the most recent 12-month rolling average NOx RTC price for compliance year 2017 of \$2,530 per ton,⁹ the total value of all potential surplus RTCs would be approximately \$1.3 million for the compliance year 2019. These facilities can elect to transfer or sell these RTCs prior to receiving a final determination notification. If the electricity generating facility is holding these RTCs at or after the final determination notification they will not be able to sell, use, or transfer the RTCs.

In addition, ~~five-three~~ out of the ~~27-26~~ facilities are estimated to have insufficient NOx RTC holdings if they were to continue to stay in the NOx RECLAIM program and their NOx emissions remain between 5% above and below their 2016 levels. By exiting the NOx RECLAIM program, these facilities would avoid the need to acquire about 0.13 - 0.18 TPD of NOx RTCs which, if also

⁷ According to the NOx RTC holdings data as of July 31, 2018 and excluding any transactions that may have occurred after this date.

⁸ In order to estimate the number of RTCs needed for compliance in future years, it is necessary to project the emissions levels of all electricity generating facilities. We analyze three scenarios; 1) emissions are 5% below 2016 levels; 2) emissions remain at 2016 levels; and 3) emissions are 5% above 2016 levels.

⁹ 12-month rolling average of Compliance Year 2017 NOx RTCs, as calculated from July 2017 to July 2018. See Table I of "Twelve-Month and Three-Month Rolling Average Price of Compliance Years 2017 and 2018 NOx and SOx RTCs," available at: <http://www.aqmd.gov/docs/default-source/reclaim/nox-rolling-average-reports/nox-and-sox-rtcs-rolling-avg-price-cy-2017-18---jul-2018.pdf>

valued at \$2,530 per ton, would imply potential total cost-savings approximately worth \$119,000 - \$162,000 for the compliance year 2019.¹⁰

The value of potential surplus RTCs and RTCs needed to comply varies in subsequent years due to future shaves. The current schedule calls for a 2.00 TPD shave beginning in 2020, a 2.00 TPD shave beginning in 2021, and a 4.00 TPD shave beginning in 2023. For electricity generating facilities in RECLAIM, the number of projected surplus RTCs decreases from ~~4.42~~1.39 TPD in 2019 to ~~1.00~~1.06 TPD in 2022. Over the same time period, the number of RTCs needed to comply increases from 0.15 TPD in 2019 to ~~0.37~~0.33 TPD in 2022.¹¹ As a result, the total compliance year cost of freezing exiting facilities' RTCs decreases from ~~\$1.2~~\$1.1 million in 2019 to ~~\$0.6~~\$0.7 million in 2022.

The year electricity generating facilities exit RECLAIM could have a significant effect on the cumulative costs on RTCs if electricity generating facilities do not sell or transfer any RTCs prior to receiving their final determination notification. Cumulative costs of freezing RTCs range from ~~\$3.8~~\$4.0 million in 2019 to ~~\$0.6~~\$0.7 million in 2022.¹² Table 4 includes the total value of potential RTC sales foregone for all affected facilities with surplus RTCs exiting RECLAIM, as well as the potential total cost-savings for all facilities with insufficient RTC holdings for potential exit years 2019, 2020, 2021, and 2022.

The dollar figures for the potential costs and savings for facilities exiting RECLAIM listed in Table 4 are highly sensitive to the assumed RTC price of \$2,530 per ton. In general, RTC prices are highly variable, with prices typically decreasing as their expiration dates approach and during the 60 days after expiration during which they can be traded. This general trend has been repeated every year since 1994 except for compliance years 2000 and 2001 (during the California energy crisis). Prices for NOx RTCs that expired in calendar year 2017 also followed this general trend. The general declining trend of RTC prices nearing and just past expiration indicates there was an adequate supply to meet RTC demand during the final reconciliation period following the end of the compliance years. Further uncertainty has been introduced due to the Governing Board's decision to transition to a command-and-control regulatory structure.

¹⁰ Cost savings vary based on the projected emissions in compliance year 2019. The range in cost savings presented represents 5% below/above 2016 emission levels.

¹¹ Results are based on the assumption that NOx emissions in the years 2019, 2020, 2021, and 2022 remain at 2016 levels.

¹² Cumulative costs of freezing RTCs is calculated by summing the total compliance cost for current year and each subsequent year (up to and including 2022).

**— Table 4:
Forgone Sales and Cost-savings
for Affected Facilities by Potential Year of RECLAIM Exit**

	Year of RECLAIM Exit			
	2019	2020	2021	2022
Acquired RTCs potentially for sale if remain (TPD)	1.415	1.323	1.298	0.996
Potential RTC sales foregone if exiting	\$1,306,448	\$1,221,673	\$1,198,323	\$919,316
RTCs need for compliance if remain (TPD)	0.152	0.197	0.233	0.365
Total cost-savings by exiting	\$140,528	\$181,491	\$215,199	\$337,325
Total compliance year cost	\$1,165,921	\$1,040,182	\$983,124	\$581,991
Cumulative cost from exiting	\$3,771,218	\$2,605,297	\$1,565,115	\$581,991

Note: Results are based on the assumption that NOx emissions in the years 2019, 2020, 2021, and 2022 remain at 2016 levels. Assumes an RTC price of \$2,530 per ton.

**Table 4:
Forgone Sales and Cost Savings for Affected Facilities by Potential Year of RECLAIM Exit**

	Year of RECLAIM Exit			
	2019	2020	2021	2022
<u>Acquired RTCs potentially for sale if remain (TPD)</u>	<u>1.390</u>	<u>1.390</u>	<u>1.364</u>	<u>1.062</u>
<u>Potential RTC sales foregone if exiting</u>	<u>\$1,283,249</u>	<u>\$1,283,249</u>	<u>\$1,259,900</u>	<u>\$980,892</u>
<u>RTCs need for compliance if remain (TPD)</u>	<u>0.152</u>	<u>0.195</u>	<u>0.220</u>	<u>0.331</u>
<u>Total cost-savings by exiting</u>	<u>\$140,528</u>	<u>\$179,960</u>	<u>\$203,490</u>	<u>\$305,404</u>
<u>Total compliance year cost</u>	<u>\$1,142,722</u>	<u>\$1,103,289</u>	<u>\$1,056,409</u>	<u>\$675,488</u>
<u>Cumulative cost from exiting</u>	<u>\$3,977,909</u>	<u>\$2,835,187</u>	<u>\$1,731,898</u>	<u>\$675,488</u>

Note: Results are based on the assumption that NOx emissions in the years 2019, 2020, 2021, and 2022 remain at 2016 levels. Assumes an RTC price of \$2,530 per ton.

Potential NOx RTC Market Impacts

Since the SCAQMD Governing Board's March 2017 adoption of the 2016 AQMP, which includes the sunset of NOx RECLAIM, the number of NOx IYB trades has decreased significantly. The IYB price has also declined rapidly, from a 12-month rolling average of \$380,057 per ton in January 2017 to \$20,103 per ton in July 2018, which largely reflects the remaining years of the NOx RECLAIM program life that is expected by the market participants. However, the short-term price impact of facility exit on the discrete-year RTC market may not go hand-in-hand with the overall impact of the NOx RECLAIM program transition on the IYB market, as evidenced by the surge in discrete-year NOx RTC prices in 2017.

The analysis below will focus on the potential impacts to the discrete-year NOx RTC market due to compliance with Rule 2002. The potential exit of the ~~29-26~~ facilities from the NOx RECLAIM program could possibly affect the demand and supply in the NOx RTC market for compliance year 2019 and beyond, as well as the future prevailing NOx RTC prices. Therefore, the remaining NOx RECLAIM facilities may be indirectly impacted as a result.

Table 5 reports the potentially foregone market demand and supply for three different NOx emission scenarios. The first scenario assumes future NOx emissions of the ~~27-26~~ facilities would be 5% below their respective 2016 levels; the second scenario assumes the same emission levels as in 2016; and the third scenario assumes their future NOx emissions would be 5% above their respective 2016 levels. These scenarios are consistent with the variations of overall NOx emissions from the RECLAIM universe, which had a maximum year-over-year difference of approximately 5% during the period of 2011 - 2016.

The foregone market demand, as estimated by the shortage of a facility's future compliance year NOx RTC holdings for NOx emissions reconciliation, would be about 0.13 - 0.18 TPD. At the same time, the potential foregone market supply from *all* facilities with potential surplus RTC holdings is estimated at ~~2.64 - 2.78~~ 2.67 - 2.80 TPD, or about ~~1,400% - 2,050%~~ 1,420% - 2,080% greater than the estimated foregone market demand. However, some of these facilities with potential surplus NOx RTCs have never sold or transferred NOx RTCs to another NOx RECLAIM facility since the NOx RECLAIM program began in 1994. Therefore, it is reasonable to assume that they will not participate in the market even if they continue to stay in the NOx RECLAIM program. When estimated by the potential surplus NOx RTC holdings from only the facilities with a historical record of NOx RTC sales and/or transfers, the foregone market supply is estimated to be lower at ~~2.39 - 2.57~~ 2.43 - 2.60 TPD, or about 1,360% - ~~1,980%~~ 1,990% greater than the estimated foregone market demand.

Additionally, when compared to the 7.00 TPD of discrete-year NOx RTCs traded in calendar year 2017, the estimated net foregone market supply of 2.39 - 2.78 TPD represents 34% - 37% of that total traded volume.¹³

¹³ In calendar year 2017, a total of 2,556 tons of discrete year NOx RTCs were traded (2556 tons/365 days = 7.00 TPD). See page ES-2 of "Annual RECLAIM Audit Report for 2016 Compliance Year," available at <http://www.aqmd.gov/docs/default-source/reclaim/reclaim-annual-report/2016-reclaim-report.pdf>. Notice, however, that some of the RTCs might have been traded more than once in the same year.

Given the analysis above and the fact that the ~~27~~26 facilities currently account for ~~9.4%~~9.1% of annual NOx emissions and ~~19.7%~~19.5% of NOx RTC holdings in the NOx RECLAIM universe, the simultaneous transition of the ~~27~~26 PAR 1135 facilities out of the NOx RECLAIM program could potentially exert upward pressure on the discrete-year NOx RTC prices.

There are currently procedures in place to intervene if the NOx RTC price becomes excessively high. Rule 2002(f)(1)(H) specifies that in the event that the NOx RTC price exceeds \$22,500 per ton based on the 12-month rolling average, or exceeds \$35,000 per ton based on the 3-month rolling average calculated pursuant to subparagraph (f)(1)(E), the Executive Officer will report the determination to the Governing Board. If the Governing Board finds that the 12-month rolling average RTC price exceeds \$22,500 per ton or the 3-month rolling average RTC price exceeds \$35,000 per ton, then the Non-tradable/Non-usable NOx RTCs, as specified in subparagraphs (f)(1)(B) and (f)(1)(C) valid for the period in which the RTC price is found to have exceeded the applicable threshold, shall be converted to Tradable/Usable NOx RTCs upon Governing Board concurrence.

Table 5:
Potential Impacts on NOx RTC Market Demand and Supply

		NOx Emission Scenarios for Future Compliance Years		
		<i>5% Below 2016 NOx Emissions</i>	<i>Same as 2016 NOx Emissions</i>	<i>5% Above 2016 NOx Emissions</i>
A	Foregone Market Demand (TPD)	0.129	0.153	0.176
B	Foregone Market Supply (TPD) <i>— From All Facilities with Surplus RTC Holdings</i>	2.777	2.707	2.637
C	Net Foregone Market Supply (TPD) <i>(= B - A)</i>	2.648	2.554	2.461
-	Percent Difference: <i>(Supply - Demand)/Demand (= C / A)</i>	2,046%	1,673%	1,399%
D	Foregone Market Supply (TPD) <i>— From Facilities with Surplus RTC Holdings & Historical Record of RTC Sales/Transfers</i>	2.700	2.634	2.567
E	Net Foregone Market Supply (TPD) <i>(= D - A)</i>	2.571	2.481	2.391
-	Percent Difference: <i>(Supply - Demand)/Demand (= E / A)</i>	1,986%	1,625%	1,359%

Table 5:
Potential Impacts on NOx RTC Market Demand and Supply

		<u>NOx Emission Scenarios for Future Compliance Years</u>		
		<u>5% Below 2016 NOx Emissions</u>	<u>Same as 2016 NOx Emissions</u>	<u>5% Above 2016 NOx Emissions</u>
<u>A</u>	<u>Foregone Market Demand</u>	<u>0.129</u>	<u>0.152</u>	<u>0.175</u>
<u>B</u>	<u>Foregone Market Supply</u> <i>- From All Facilities with Surplus RTC Holdings</i>	<u>2.806</u>	<u>2.739</u>	<u>2.672</u>
<u>C</u>	<u>Net Foregone Market Supply (= B - A)</u>	<u>2.677</u>	<u>2.586</u>	<u>2.496</u>
	<u>Percent Difference:</u> <i>(Supply - Demand)/Demand (= C / A)</i>	<u>2,076%</u>	<u>1,700%</u>	<u>1,423%</u>
<u>D</u>	<u>Foregone Market Supply</u> <i>- From Facilities with Surplus RTC Holdings & Historical Record of RTC Sales/Transfers</i>	<u>2.729</u>	<u>2.665</u>	<u>2.601</u>
<u>E</u>	<u>Net Foregone Market Supply (= D - A)</u>	<u>2.600</u>	<u>2.513</u>	<u>2.426</u>
	<u>Percent Difference:</u> <i>(Supply - Demand)/Demand (= E / A)</i>	<u>2,017%</u>	<u>1,651%</u>	<u>1,383%</u>

Note: The supply and demand of NOx RTCs are expressed in TPD and rounded to the nearest thousandth. Percent differences are rounded to the nearest integer.

It is possible some or all facilities choose not to exit RECLAIM upon receipt of their initial determination notification. The vast majority of facilities will likely opt to remain in RECLAIM following the adoption of PAR 1135. The decision to remain in RECLAIM coincides with more favorable NSR provisions and those facilities with surplus RTCs have incentive to remain in order to sell excess credits. Conversely, those facilities with insufficient RTC holdings have incentive to opt out of RECLAIM and forego acquiring the necessary RTCs to comply with RECLAIM requirements. Under this scenario, the adoption of PAR 1135 could potentially result in a net cost savings as it pertains to the RTCs currently held by RECLAIM electricity generating facilities.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final Mitigated Subsequent Environmental Assessment for Proposed Amended Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities

October 2018

**SCAQMD No. 09142018RB
State Clearinghouse No: 2016071006**

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PREFACE

This document constitutes the Final Mitigated Subsequent Environmental Assessment (SEA) for Proposed Amended Rule (PAR) 1135 – Emissions of Oxides of Nitrogen From Electricity Generating Facilities. A Draft Mitigated SEA was released for a 30-day public review and comment period from September 18, 2018 to October 18, 2018. Analysis of PAR 1135 in the Draft Mitigated SEA did not result in the identification of any environmental topic areas that would be significantly adversely affected after mitigation. SCAQMD received one comment letter relative to the analysis in the Draft Mitigated SEA. The comment letter received relative to the Draft Mitigated SEA and the response is included in Appendix F of this Final Mitigated SEA.

In addition, subsequent to release of the Draft Mitigated SEA, modifications were made to PAR 1135. To facilitate identification, modifications to the document are included as underlined text and text removed from the document is indicated by ~~strikethrough~~. To avoid confusion, minor formatting changes are not shown in underline or strikethrough mode.

Staff has reviewed the modifications to PAR 1135 and concluded that none of the revisions constitute: 1) significant new information; 2) a substantial increase in the severity of an environmental impact; or, 3) provide new information of substantial importance relative to the draft document. In addition, revisions to the proposed project in response to verbal or written comments would not create new, avoidable significant effects. As a result, these revisions do not require recirculation of the document pursuant to CEQA Guidelines Sections 15073.5 and 15088.5. Therefore, this document now constitutes the Final Mitigated SEA for PAR 1135.

TABLE OF CONTENTS

	Page No.
CHAPTER 1 – PROJECT DESCRIPTION	
Introduction.....	1-1
California Environmental Quality Act.....	1-3
Project Location.....	1-5
Project Background	1-6
Project Description	1-6
Summary of Affected Equipment.....	1-14
Technology Overview	1-16
 CHAPTER 2 – ENVIRONMENTAL CHECKLIST	
Introduction.....	2-1
General Information.....	2-1
Environmental Factors Potentially Affected	2-3
Determination.....	2-4
Environmental Checklist and Discussion	2-5
 APPENDICES	
Appendix A: Proposed Amended Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities	
Appendix B: CalEEMod Files and Assumptions	
B-1: Facility 1	
B-2: Facility 2	
B-3: Facility 3	
Appendix C: CEQA Impact Evaluations – Assumptions and Calculations	
C-1: Construction Summary	
C-2: Operations Summary	
C-3: Construction (Facility 1)	
C-4: Operation (Facility 1)	
C-5: Construction (Facility 2)	
C-6: Construction (Facility 3)	
C-7: Operation (Facility 3)	
<u>C-8: Construction (Facility 4)</u>	
<u>C-9: Operation (Facility 4)</u>	
<u>C-10: Construction (Facility 5)</u>	
<u>C-11: Operation (Facility 5)</u>	

C-12: Construction (Facility 6)

C-13: Operation (Facility 6)

Appendix D: PAR 1135 List of Affected Facilities and NAICS Code

Appendix E: Hazards Analysis

Appendix F: Comment Letter Received on the Draft Mitigated SEA and Response to
Comment

LIST OF TABLES

Table 1-1:	Emission Limits for Boilers and Gas Turbines.....	1-9
Table 1-2:	Emissions Limits for Diesel Internal Combustion Engines.....	1-9
Table 2-1:	Electricity Generating Facilities and Electric Generating Units with Potential Modifications due to PAR 1135	2-10
Table 2-2:	SCAQMD Air Quality Significance Thresholds	2-23
Table 2-3:	Physical Actions Anticipated at Affected Facilities During Construction and Operation	2-27
Table 2-4:	Construction Equipment to Replace Catalyst Modules in One SCR Unit at Facility 1, 4, 5, and 6.....	2-31
Table 2-5:	Construction Equipment to Remove One Engine and Install One New Engine and SCR Unit at Facility 2	2-32
Table 2-6:	Construction Equipment Remove Three Boilers and Install Three New Turbines, Three New SCR Units, and One New Aqueous Ammonia Storage Tank at Facility 3.....	2-30
Table 2-7:	Peak Daily Construction Emissions During Catalyst Modules Replacement in One SCR at Facility 1, 4, 5, and 6	2-34
Table 2-8A:	Peak Daily Construction Emissions To Transport One Engine and SCR Unit to Facility 2.....	2-34
Table 2-8B:	Peak Daily Construction Emissions To Install One New Engine and SCR Unit to Facility 2.....	2-35
Table 2-9:	Peak Daily Construction Emissions to Remove Three Boilers and Install Three New Turbines, Three New SCR Units, and One New Aqueous Ammonia Storage Tank at Facility 3.....	2-35
Table 2-10:	Existing Peak Daily Operational Emissions from one Aqueous Ammonia Delivery to Facility 1, 4, 5, and 6	2-37
Table 2-11:	Peak Daily Operational Emissions – Facility 3	2-37
Table 2-12:	Peak Daily Emissions in Construction and Operation Overlap Phase	2-38
Table 2-13:	GHG Emissions From Facilities 1, 2, 3, 4, 5, and 6	2-42
Table 2-14:	Total Projected Fuel Usage for Construction Activities.....	2-52
Table 2-15:	Annual Total Projected Diesel Fuel Usage for Operational Activities.....	2-53
Table 2-16:	Estimation of Vehicle Trips (Round Trips)	2-92

LIST OF FIGURES

Figure 1-1:	Southern California Air Basins.....	1-6
-------------	-------------------------------------	-----

CHAPTER 1

PROJECT DESCRIPTION

Introduction

California Environmental Quality Act

Project Location

Project Background

Project Description

Summary of Affected Equipment

Technology Overview

INTRODUCTION

The California Legislature created the South Coast Air Quality Management District (SCAQMD) in 1977¹ as the agency responsible for developing and enforcing air pollution control rules and regulations in the South Coast Air Basin (Basin) and portions of the Salton Sea Air Basin (SSAB) and Mojave Desert Air Basin. In 1977, amendments to the federal Clean Air Act (CAA) included requirements for submitting State Implementation Plans (SIPs) for nonattainment areas that fail to meet all federal ambient air quality standards (CAA Section 172), and similar requirements exist in state law (Health and Safety Code Section 40462). The federal CAA was amended in 1990 to specify attainment dates and SIP requirements for ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), and particulate matter with an aerodynamic diameter of less than 10 microns (PM₁₀). In 1997, the United States Environmental Protection Agency (U.S. EPA) promulgated ambient air quality standards for particulate matter with an aerodynamic diameter less than 2.5 microns (PM_{2.5}). The U.S. EPA is required to periodically update the national ambient air quality standards (NAAQS).

In addition, the California Clean Air Act (CCAA), adopted in 1988, requires the SCAQMD to achieve and maintain state ambient air quality standards for ozone, CO, sulfur dioxide (SO₂), and NO₂ by the earliest practicable date. (Health and Safety Code Section 40910.) The CCAA also requires a three-year plan review, and, if necessary, an update to the SIP. The CCAA requires air districts to achieve and maintain state standards by the earliest practicable date and for extreme non-attainment areas, to include all feasible measures pursuant to Health and Safety Code Sections 40913, 40914, and 40920.5. The term “feasible” is defined in the California Environmental Quality Act (CEQA) Guidelines² Section 15364, as a measure “capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.”

By statute, the SCAQMD is required to adopt an air quality management plan (AQMP) demonstrating compliance with all federal and state ambient air quality standards for the areas under the jurisdiction of the SCAQMD³. Furthermore, the SCAQMD must adopt rules and regulations that carry out the AQMP⁴. The AQMP is a regional blueprint for how the SCAQMD will achieve air quality standards and healthful air and the 2016 AQMP⁵ contains multiple goals promoting reductions of criteria air pollutants, greenhouse gases (GHGs), and toxic air contaminants (TACs). In particular, the 2016 AQMP states that both oxides of nitrogen (NO_x) and volatile organic compounds (VOC) emissions need to be addressed, with the emphasis that NO_x emission reductions are more effective to reduce the formation of ozone and PM_{2.5}. Ozone is a criteria pollutant shown to adversely affect human health and is formed when VOCs react with NO_x in the atmosphere. NO_x is a precursor to the formation of ozone and PM_{2.5}, and NO_x emission reductions are necessary to achieve the ozone standard attainment. NO_x emission reductions also contribute to attainment of PM_{2.5} standards.

In October 1993, the SCAQMD Governing Board adopted Regulation XX – Regional Clean Air Incentives Market (RECLAIM) to reduce NO_x and oxides of sulfur (SO_x) emissions from high

¹ The Lewis-Presley Air Quality Management Act, 1976 Cal. Stats., Ch. 324 (codified at Health and Safety Code Section 40400-40540).

² The CEQA Guidelines are codified at Title 14 California Code of Regulations Section 15000 *et seq.*

³ Health and Safety Code Section 40460(a).

⁴ Health and Safety Code Section 40440(a).

⁵ SCAQMD, Final 2016 Air Quality Management Plan, March 2017. <http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2016-aqmp>

emitting facilities. The RECLAIM program was designed to take a market-based approach to achieve emission reductions, as an aggregate. The RECLAIM program was created to be equivalent to achieving emissions reductions under a command-and-control approach, but by providing facilities with the flexibility to seek the most cost-effective solution to reduce their emissions. The market-based approach used in RECLAIM was based on using a supply-and-demand concept, where the cost to control emissions and reduce a facility's emissions would eventually become less than the diminishing supply of NO_x RECLAIM trading credits (RTCs). However, analysis of the RECLAIM program over the long term has shown that the ability to achieve actual NO_x emission reductions has diminished, due to a large amount of RTCs resulting from shutdowns being re-introduced into the market prior to amendments to Rule 2002 in October 2016 to address this issue.

In the 2016 AQMP, Control Measure CMB-05 - Further NO_x Reductions from RECLAIM Assessment, committed to additional NO_x emission reductions of five tons per day to occur by 2025. Also, the SCAQMD Governing Board directed staff to implement an orderly sunset of the RECLAIM program to achieve the additional five tons per day. Thus, CMB-05 committed to a process of transitioning NO_x RECLAIM facilities to a command-and-control regulatory structure and ensure that the applicable equipment will meet Best Available Retrofit Control Technology (BARCT) level equivalency as soon as practicable.

On July 26, 2017, California State Assembly Bill (AB) 617 was approved by the Governor, which addresses community monitoring and non-vehicular air pollution (criteria pollutants and toxic air contaminants). AB 398, a companion to AB 617, was also approved, and extends California's cap-and-trade program for reducing greenhouse gas (GHG) emissions from stationary sources. AB 617 also contains an expedited schedule for implementing BARCT for cap-and-trade facilities. Industrial source RECLAIM facilities that are in the cap-and-trade program are subject to the requirements of AB 617. Under AB 617, Districts are required to develop by January 1, 2019, an expedited schedule for the implementation of BARCT no later than December 31, 2023, with the highest priority given to older, higher-polluting units that will need retrofit controls installed.

As a result of control measure CMB-05 from the 2016 AQMP as well as ABs 617 and 398, SCAQMD staff has been directed by the Governing Board to begin the process of transitioning the current regulatory structure for NO_x RECLAIM facility emissions to an equipment-based command-and-control regulatory structure per SCAQMD Regulation XI – Source Specific Standards. SCAQMD staff conducted a programmatic analysis of the RECLAIM equipment at each facility to determine if there are appropriate and up-to-date BARCT NO_x limits within existing SCAQMD command-and-control rules for all RECLAIM equipment. This analysis concluded that command-and-control rules would need to be adopted and/or amended to reflect current BARCT and provide implementation timeframes for achieving BARCT. Consequently, SCAQMD staff determined that RECLAIM facilities should not exit unless their NO_x emitting equipment is subject to an adopted future BARCT rule.

As such, SCAQMD has proposed new amendments to Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities. Rule 1135 applies to electric power-generating units (e.g., diesel internal combustion engines located on Santa Catalina Island, boilers, and turbines, or internal combustion engines) that generate electric power for distribution, with the exception of cogeneration turbines or and emergency internal combustion engines) at electricity generating facilities that are ~~market participants of the California Independent System Operator Corporation (California ISO), a municipal or public electric utility, or an electric utility located on~~

~~Santa Catalina Island investor—owned electric utilities, publicly owned electric utilities, or have a generation capacity of at least 50 megawatts of electrical power. Proposed Amended Rule (PAR) 1135 will update the NO_x emissions limits for electric power-generating units to reflect current BARCT and provide implementation timeframes to achieve compliance. PAR 1135 also proposes to revise the continuous emissions monitoring (CEMS) requirements for current Rule 1135 facilities and to add new monitoring, reporting, and recordkeeping requirements for those facilities exiting the NO_x RECLAIM program. Additionally, PAR 1135 establishes exemptions from specific provisions. Implementation of the proposed project is estimated to reduce NO_x emissions by 0.91.7 tons per day by January 1, 2024 after implementation of the BARCT limits and the Clean Water Act once-through cooling provision, which is expected to be achieved by the retrofitting or repowering of existing electric generating units with BARCT units that can achieve the revised NO_x emission limits, or the retiring of existing electric power generating units with BARCT units that can achieve the revised NO_x emission limits.~~

CALIFORNIA ENVIRONMENTAL QUALITY ACT

The March 2017 Final Program Environmental Impact Report (EIR) for the 2016 AQMP determined that the overall implementation of CMB-05 has the potential to generate adverse environmental impacts in seven topic areas – air quality, energy, hazards and hazardous materials, hydrology and water quality, noise, solid and hazardous waste, and transportation. More specifically, the March 2017 Final Program EIR evaluated the impacts from installation and operation of additional control equipment and selective catalytic reduction (SCR) or selective non-catalytic reduction (SNCR) equipment potentially resulting in construction emissions, increased electricity demand, hazards from additional ammonia transport and use, increase in water use and wastewater discharge, changes in noise volume, generation of solid waste from construction and disposal of old equipment, and catalysts replacements, as well as changes in traffic patterns and volume. For the entire 2016 AQMP, the analysis concluded that significant and unavoidable adverse environmental impacts from the project are expected to occur after implementing mitigation measure for the following environmental topic areas: 1) aesthetics from increased glare and from the construction and operation of catenary lines and use of bonnet technology for ships; 2) construction-related air quality and GHGs; 3) energy (due to increased electricity demand); 4) hazards and hazardous materials due to (a) increased flammability of solvents; (b) storage, accidental release, and transportation of ammonia, (c) storage and transportation of liquefied natural gas (LNG); and (d) proximity to schools; 5) hydrology (water demand); 6) construction noise and vibration; 7) solid construction waste and operational waste from vehicle and equipment scrapping; and 8) transportation and traffic during construction and during operation on roadways with catenary lines and at the harbors. Since significant adverse environmental impacts were identified, mitigation measures were identified and applied. However, the March 2017 Final Program EIR concluded that the 2016 AQMP would have significant and unavoidable adverse environmental impacts even after mitigation measures were identified and applied. As such, mitigation measures were made a condition of project approval and a Mitigation Monitoring and Reporting Plan was adopted. Findings were made and a Statement of Overriding Considerations was prepared and adopted for that project.

BARCT is statutorily required in California Health and Safety Code section 40406 to be based on “environmental, energy, and economic impacts.” A BARCT analysis was conducted and completed as part of the rule development process for PAR 1135⁶. PAR 1135 revises NO_x

⁶ SCAQMD’s rule development webpage for PAR 1135 contains all of the documentation relied upon for the BARCT analysis and can be found here: <http://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules#1135>.

emission limits to reflect current BARCT for electric power-generating units. PAR 1135 also ~~revises the continuous emissions monitoring (CEMS) requirements and establishes new~~ monitoring, reporting, and recordkeeping requirements. Under PAR 1135, electric generating facilities that were originally subject to the NOx RECLAIM program will now be subject to the emission limits for NOx as well as other contaminants. PAR 1135 is estimated to reduce NOx emissions by ~~0.91.7~~ tons per day after the implementation of the BARCT limits and the Clean Water Act once-through-cooling provision by January 1, 2024, from electricity generating facilities located throughout the entire SCAQMD jurisdiction and will provide an overall environmental benefit to air quality. While reducing emissions of NOx and other contaminants will create an environmental benefit, activities that facility operators may undertake to comply with PAR 1135 may also create secondary adverse environmental impacts.

SCAQMD staff has determined that PAR 1135 contains new information of substantial importance which was not known and could not have been known at the time the Final Program EIR was certified for the March 2017 adoption of the 2016 AQMP (referred to herein as the March 2017 Final Program EIR). PAR 1135 is not expected to create new significant effects, after mitigation, that were not discussed in the previously certified March 2017 Final Program EIR for the 2016 AQMP.

Thus, analysis of the proposed project indicates that the type of CEQA document appropriate for the proposed project is a Mitigated Subsequent Environmental Assessment (SEA). The Mitigated SEA is a substitute CEQA document, prepared in lieu of a Mitigated Subsequent Negative Declaration with no unmitigated significant impacts (CEQA Guidelines Section 15162(b)), pursuant to SCAQMD's Certified Regulatory Program (CEQA Guidelines Section 15251(1); codified in SCAQMD Rule 110). The Mitigated SEA is also a public disclosure document intended to: 1) provide the lead agency, responsible agencies, decision makers and the general public with information on the environmental impacts of the proposed project; and 2) be used as a tool by decision makers to facilitate decision making on the proposed project.

Thus, SCAQMD, as lead agency for the proposed project, has prepared this Final Mitigated SEA pursuant to its Certified Regulatory Program. PAR 1135 is not expected to have statewide, regional or areawide significance; therefore, a CEQA scoping meeting is not required to be held for the proposed project pursuant to Public Resources Code Section 21083.9(a)(2). Moreover, a CEQA scoping meeting is not required for a Mitigated SEA under CEQA Guidelines Section 15162(d). Further, mitigation measures are proposed to avoid or reduce any potentially significant adverse impacts. [CEQA Guidelines Section 15252(a)(2)(B)]. The Final Mitigated SEA includes a project description in Chapter 1 and an Environmental Checklist in Chapter 2. The Environmental Checklist provides a standard tool to identify and evaluate a project's adverse environmental impacts, and the analysis concluded that no significant adverse impacts, after mitigation, would be expected to occur if PAR 1135 is implemented.

The Draft Mitigated SEA ~~is being~~ was released for a 30-day public review and comment period from September 18, 2018 to October 18, 2018. The SCAQMD received one comment letter ~~Any comments on the analysis presented in this Draft Mitigated SEA received during the public comment period on the analysis presented in the Draft Mitigated SEA. The comment letter and the response are~~ will be responded to and included in the Final Mitigated SEA (see Appendix F).

Subsequent to release of the Draft Mitigated SEA, minor modifications were made to PAR 1135 in response to verbal or written comments. Staff has reviewed the modifications to PAR 1135 and

concluded that none of the modifications constitute: 1) significant new information; 2) a substantial increase in the severity of an environmental impact; or, 3) provide new information of substantial importance relative to the draft document. In addition, revisions to PAR 1135 in response to verbal or written comments would not create new, avoidable significant effects. As a result, these revisions do not require recirculation of the Draft Mitigated SEA pursuant to CEQA Guidelines Sections 15073.5 and 15088.5. Thus, the Draft Mitigated SEA has been revised to reflect the aforementioned modifications such that it is now a Final Mitigated SEA.

The March 2017 Final Program EIR for the 2016 AQMP, upon which this Final Mitigated SEA relies, is available from the SCAQMD's website at: <http://www.aqmd.gov/home/research/documents-reports/lead-agency-scaqmd-projects/scaqmd-projects---year-2017>. This document may also be obtained by visiting the Public Information Center at SCAQMD Headquarters located at 21865 Copley Drive, Diamond Bar, CA 91765; or by contacting Fabian Wesson, Public Advisor by phone at (909) 396-2039 or by email at PICrequests@aqmd.gov.

Prior to making a decision on the adoption of PAR 1135, the SCAQMD Governing Board must review and certify the Final Mitigated SEA as providing adequate information on the potential adverse environmental impacts that may occur as a result of adopting PAR 1135.

PROJECT LOCATION

Rule 1135 applies to RECLAIM and non-RECLAIM electricity generating facilities that are located throughout SCAQMD's jurisdiction and are ~~market participants of California ISO, owned or operated by an investor-owned electric utility, a publicly owned electric utility, or have electric generating units with a combined generation capacity of 50 megawatts or more of electrical power for distribution in the state or local electrical grid system by a municipality, or located on Santa Catalina Island located throughout SCAQMD's jurisdiction.~~ SCAQMD staff has identified 34-31 electricity generating facilities that would be subject to PAR 1135. All 34-31 facilities are categorized using North American Industry Classification System (NAICS) code and summarized in Appendix D of this Final Mitigated SEA. Appendix D also contains the list of affected facilities and their locations within SCAQMD's jurisdiction.

The SCAQMD has jurisdiction over an area of approximately 10,743 square miles, consisting of the four-county Basin (Orange County and the non-desert portions of Los Angeles, Riverside and San Bernardino counties), and the Riverside County portions of SSAB and MDAB. The Basin, which is a subarea of SCAQMD's jurisdiction, is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto mountains to the north and east. It includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. The Riverside County portion of the SSAB is bounded by the San Jacinto Mountains in the west and spans eastward up to the Palo Verde Valley. A federal nonattainment area (known as the Coachella Valley Planning Area) is a subregion of Riverside County and the SSAB that is bounded by the San Jacinto Mountains to the west and the eastern boundary of the Coachella Valley to the east (see Figure 1-1).

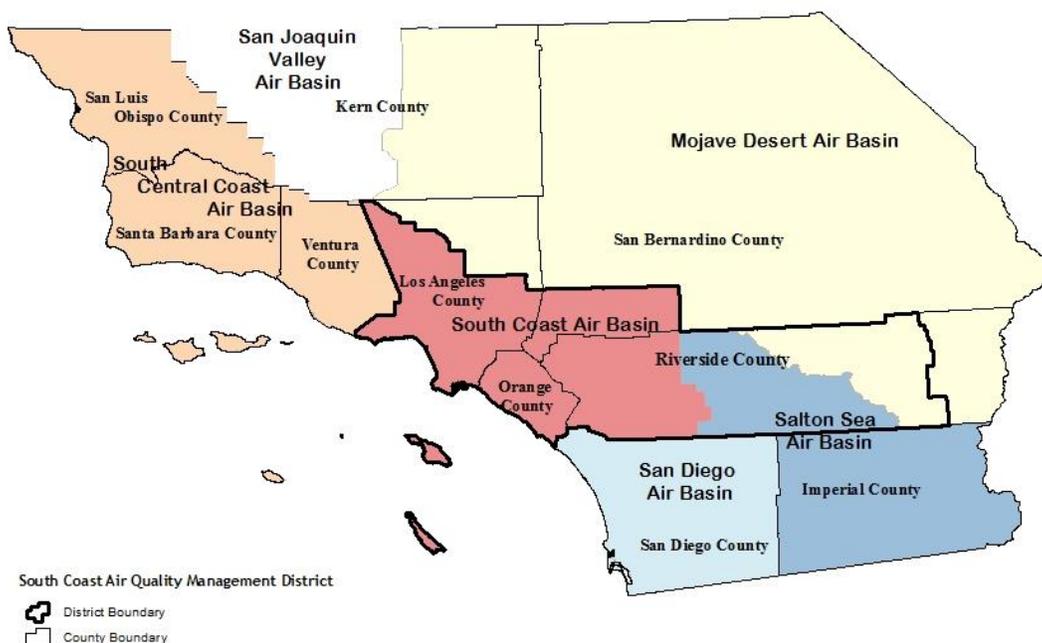


Figure 1-1
Southern California Air Basins

PROJECT BACKGROUND

Rule 1135 – ~~Emissions of Oxides of Nitrogen from Electric Power Generating Boilers~~, was adopted by the SCAQMD Governing Board in 1989 and applied to electric power generating steam boiler systems, repowered units, and alternative electricity generating sources. Rule 1135 set a system-wide average NO_x emission limit of 0.25 pound (lb) per megawatt (MW)-hour (hr) and a daily NO_x emissions cap for each utility system. Rule 1135 established interim emissions performance levels with a 1996 final compliance date. Additionally, Rule 1135 required Emission Control Plans and continuous emissions monitoring systems (CEMS).

Rule 1135 was submitted to the California Air Resources Board (CARB) for review, prior to submittal to the Environmental Protection Agency (EPA), Region IX, for revision to the State Implementation Plan (SIP). In March 1990, CARB staff informed SCAQMD that the rule, as adopted, was lacking specificity in critical areas of implementation and enforcement, and was therefore, considered incomplete for submission to EPA as a SIP revision.

As such, Rule 1135 was later amended in December 1990 to ~~modify the rule's title to "Emissions of Oxides of Nitrogen from Electric Power Generating Systems"~~ and to resolve many of the implementation and enforceability issues raised by EPA. In particular, the December 1990 amendments to Rule 1135 included accelerated dates for retrofitting equipment with air pollution control equipment, unit-by-unit NO_x emission limits, modified compliance plan and monitoring requirements, a requirement for computerized telemetering, and an amended definition of alternative resources.

Rule 1135 was amended again on July 19, 1991; this amendment contained system-wide emission rates, daily emission caps, annual emission caps, oil burning, cogeneration requirements, and a

modeling and BARCT analysis. EPA approved the July 1991 version of Rule 1135 into the SIP on August 11, 1998.

PROJECT DESCRIPTION

If adopted, PAR 1135, as part of the on-going transition for facilities in the NO_x RECLAIM program to a command-and-control regulatory structure, would apply to RECLAIM and non-RECLAIM electricity generating facilities that contain electric ~~power~~-generating units (e.g., boilers, ~~gas~~-turbines with the exception of cogeneration turbines, or and diesel internal combustion engines that generate electric power for distribution and are located on Santa Catalina Island with the exception of emergency internal combustion engines), ~~with the exception of cogeneration turbines) and are market participants of the California ISO, a municipal or public electric utility, or an electric utility located on Santa Catalina Island.~~

The following is a detailed summary of the key elements contained in PAR 1135. A draft of PAR 1135 can be found in Appendix A.

Purpose – Subdivision (a)

PAR 1135 proposes new subdivision (a) to establish the rule's purpose, which is to reduce NO_x emissions from electric generating units (diesel internal combustion engines located at Santa Catalina Island, boilers, combined cycle turbines, and simple cycle turbines) at electricity generating facilities.

Applicability - Subdivision (b)

PAR 1135 proposes to revise the rule's applicability to include electric ~~power~~-generating units at electricity generating facilities (see subdivision (c) for these definitions), instead of electric power generating systems. In the current version of Rule 1135, electric power generating systems consist of boilers, turbines, other advanced combustion resources, and alternative equipment that are capable of producing power and owned by or under contract to sell power to an electric utility. PAR 1135 proposes to replace the term electric power generating system with the term electric ~~power~~-generating units, including diesel internal combustion engines located on Santa Catalina Island, boilers, combined cycle gas turbines, and simple ~~gas~~-cycle gas turbines at electricity generating facilities. As explained in the definition of electricity generating facilities in subdivision (c), an electricity generating facility is an investor-owned electric utility, publicly owned electric utility, or a facility with 50 megawatts or more of combined generation capacity. ~~that generates electrical power and is owned or operated by or under contract to sell power to California Independent System Operator Corporation, a municipal or public electric utility, or an electric utility on Santa Catalina Island.~~ However, PAR 1135 will not apply to cogeneration turbines or units located at landfills, petroleum refineries, or publicly owned treatment works.

Definitions - Subdivision (c)

PAR 1135 proposes to delete obsolete definitions as well as add new definitions and modify existing definitions to clarify and explain key concepts. Please refer to PAR 1135 in Appendix A for each definition.

The following outdated definitions are proposed to be deleted:

Advanced Combustion Resource

Alternative Resource

Approved Alternative or Advanced Combustion Resource

Alternative Resource or Advanced Combustion Resource Breakdown

Cogeneration Facility
 Displace
 District-Wide Daily Limits
 Electric Power Generating System
 Replacement Unit
 Start-Up or Shutdown
 Useful Thermal Energy

The following definitions are proposed to be modified:

Boiler
 Daily
 Force Majeure Natural Gas Curtailment
 NOx Emissions

The following definitions are proposed to be added:

Annual Capacity Factor
 Cogeneration Turbine
 Combined Cycle Gas Turbine
 Duct Burner
~~Electricity Generating Facility~~
 Electric Power-Generating Unit
Electricity Generating Facility
~~Former RECLAIM NOx Source~~
Internal Combustion Engine
Investor-Owned Electric Utility
 Landfill
~~Non-RECLAIM NOx Source~~
~~Municipal or Public Electric Utility~~
 Petroleum Refinery
Publicly Owned Electric Utility
 Publicly Owned Treatment Works
 RECLAIM NOx Source
 SCAQMD-Wide Daily Limits
 Shutdown
 Simple Cycle Gas Turbine
 Start-up
 Tuning

Emissions Limits – Renumbered Subdivision (d)

Subdivision (c) is proposed to be renumbered to subdivision (d) and renamed from “Emission Limitations” to “Emissions Limits.” Due to the proposed deletion of the term electric power generating system throughout PAR 1135, any reference to electric power generating system is also proposed to be deleted from subdivision (d) and replaced with the terms “electric power-generating unit” or “electricity generating facility”, as appropriate.

New paragraph (d)(1) proposes to add the following emissions limits for boilers and gas-turbines with a compliance date of no later than January 1, 2024. It is important to note that the NOx and ammonia emissions limits would not apply during start-up, shutdown, and tuning.

**Table 1-1
Emissions Limits for Boilers and Gas Turbines**

Equipment Type	NOx (ppmv)	Ammonia (NH3) Slip (ppmv)	Oxygen Correction (% dry)
Boiler	5	5	3
Combined Cycle Gas Turbine and Associated Duct Burner	2	5	15
Simple Cycle Gas Turbine	2.5	5	15

Subparagraph (d)(1)(A) proposes to average the emissions limits over a sixty minute rolling average for boilers and turbines. specify that these emission limits are not applicable during start-up, shutdown, and tuning periods. Requirements for start-up, shutdown, and tuning for each electric power generating unit shall be included in the SCAQMD permit. The SCAQMD permit shall include limits for duration, mass emissions, and number of start ups, shutdowns, and, if applicable, tunings.

Subparagraph (d)(1)(B) proposes to average the emission limits over a sixty minute rolling average for units that are installed after the date of adoption.

Subparagraph (d)(1)(C) proposes to require electric power generating units allow boilers and gas turbines that are installed or issued permits to construct prior to the date of adoption to retain the averaging time requirements specified on the SCAQMD permit if they time does not exceed a three hour average for NOx and one hour average for ammonia.

New paragraph (d)(2) and subparagraph (d)(2)(A) proposes to add the following emission limits for diesel-fueled internal combustion engines with a compliance date no later than January 1, 2024. It is important to note that the NOx, ammonia, carbon monoxide, volatile organic compounds, and particulate matter emissions limits would not apply during start-up, shutdown, and tuning.

**Table 1-2
Emissions Limits for Diesel Internal Combustion Engines
Located on Santa Catalina Island**

Equipment Type	NOx (ppmv)	Ammonia (NH3) Slip (ppmv)	CO (ppmv)	VOC (ppmv)	PM (lbs/mmbtu)	Oxygen Correction (% dry)
Internal Combustion Engine (Diesel)	45	5	250	30	0.0076	15

Subparagraph (d)(2)(B) proposes to allow internal combustion engines located on Santa Catalina Island that are installed prior to the date of adoption to retain the averaging time requirements

specified on the SCAQMD permit, but cannot exceed one hour for NOx, ammonia, and volatile organic compounds and 15 minutes for carbon monoxide.

Paragraph (d)(3) proposes to require the owner or operator of an electricity generating facility to incorporate start-up, shutdown, and tuning requirements into the SCAQMD permit for each electric generating unit; each electric generating unit must have these requirements incorporated into their permits by January 1, 2024. Subparagraphs (d)(3)(A) through (d)(3)(D) establish a maximum time limits for start-up, shutdown, and tuning requirements. For boilers, each start-up cannot exceed ten hours and each shutdown cannot exceed six hours. Combined cycle gas turbines cannot exceed four hours for each non-cold start-up, six hours for each cold start-up, thirty minutes for each shutdown, and ten hours per year for tuning. For simple cycle gas turbines, the time limits are one hour for each start-up, forty-five minutes for each shutdown, and ten hours per year for tuning. The time limits for internal combustion engines are one hour for each start-up and thirty minutes for each shutdown.

SubParagraph (d)(4)(2)(B) proposes an alternative compliance approach effective dates for an owner or operator of an electricity generating facility electric power generating units located on Santa Catalina Island with diesel internal combustion engines and provides an option that, in lieu of meeting the emission limits in subparagraph (d)(2)(A), a Compliance Plan may be submitted.

Under subparagraph (d)(4)(A) this provision, the owner or operator of a diesel internal combustion engines located on Santa Catalina may must submit a written notification to the Executive Officer by January 1, 2022 compliance plan by January 1, . The owner or operator must include a description of the proposed technologies, schedule of permits submittals, and timeframes for ordering and installing equipment, as well as adopt a permit condition to limit the total amount of NOx emissions to 13 tons. 2022 to extend the emission limits effective date, provided emission reductions are substantially greater than if the engines were simply replaced with Tier IV compliant diesel engines. If the owner or operator can provide specifications of electric power generating units or other electrical generation or transmission equipment to provide power to Santa Catalina Island that will reduce emissions by an additional 33% to a total of 20 tons per year, then the effective date will be delayed unit January 1, 2025. If the specifications demonstrate that emissions will be reduced by 67% or more, then the effective date will be further delayed until January 1, 2026.

To further incentivize lower emitting electricity generating technologies, paragraph (d)(5) allows Santa Catalina Island an extension of up to three years for compliance with the applicable emissions limits (see Table 1-2) or the alternative compliance approach. The extension is allowed for both compliance approaches as the facility may initially pursue lower emitting technologies later to discover that hurdles to permitting, land acquisition, or some other extenuating circumstance prevents the implementation of the lower emitting technology. The extension includes a mitigation fee of \$100,000 per year. The mitigation fee will be used to fund future studies and projects designed to reduce criteria pollutants and toxic air contaminant emissions. The amount for the mitigation fee is approximately the amount that a facility would otherwise have had to pay to go through the variance process, including excess emissions fees, notification fees, and other procedural fees. In order to qualify for the extension, the facility must first reduce some NOx emissions. If the facility wants an extension from having to install two new diesel internal combustion engines, the two existing diesel internal combustion engines must be retrofitted or repowered to 45 ppmv NOx at 15% oxygen on a dry basis by January 1, 2023. If requesting an

extension for the alternative compliance approach, Santa Catalina Island must reduce their actual mass emissions of NO_x to 50 tons for compliance year 2022 and to 40 tons for compliance year 2023. The extension request is required to be submitted at least one year before the compliance deadlines and must identify the units that need a time extension, the reason an extension is needed, and the progress to date of the project. The criteria for approving an extension requires the Executive Officer to determine if the facility correctly followed the procedures for submitting an extension request and if the extension is necessary due to extenuating circumstances. Examples of extenuating circumstances can include engineering designs, construction plans, land acquisition contracts, permit applications, and purchase orders that impact scheduling.

Several obsolete provisions in subdivision (d) are proposed for deletion. In particular, the District-wide daily and annual limits on emissions rate and emissions cap for Southern California Edison, Los Angeles Department of Water and Power, the City of Burbank, and the City of Pasadena, are proposed to be removed from paragraphs (c)(1)-(d)(3) and (d)(4)(c)(2) because these facilities entered the RECLAIM program in October 1993 which made the limits in Rule 1135 obsolete for these facilities.

Paragraphs (d)(3) and (d)(4) are also proposed to be retained to allow the City of Glendale to continue to comply with their current SCAQMD-wide daily and annual limits on emissions rates and emissions cap for the interim period until the emissions limitations in paragraph (d)(1) go into effect.

Subparagraph (d)(5)(C) proposes to relocate the reference to “violation of any requirements” from paragraphs (c)(1), ~~and (c)(2), (c)(3), and (c)(4)~~ to subparagraphs (d)(6)(eA)(d)(3) and (d)(4) and (d)(6)(B). In addition, paragraph (d)(6)(C) proposes to delete the provision pertaining to the applicability to approved alternative or advance combustion resources. All references throughout the current version of Rule 1135 rule to “approved alternative or advanced combustion resource” is proposed to be replaced with the term “electric power generating unit.”

Several additional obsolete provisions are proposed for deletion. In particular, in the current version of Rule 1135, the dates in paragraphs (d)(6) and (d)(7) have passed and as such, the obsolete dates are proposed for removal in PAR 1135. Further, subparagraph (d)(8) in the current version of Rule 1135 states that a violation of any unit specific NO_x emission limit in a permit or a compliance plan constitutes a violation of Rule 1135. However, since permits and compliance plans are enforceable, this language is redundant and therefore, proposed for deletion in PAR 1135.

Compliance Plans – Old Subdivision (d)

Old subdivision (d) specific to compliance plans is proposed to be deleted and replaced with renumbered subdivision (d) – Emissions Limits, because the compliance dates have passed and compliance plans will no longer be necessary.

Monitoring, Recordkeeping, and Reporting (Subdivision (E))Measurements – Subdivision (e)

All provisions in current Rule 1135 subdivision (e) are proposed for deletion. Once Rule 113 is adopted, all Rule 1135 equipment will transition to Rule 113 for Monitoring, Recordkeeping, and Reporting (MRR). For the interim period, the intention of the PAR 1135 MRR is to maintain current MRR for all facilities and minimize the RECLAIM reporting requirements.

All the provisions in the current Rule 1135 subdivision (e) will be deleted because there are only three units that are currently subject to the monitoring requirements in subdivision (e) and these three units also conduct monitoring in accordance with SCAQMD Rule 218 – Continuous Emission Monitoring.

SCAQMD has committed to developing a new, separate rule, to be named Rule 113, to address monitoring, recordkeeping, and reporting requirements (MRR) for NO_x and SO_x emissions. Once Rule 113 is adopted, all Rule 1135 equipment will be required to transition to complying with the MRR requirements in Rule 113.

Paragraph (e)(1) applies to current NO_x RECLAIM sources and these sources will be required to demonstrate compliance with the NO_x emissions limits in accordance with SCAQMD Rule 2012 – Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Nitrogen (NO_x) Emissions.

Paragraph (e)(2) applies to former RECLAIM facilities and these facilities will be required to demonstrate compliance with the NO_x emissions limits, in accordance with SCAQMD Rule 2012, except for the following provisions that reference reporting requirements or that do not apply to electric generating units:

- (c)(3) – facility permit holder of a major NO_x source
- (c)(4) – Super Compliant Facilities
- (c)(5) – facility Permit holder of a facility which is provisionally approved for NO_x Super Compliant status
- (c)(6) – after final approval of Super Compliant status
- (c)(7) – facility designated as a NO_x Super Compliant Facility
- (c)(8) – super Compliant Facility exceeds its adjusted allocations
- (d)(2)(B) – install, maintain and operate a modem
- (d)(2)(C) – equipment-specific emission rate or concentration limit
- (d)(2)(D) – monitor one or more measured variables as specified in Appendix A
- (d)(2)(E) – comply with all applicable provisions of subdivision (f)
- (e) – NO_x Process Unit
- (g)(5) – system is inadequate to accurately determine mass emissions
- (g)(6) – sharing of totalizing fuel meters
- (g)(7) – equipment which is exempt from permit requirements pursuant to Rule 219 - Equipment Not Requiring A Written Permit Pursuant to Regulation II
- (g)(8) – rule 2012 and Appendix A
- (h)(1) – facilities with existing CEMS and fuel meters as of October 15, 1993
- (h)(2) – interim emission reports
- (h)(4) – installation of all required or elected monitoring and reporting systems
- (h)(5) – existing or new facility which elects to enter RECLAIM or a facility which is required to enter RECLAIM
- (h)(6) – new major NO_x source at an existing facility
- (i) – Recordkeeping
- (k) – Exemption
- (l) – Appeals

- Reported Data and Transmitting/Reporting Frequency requirements from Appendix A – “Protocol for Monitoring, Reporting and Recordkeeping for Oxides of Nitrogen (NOx) Emissions”

Paragraph (e)(3) applies to non-RECLAIM facilities and these facilities have the option to comply with 40 CFR Part 75 or Rule 218 – Continuous Emission Monitoring, in order to demonstrate with the NOx emission limits. If a facility elects to comply with 40 CFR Part 75, the facility must calculate NOx in ppmv pursuant to Rule 218.

Paragraph (e)(4) applies to the City of Glendale and requires this facility to calculate their NOx emissions in accordance with their approved CEMS plan in order to demonstrate compliance with the SCAQMD-wide daily limits on emissions rates and emissions caps and annual emissions limits.

Paragraph (e)(5) applies to the diesel internal combustion engines located on Santa Catalina Island. To demonstrate compliance with the carbon monoxide and volatile organic compound emissions limits, the facility must comply with SCAQMD Rule 1110.2 – Emissions from Gaseous- and Liquid-Fueled Engines, subdivision (f) – Monitoring, Testing, Recordkeeping and Reporting and subdivision (g) – Test Methods. To demonstrate compliance with the particulate matter emission limit, the facility must conduct yearly source tests according to SCAQMD Method 5.1 – Determination of Particulate Matter Emissions from Stationary Sources Using a Wet Impingement Train or SCAQMD Method 5.2 – Determination of Particulate Matter Emissions from Stationary Sources using Heated Probe and Filter. Yearly is defined as a period of twelve consecutive months determined on a rolling basis with a new twelve month period beginning on the first day of each calendar month.

Paragraph (e)(6) applies to electric generating units with catalytic control devices. To demonstrate compliance with the ammonia emission limit, subparagraph (e)(6)(A) requires facilities to conduct source testing according to SCAQMD Method 207.1 – Determination of Ammonia Emissions from Stationary Sources. Source testing will be quarterly for the first twelve months of operation and then annually thereafter if four consecutive quarterly source tests determines that the unit is in compliance with the ammonia limit. If there is a failed annual test, then the facility must conduct quarterly source tests until four consecutive tests pass before resuming annual source tests. In lieu of ammonia source testing, subparagraph (e)(6)(B) allows facilities to utilize ammonia CEMS certified under an approved SCAQMD protocol. At this time, SCAQMD is in the process of finding a host site for an ammonia CEMS demonstration project. Upon successful demonstration, SCAQMD will develop an ammonia CEMS protocol. Once an ammonia CEMS protocol is developed then SCAQMD intends to require ammonia CEMS instead of source testing to demonstrate compliance with the ammonia limits. At this time, an ammonia CEMS is approximately \$60,000. The provision that allows for ammonia CEMS instead of source testing allows facilities to transition to ammonia CEMS once a protocol is ready, but is not specifically required by Rule 1135.

Paragraph (e)(7) requires that former NOx RECLAIM sources and other NOx sources not in the RECLAIM program maintain all of their monitoring, recordkeeping, and reporting documents for five years and make it available to SCAQMD upon request. However, for data gathered and computed for 15 minute intervals or less, those records need to be maintained for a minimum of 48 hours.

In addition to demonstrating compliance with the emissions limits of the rule, paragraph (e)(8) requires former NOx RECLAIM sources and other NOx sources not in the RECLAIM program to maintain an operating log for each electric generating unit. The log must include all of the following: time and duration of start-ups and shutdowns; total hours of operation; quantity of fuel; cumulative hours of operation to date for the calendar year; megawatt hours of electricity produced; and net megawatt hours of electricity produced.

~~Revisions to subdivision (e) are proposed to reflect that facilities subject to the current version of Rule 1135 will be required to continue to comply with existing monitoring and recordkeeping requirements in Rule 1135 while RECLAIM facilities will continue to comply with Rule 2012—Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Nitrogen (NOx) Emissions, excluding reporting requirements.~~

~~Paragraph (e)(1) proposes to replace the requirement for a Remote Terminal Unit (RTU) with a data acquisition system (DAS).~~

~~Paragraph (e)(2) proposes to replace all references to the District's "CEMS Requirement Document for Utility Boilers," dated July 19, 1991 with SCAQMD's "CEMS Requirement Document for Electric Power Generating Units," dated [Date of Adoption]. Further, all references in paragraph (e)(2) to boiler, replacement unit and approved alternative or advanced combustion resource is proposed to be replaced with the term "electric power generating unit."~~

~~Old paragraph (e)(3) is proposed to be deleted for consistency with paragraph (e)(1) which proposes to delete the requirements applicable to RTUs.~~

~~Old paragraph (e)(4) is also proposed for deletion because the compliance dates have passed.~~

~~The provisions for backup data gathering and maintaining a storage system is proposed for removal from paragraph (e)(6) because proposing to require a DAS in paragraph (e)(1) makes these requirements no longer necessary.~~

~~Old paragraph (e)(5) (which has been renumbered in PAR 1135 as paragraph (e)(3)) proposes to replace all references to the District's "CEMS Requirement Document for Utility Boilers," dated July 19, 1991 with SCAQMD's "CEMS Requirement Document for Electric Power Generating Units," date [Date of Adoption]. Further, all references in renumbered paragraph (e)(3) to boiler, replacement unit, and approved alternative or advanced combustion resource are proposed to be replaced with the term "electric power generating unit."~~

~~Old paragraph (e)(6) is proposed for deletion because the compliance dates have passed.~~

~~Old paragraph (e)(7) (which has been renumbered in PAR 1135 as paragraph (e)(4)) proposes to require CEMS data to be recorded by a DAS. Renumbered paragraph (e)(4) proposes to replace all references to the District's "CEMS Requirement Document for Utility Boilers," dated July 19, 1991 with SCAQMD's "CEMS Requirement Document for Electric Power Generating Units," dated [Date of Adoption]. Further, all references in renumbered paragraph (e)(4) to boiler, replacement unit and approved alternative or advanced combustion resource is proposed to be replaced with the term "electric power generating unit."~~

~~Old paragraph (e)(8) (which has been renumbered in PAR 1135 as paragraph (e)(5)) proposes to replace all references to the District’s “CEMS Requirement Document for Utility Boilers,” dated July 19, 1991 with SCAQMD’s “CEMS Requirement Document for Electric Power Generating Units,” dated [Date of Adoption]. Further, all references in renumbered paragraph (e)(5) to boiler, replacement unit and approved alternative or advanced combustion resource are proposed to be replaced with the term “electric power generating unit.”~~

~~New paragraph (e)(6) proposes to allow RECLAIM facilities to continue to comply with specific monitoring and recordkeeping requirements in Rule 2012 — Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Nitrogen (NOx) Emissions, in lieu of complying with paragraphs (e)(1) through (e)(5). In particular, RECLAIM facilities will be required to comply with all of Rule 2012 except for the requirements in the following provisions:~~

- ~~(e)(3) — facility permit holder of a major NOx source~~
- ~~(e)(4) — Super Compliant Facilities~~
- ~~(e)(5) — facility Permit holder of a facility which is provisionally approved for NOx Super Compliant status~~
- ~~(e)(6) — after final approval of Super Compliant status~~
- ~~(e)(7) — facility designated as a NOx Super Compliant Facility~~
- ~~(e)(8) — super Compliant Facility exceeds its adjusted allocations~~
- ~~(d)(2)(B) — install, maintain and operate a modem~~
- ~~(d)(2)(C) — equipment specific emission rate or concentration limit~~
- ~~(d)(2)(D) — monitor one or more measured variables as specified in Appendix A~~
- ~~(d)(2)(E) — comply with all applicable provisions of subdivision (f)~~
- ~~(e) — NOx Process Unit~~
- ~~(f) — Permit Conditions for Large Sources and Process Units,~~
- ~~(g)(5) — system is inadequate to accurately determine mass emissions~~
- ~~(g)(6) — sharing of totalizing fuel meters~~
- ~~(g)(7) — equipment which is exempt from permit requirements pursuant to Rule 219 — Equipment Not Requiring A Written Permit Pursuant to Regulation II~~
- ~~(g)(8) — Rule 2012 and Appendix A~~
- ~~(h)(1) — facilities with existing CEMS and fuel meters as of October 15, 1993~~
- ~~(h)(2) — interim emission reports~~
- ~~(h)(4) — installation of all required or elected monitoring and reporting systems~~
- ~~(h)(5) — existing or new facility which elects to enter RECLAIM or a facility which is required to enter RECLAIM~~
- ~~(h)(6) — new major NOx source at an existing facility~~
- ~~(j) — Source Testing~~
- ~~(k) — Exemption~~
- ~~(l) — Appeals~~

~~Reported Data and Transmitting/Reporting Frequency requirements from Appendix A — “Protocol for Monitoring, Reporting and Recordkeeping for Oxides of Nitrogen (NOx) Emissions”~~

Use of Liquid Petroleum Fuel - Subdivision (f)

Due to the proposed deletion of the term “electric power generating system” throughout PAR 1135, subdivision (f) proposes to replace all references to “electric power generating system” with “electric power-generating unit” or “electricity generating facility,” as appropriate. Also, subdivision (f) proposes to replace the term “boiler” with the term “electric power-generating unit.”

Paragraph (f)(1) proposes to clarify the applicability of the NO_x emission limits in subdivision (d) on days of force majeure natural gas curtailment when the use of liquid petroleum fuel is required. Old subparagraph (f)(1)(B) is proposed to be deleted because all units will have to comply with the emission limits specified in subdivision (d). Also, old subparagraph (f)(1)(D) is proposed to be removed because it is redundant to the requirements in old subparagraph (f)(1)(C), which will be renumbered as subparagraph (f)(1)(B).

Old paragraph (f)(2) proposes to ~~delete~~ modify the hours allowed for fuel readiness testing for a boiler to burn liquid petroleum fuel ~~for~~ from up to 24 hours in any calendar year to not exceed sixty minutes per week; weekly readiness testing is necessary to assure reliability of the oil firing units in case of emergencies. Several requirements are being added to readiness testing. The first added requirement, subparagraph (f)(2)(B), states that during readiness testing and when burning liquid petroleum fuel exclusively, the NO_x emission limit for an electric generating unit must comply with the limit in the permit for that unit ~~can only occur once the equipment has reached the emissions limitation in paragraph (d)(1) while running on natural gas and must start within 60 minutes of achieving that emissions limitation.~~ Additionally, subparagraph (f)(2)(C) states that readiness testing can only occur once the equipment has achieved the emission limits in paragraph (d)(1) while running on natural gas and must start within 60 minutes of achieving that emission limits, the number of units to one unit at a time that can be operated on liquid petroleum during readiness testing. For clarification purposes, subparagraph (f)(2)(D) defines readiness testing as the time from when the equipment is switched from natural gas to liquid petroleum fuel to the time the equipment is switched back to natural gas.

New paragraph (f)(3) is proposed to be added to allow liquid petroleum fuel to be used during source testing, initial certification of CEMS, and semi-annual Relative Accuracy Test Audits (RATAs). The RATA tests must be conducted at the same time as weekly readiness testing.

~~New paragraph (f)(4) is proposed to be added to prohibit the installation of internal combustion engines capable of burning liquid petroleum as the primary fuel at an electricity generation facility.~~

Municipal Bubble Options – Old Subdivision (g)

~~The subdivision regarding Municipal Bubble Options in the current version of Rule 1135 subdivision (g), is proposed to be deleted because PAR 1135 will instead establish emission limits applicable to each unit and will delete the emission limits for electric generating systems. The old subdivision (g) regarding Municipal Bubble Options is proposed to be removed because these requirements became obsolete once facilities entered into RECLAIM.~~

Exemptions – Renumbered Subdivision (g)

All of the exemptions in the current version of Rule 1135 are proposed to be deleted because these exemptions were based on old technology and are no longer necessary.

Instead, PAR 1135 proposes to include several new exemptions as follows: Subparagraph (g)(1) proposes to exempt existing combined cycle gas turbines at 2.5 ppmv NO_x and 5 ppmv ammonia concentration or less averaged over 60 minutes at 15% oxygen on a dry basis from the emission limits in paragraph (d)(1), provided that the NO_x and ammonia limits, start-up, shutdown, and tuning requirements, and averaging times remain on the current permit. The permit limits cannot exceed three hours for each non-cold start-up, six hours for each cold start-up, thirty minutes for each shutdown, and ten hours per year for tuning.

Paragraph (g)(2) proposes to exempt once-through-cooling electric generating units that are subject to the Clean Water Act Section 316(b) from the emission limits in paragraph (d)(1) provided that NO_x and ammonia limits, start-up, shutdown, and tuning requirements, and averaging times remain on the current permit. In order to qualify for this exemption, emissions from boilers must be less than 7 ppmv NO_x and 10 ppmv ammonia averaged over 720 hours at 3% oxygen on a dry basis and start-up and shutdown must be less than 12 hours for each instance. Similarly, for turbines to qualify for this exemption, the emissions cannot exceed 2 ppmv NO_x and 5 ppmv ammonia averaged over 60 minutes at 15% oxygen on a dry basis, three hours for each non-cold start-up, six hours for each cold start-up, thirty minutes for each shutdown and ten hours per year for tuning. Additionally, the units must comply with their current compliance dates established pursuant to Table 1 of Section 2(B) of the State Water Resources Control Board's Statewide Water Quality Control Policy on the Use of Coastal Estuarine Waters for Power Plant Cooling (Once-Through-Cooling Policy) implementing Section 316(b) of the Clean Water Act. Notifications of shutdown and retirement dates must be submitted to the SCAQMD for each once-through-cooling electric generating unit by January 1, 2023. This provision coordinates the compliance date for the NO_x concentration limit in PAR 1135 with the compliance dates in Clean Water Act Section 316(b). Additionally, the provision avoids stranded assets of adding pollution controls for an interim period of time. If the once-through-cooling electric generating unit is granted an extension by the State Water Resources Control Board, the facility must notify SCAQMD of the extension within three months. This extension is not applicable to facilities that have utilized the Modeling and Offset Exemptions in SCAQMD Rule 1304 – Exemptions, paragraph (a)(2) and the associated replacement electric generating unit is in operation as the emission credits transferred to the replacement unit are no longer available.

Paragraph (g)(3) proposes to exempt existing diesel internal combustion engines at 51 ppmv NO_x and 10 ppmv ammonia averaged over 60 minutes at 15% oxygen on a dry basis from the emission limits in paragraph (d)(2), with the condition that the units keep their NO_x, ammonia, carbon monoxide, volatile organic compounds, and particulate matter limits, start-up and shutdown requirements, and averaging times on the current permit. However the emission limits shall not exceed 250 ppmv averaged over 15 minutes at 15% oxygen on a dry basis for carbon monoxide, 30 ppmv averaged over 60 minutes at 15% oxygen on a dry basis for volatile organic compounds, 5.32 tons per year for particulate matter, sixty minutes for each start-up, and fifteen minutes for each shutdown.

To address low-use electrical power generating units, a low-use provision, paragraph (g)(4) proposes to allow low-use equipment to continue operating without retrofit provided that the annual capacity factor limits are not exceeded; the annual capacity factor limits are included in the permit; and the NO_x and ammonia limits, start-up, shutdown, and tuning requirements, and averaging times on the current permit. Low-use gas turbines will be prohibited from exceeding the following limits: 24 ppmv NO_x and 20 ppmv ammonia averaged over 60 minutes at 15% oxygen on a dry basis, three hours for each start-up, six hours for each cold start-up, thirty minutes for each shutdown, and ten hours per year for tuning. Similarly, low-use boilers will be prohibited from exceeding the following limits: 82 ppmv NO_x and 10 ppmv ammonia averaged over 720 hours at 3% oxygen on a dry basis and 12 hours for each start-up and shutdown. The annual capacity factor, paragraph (c)(1), is defined as the ratio between the actual annual heat input and the annual maximum heat input if operated continuously over one year excluding usage during an Emergency Phase of the California Energy Commission Energy Emergency Response Plan or a Governor-declared State of Emergency or Energy Emergency. The annual capacity factor limits for gas turbines in subparagraph (g)(4)(A) is less than twenty-five percent in one calendar year and

less than ten percent averaged over three years. For boilers, the low-use provision in subparagraph (g)(4)(B) establishes the annual capacity factor limit as less than two and one half percent in one calendar year and less than one percent averaged over three years. In order to obtain the low-use exemption, subparagraph (g)(4)(C) requires that an application for the low-use exemption be submitted by July 1, 2022. Subparagraph (g)(4)(D) requires the annual capacity factor to be determined annually and submitted to the Executive Officer no later than March 1 following the reporting year. If a unit exceeds the annual capacity factor, clause (g)(4)(E)(i) states that the owner or operator is subject to a Notice of Violation for each year of exceedance and for each annual and/or three year exceedance. Subclause (g)(4)(E)(ii)(C) requires that after two years of the date of reported exceedance, the unit must come into compliance with the emission limits in paragraph (d)(1). The following interim milestone requirements are included in subclauses (g)(4)(E)(ii)(A) and (g)(4)(E)(ii)(B): submitting a permit application within six months from the date of reported exceedance and a CEMS plan within six months from the date of permit application submittal.

Paragraph (g)(5) proposes to exempt internal combustion engines on Santa Catalina Island from the requirements in subdivision (f) – Use of Liquid Petroleum Fuel. Subdivision (h) is proposed to be renumbered to subdivision (g) and all of the exemptions in originally in subdivision (h) are proposed for deletion because they were based on old technology and are no longer necessary.

Instead, PAR 1135 proposes to include several new exemptions. Paragraph (g)(1) proposes to exempt combined cycle gas turbines capable of achieving 2.5 ppmv NO_x or less at 15% O₂ dry from the emissions limitations proposed in paragraph (d)(1), provided that the units keep their NO_x and ammonia limits, start-up, shutdown, and tuning requirements, and averaging times on the current permit. This exemption is proposed because, according to the BARCT assessment, it is not cost effective for combined cycle gas turbines at 2.5 ppmv NO_x at 15% O₂ dry to reduce their limits to 2 ppmv at 15% O₂ dry.

Paragraph (g)(2) proposes to exempt boilers capable of achieving at 7.0 ppmv NO_x or less at 3% O₂ dry from the emissions limitations in paragraph (d)(1), provided that the units adhere to their NO_x and ammonia limits, start-up, shutdown, and tuning requirements, and averaging times on the current Permit. This exemption is proposed because the BARCT assessment determined that it is not cost effective for boilers at 7.0 ppmv NO_x at 3% O₂ dry to reduce their limits to 5.0 ppmv at 3% O₂ dry. Further, other units that are at or below 7.0 ppmv NO_x may have different ammonia limits that were evaluated during the permitting process and since these units will not be modified or re-permitted, the ammonia limits from the permits should be maintained.

Paragraph (g)(3) proposes to exempt once-through cooling boilers that are subject to the Clean Water Act Section 316(b) from the emissions limitations in paragraph (d)(1) provided that the units keep their NO_x and ammonia limits, start-up, shutdown, and tuning requirements, and averaging times on the current permit and the units comply with their current shutdown dates established in the Clean Water Act Section 316(b). To coordinate the compliance dates for achieving the PAR 1135 NO_x concentration limit with the compliance dates in Clean Water Act Section 316(b) and to avoid stranded assets from installing air pollution control equipment for an interim period of time, paragraph (g)(3) proposes to also require a submittal of shutdown and retirement plans for each once-through-cooling boiler by January 1, 2023.

Paragraph (g)(4) proposes to exempt diesel internal combustion engines capable of achieving 51 ppmv NO_x at 15% O₂ dry. This exemption is proposed because the BARCT assessment determined that it is not cost effective for internal combustion engines (diesel) at 51 ppmv NO_x at

~~15% O₂ dry to reduce their limits to 45 ppmv at 15% O₂ dry. Therefore, PAR 1135 paragraph (g)(5) proposes to exempt engines capable of achieving 51 ppmv NO_x or less at 15% O₂ dry from the emissions limitations in paragraph (d)(1), provided that the units keep their NO_x, ammonia, CO, VOCs, and PM limits, start-up, shutdown, and tuning requirements, and averaging times on the current permit.~~

~~Paragraph (g)(5) proposes to allow low-use electrical power generating units to continue operating without being required to retrofit the units with air pollution control equipment provided that historical data can demonstrate that the annual capacity factor limits have not been exceeded; that the annual capacity factor limits are included in the permit; and the unit continues to comply with the NO_x and ammonia limits, start-up, shutdown, and tuning requirements, and averaging times on the current permit. The term “annual capacity factor” is defined in paragraph (c)(1) as the ratio between the measured annual input and the annual maximum heat input if operated continuously over one year. The annual capacity factor limits for gas turbines in subparagraph (g)(5)(A) are proposed to be less than 25% in one calendar year and 10% averaged over three years. The low-use provision for boilers as proposed in subparagraph (g)(5)(B) would establish the annual capacity factor limit to be less than 2.5% in one calendar year and 1.0% averaged over three years. In order to obtain the low-use exemption, subparagraph (g)(5)(C) proposes to require an application for the low-use exemption to be submitted by May 1, 2019 provided that the unit can demonstrate compliance with the annual capacity factor limits using data from calendar years 2016, 2017, and 2018. In addition, the annual capacity factor shall be determined annually and submitted to the Executive Officer no later than April 1st following the reporting year. Usage during an Emergency Phase of the California Energy Commission Energy Emergency Response Plan or a declared State of Emergency or Energy Emergency by the Governor will not be used to calculate the annual capacity factor. In the event that a unit exceeds the annual capacity factor, then subparagraph (g)(5)(E) proposes to restrict the unit from operating unless it is compliance with the emission limits in paragraph (d)(1). Other interim milestones, including a requirement for submitting a permit application within nine months from the date of reported exceedance and a CEMS plan within six months from the date of permit application submittal, are also included in this proposed exemption.~~

~~Paragraph (g)(6) proposes to exempt internal combustion engines that are located on Santa Catalina Island from the requirements in subdivision (f) – Use of Liquid Petroleum Fuel.~~

Continuous Emission Monitoring Systems (CEMS) Requirements Document for Electric Power Generating Units

~~The document specifying CEMS requirements that are included in the current version of Rule 1135 are proposed to be removed because the MRR requirements have been updated and no longer reference the document. for CEMS are proposed to be updated in PAR 1135 in order to be consistent with the revised definitions proposed in subdivision (e). Section 4.2.1 for Final Reporting Procedures is also proposed to be revised to remove the requirements applicable to RTUs. Instead, the CEMS requirements propose to require that the records demonstrating compliance be maintained for five years and provided to the Executive Officer upon request. Additionally, the provisions pertaining to Cogeneration Systems are proposed for removal because it is no longer necessary to measure thermal energy.~~

SUMMARY OF AFFECTED EQUIPMENT

There are ~~34~~³¹ electricity generating facilities with approximately of ~~132~~¹²² pieces of equipment located in SCAQMD's jurisdiction that are subject to PAR 1135. The universe of affected

equipment is comprised of the following: 1) six diesel-fueled internal combustion engines located at a single facility; 2) ~~24-23~~ natural gas boilers located at eight facilities; 3) ~~67-60~~ natural gas simple cycle turbines located at 21 facilities; and 4) ~~35-22~~ natural gas combined cycle turbines equipped with 11 associated duct burners located at ~~13-11~~ facilities. As part of the rule development process, SCAQMD staff conducted a BARCT assessment for electric ~~power~~-generating units at each of the ~~34-31~~ electricity generating facilities^{7, 8}. The BARCT assessment concluded that technology is currently available to meet BARCT NOx concentration limits in PAR 1135 for electric ~~power~~ generating units.

Of the ~~34-31~~ facilities that are in the PAR 1135 universe, ~~34-25~~ facilities were identified as not needing to modify their existing equipment in order to comply with PAR 1135. In particular, the electric ~~power~~-generating units at these facilities are not expected to require modifications to comply with PAR 1135 because the electric ~~power~~-generating units at the aforementioned facilities: 1) meet updated BARCT; 2) are currently eligible for a low-use exemption; or 3) are scheduled by facility operators to be either shut down or repowered due to outside factors as described below that are not a direct consequence of PAR 1135. The following list describes electric ~~power~~-generating units that would not need modifications or replacement in order to comply with PAR 1135:

- 1) Internal Combustion Engines: One diesel internal combustion engine installed on Santa Catalina Island approximately 23 years ago is not expected to need modifications to comply with PAR 1135 since it would not be cost-effective to meet the proposed limits.
- 2) Natural Gas Boilers: There are ~~24-23~~ natural gas boilers in the PAR 1135 universe ~~that are used for generating electricity, 17-16 of which are subject to the Federal Water Pollution Control Act (commonly referred to as the Clean Water Act) Section 316(b)⁹ once-through-cooling (OTC) provisions which are scheduled for shutdown. The OTC provisions established compliance dates for existing power plant operators to implement measures to greatly reduce impingement mortality and entrainment of marine life. Compliance with the OTC provisions is expected to lead to the retirement of most of the natural gas boilers used to generate electricity in transmission-constrained areas of Southern California. Four Two additional natural gas boilers have been identified by their facility operators as scheduled for shutdown for business decisions and two will maintain low-use provisions. Thus, because ~~24-18~~ of the ~~24-23~~ boilers will not be operating by 2024 and 2 will maintain low-use provisions, the analysis in this Mitigated SEA assumes that these ~~24-20~~ boilers would not need to be modified in order to comply with PAR 1135.~~
- 3) Natural Gas Combined Cycle Gas Turbines: There are ~~35-22~~ natural gas combined cycle gas turbines that were installed in 2005 or later, ~~24-15~~ of which currently meet the updated BARCT NOx concentration limits in PAR 1135; thus, no additional modifications will be necessary for these ~~24-15~~ units to comply with PAR 1135. The remaining ~~nine-seven~~ units are also not expected to need modifications as a result of PAR 1135 because it is not cost-effective to retrofit these combined cycle gas turbines. However, a facility that operates two of the remaining seven units is expected to update those units to comply with BARCT limits due to a business decision.

⁷ See Appendix D for a complete list of facilities affected by PAR 1135.

⁸ See the PAR 1135 ~~July-October 2018 Preliminary Draft~~Final Staff Report for the BARCT Assessment.

⁹ Federal Water Pollution Control Act. Accessed on August 14, 2018. <https://www.epa.gov/sites/production/files/2017-08/documents/federal-water-pollution-control-act-508full.pdf>

- 4) Natural Gas Simple Cycle Gas Turbines: There are ~~67~~60 natural gas simple cycle gas turbines in the PAR 1135 universe, 37 of which are not expected to need modifications to comply with PAR 1135 since they already meet the updated BARCT NO_x concentration limits. The remaining ~~30~~23 units also will not need modifications in order to comply with PAR 1135 because it is not cost-effective to retrofit them.

Of the ~~34~~31 facilities that are in the PAR 1135 universe, ~~only three~~six facilities were identified as candidates for modifying their existing equipment in order to comply with PAR 1135. Of the six facilities three facilities are required to comply with PAR 1135 and three other facilities have elected to comply with the updated BARCT NO_x concentration limits, as a business decision, even if their units qualify for the low-use provision or it was determined that retrofitting or replacing their units was not cost effective. In particular, the following electric ~~power~~-generating units would require modifications in order to meet the updated BARCT NO_x concentration limits in PAR 1135:

- 1) Internal Combustion Engines: There are six diesel internal combustion engines located on Santa Catalina Island, five of which were installed more than 33 years ago and are cost-effective to be modified or replaced.
- 2) Natural Gas Boilers: Of the ~~24~~23 natural gas boilers in the PAR 1135 universe, there are seven that may need modifications in order to comply with PAR 1135 if they continue operating. However, two of the seven are currently not operating and will utilize the low-use provision in PAR 1135 with the, ~~and~~ two others are scheduled to be shut down by their operators in 2020. ~~Further,~~ The other three natural gas boilers are operated by a municipality and would need to comply with PAR 1135. Prior to the development of PAR 1135, the operator presented a project to their city council proposing plans to shut down the three natural gas boilers and repower them with four natural gas turbines¹⁰. The operator also proposed to make other major revisions to their facility in addition to the repowering portion of the proposed project. In response to the proposal, the city council asked the operator to explore the feasibility, reliability, and cost-effectiveness of implementing a clean/renewable energy solution in lieu of some or all of the proposed repowering project. At the time of this publication, the operator has not indicated whether the project to repower the natural gas boilers will go forward or will be revised to include clean/renewable energy. If the operator's proposal is not finalized prior to the adoption of PAR 1135, then the three natural gas boilers would need to comply with PAR 1135, and compliance would require modifications to the existing boilers, replacement of the three existing boilers with three new boilers, or repowering the existing three boilers with one or more natural gas turbines.
- 3) Natural Gas Combined Cycle Gas Turbines: Of the nine natural gas combined cycle units that are not expected to need modifications as a result of PAR 1135 a municipality that operates two units has tentatively scheduled, due to a business decision so they are not required to utilize the low-use provision, to have the catalyst in each of their two existing selective catalytic reduction (SCR) systems replaced with more efficient catalyst to comply with the updated BARCT NO_x concentration limits in PAR 1135.
- 4) Natural Gas Simple Cycle Gas Turbines: Of the ~~30~~22 low-use natural gas simple cycle gas turbines, ~~a two municipalities~~municipality operates ~~four~~ten units that are tentatively

¹⁰ FEIR Grayson Repowering Project. March 2018. Section 3.0 Project Description, Page 3.1.
<http://graysonrepowering.com/#final-eir>

scheduled¹¹ to have the catalyst in each of the ~~four-ten~~ existing selective catalytic reduction (SCR) systems replaced with more efficient catalyst to comply with the updated BARCT NOx concentration limits in PAR 1135. One municipality operates one unit that would require modifications to the catalyst in its existing SCR system to comply with the updated BARCT NOx concentration limits in PAR 1135.

Thus, based on the BARCT assessment conducted for PAR 1135, only three electricity generating facilities would be expected to have existing electric ~~power~~-generating units that would require potential modifications (e.g., installing new or modifying existing air pollution control systems, or repowering or replacing existing electric ~~power~~-generating units) in order to comply with PAR 1135 and three electricity generating facilities would make business decisions to comply with PAR 1135. Thus, a total of six electricity generating facilities would be expected to implement modifications to their electric generating units. The remainder of electric ~~power~~-generating units either meet updated BARCT, are scheduled to be permanently shutdown, or were found to not be cost-effective and are eligible for a low-use provision contained in PAR 1135. Units which are shutdown are permanently offline and cannot be reactivated.

TECHNOLOGY OVERVIEW

Combustion is a high temperature chemical reaction resulting from burning a gas, liquid, or solid fuel (e.g., natural gas, diesel, fuel oil, gasoline, propane, and coal) in the presence of air (oxygen and nitrogen) to produce: 1) heat energy; and 2) water vapor or steam. An ideal combustion reaction is when the entire amount of fuel needed is completely combusted in the presence of air so that only carbon dioxide (CO₂) and water are produced as by-products. However, since fuel contains other components such as nitrogen and sulfur plus the amount of air mixed with the fuel can vary, in practice, the combustion of fuel is not a “perfect” reaction. As such, uncombusted fuel plus smog-forming by-products such as NO_x, SO_x, carbon monoxide (CO), and soot (solid carbon) can be discharged into the atmosphere.

Of the total NO_x emissions that can be generated, there are two types of NO_x formed during combustion: 1) thermal NO_x; and 2) fuel NO_x. Thermal NO_x is produced from the reaction between the nitrogen and oxygen in the combustion air at high temperatures while fuel NO_x is formed from a reaction between the nitrogen already present in the fuel and the available oxygen in the combustion air. The amount of fuel NO_x generated is dependent on fuel type and boilers, engines, and gas turbines all generate thermal NO_x as a combustion by-product. The following provides a brief description of the various types of existing combustion equipment that may be affected by PAR 1135 and subsequently retrofitted with NO_x control equipment.

Boilers: A typical boiler, also referred to as a steam generator, is a steel or cast-iron pressure vessel equipped with burners that combust liquid, gas, or solid fossil fuel to produce steam or hot water. Boilers are classified according to the amount of energy output in millions of British Thermal Units per hour (mmBTU/hr), the type of fuel burned (natural gas, diesel, fuel oil, etc.), operating steam pressure in pounds per square inch (psi), and heat transfer media. In addition, boilers are further defined by the type of burners used and air pollution control techniques. The burner is where the fuel and combustion air are introduced, mixed, and then combusted. The combustion of fuel generates NO_x, primarily “thermal” NO_x with small contribution from “fuel” NO_x and “prompt” NO_x. For the purpose of the analysis in this Draft Mitigated SEA, controlling NO_x emissions from boilers is assumed to be accomplished with selective catalytic reduction

¹¹ Based on the current usage of these ~~four-ten~~ turbines, the scheduled modifications would not be required under PAR 1135.

(SCR) technology. While low NO_x burners may be effective at reducing NO_x emissions, SCRs were analyzed because SCR technology has been demonstrated to have more adverse construction and operational impacts than low NO_x burners. Thus, by analyzing SCRs in lieu of low NO_x burners, the analysis in this Draft Mitigated SEA applies the most conservative assumptions to represent a “worst-case” scenario.

Turbines: Gas turbines convert energy stored in a fluid into mechanical energy by channeling the fluid through a system of stationary and moving vanes. The moving vanes are attached to a rotor to turn either a shaft, producing work output in the form of torque, or to generate velocity and pressure energy in a jet. Gas turbines can be used in combined-cycle cogeneration and simple-cycle arrangements. Combined cycle systems are typically used for very large systems and generally have higher capital costs than simple cycle gas turbines. Gas turbines are used to produce both electricity and steam. Gas turbines can operate on both gaseous (e.g., natural gas) and liquid fuels (e.g., diesel). For the purpose of the analysis in this Mitigated SEA, controlling NO_x emissions from gas turbines is assumed to be accomplished with SCR technology.

Gaseous and Liquid Fuel Powered Internal Combustion Engines: Internal combustion engines create power by mixing fuel in a cylinder controlled by valves in a timed cycle. The cylinder contains a piston which compresses the fuel igniting it by either a spark (spark ignition) or until the fuel ignites from pressure (compression ignition). The expansive force created by the ignited fuel is transferred by the piston through a connecting rod to a crankshaft which transfers the resulting power to useable work. The power created can generate electricity or by an external shaft for propulsion. The extreme heat created by the combustion of the fuel exits the engine through the exhaust system at a temperature sufficient to create many undesirable compounds such as NO_x and the formation of other greenhouse gases. The emissions are often controlled by complex catalyst systems for compression ignition engines and a single simple catalyst for spark ignited engines. For the purpose of the analysis in this Mitigated SEA, controlling NO_x emissions from diesel fueled internal combustion engines is assumed to be accomplished with SCR technology.

One portion of the BARCT assessment for PAR 1135 evaluated technologically feasible NO_x emissions control technologies specific to electric power-generating units. The BARCT assessment identified the following technologies that could be employed to achieve BARCT compliance in the event that a facility operator chooses to install new or modify their existing air pollution control equipment to reduce NO_x emissions from electric power-generating units: 1) dry low-NO_x or lean premix emission combustors for turbines; 2) water or steam injection for turbines; 3) catalytic combustion for turbines; 4) low-NO_x burners for boilers; 5) selective catalytic reduction (SCR) for diesel internal combustion engines, boilers, and turbines; and 6) catalytic absorption systems for turbines. PAR 1135 is expected to result in ~~three~~ six electricity generating facilities either installing new or modifying existing air pollution control equipment as part of meeting updated BARCT and reducing NO_x emissions. The type of air pollution control equipment that is commonly used at a electricity generating facility to reduce NO_x emissions is dependent upon a variety of factors such as the age of the existing air pollution control equipment, the type of electric power generating unit, the amount of NO_x emission reductions that can be achieved, and whether the electric power generating unit is: 1) designed with pre-combustion technologies or features that help minimize the formation of NO_x; 2) equipped with post-combustion air pollution control equipment; or 3) equipped with a combination of pre- and post-combustion control technologies. The following summarizes the technology assessment of pre- and post-combustion technologies that were analyzed as part of the BARCT assessment for PAR 1135.

Pre-Combustion Technologies

Dry Low-NOx or Lean Premix Emission Combustors for Turbines

Prior to combustion, gaseous fuel and compressed air are pre-mixed, minimizing localized hot spots that produce elevated combustion temperatures and therefore, less NOx is formed. Atmospheric nitrogen from the combustion air is mixed with air upstream of the combustor at deliberately fuel-lean conditions. Approximately twice as much air is supplied as is actually needed to burn the fuel. This excess air is key to limiting NOx formation, as very lean conditions cannot produce the high temperatures that create thermal NOx. Using this technology, NOx emissions, without further controls, have been demonstrated at < 9 ppmv at 15% ~~O₂~~ dry oxygen on a dry basis. The technology is engineered into the combustor that becomes an intrinsic part of the turbine design. Fuel staging or air staging is utilized to keep the flame within its operating boundaries. It is not available as a “retrofit” technology and must be designed for each turbine application.

Water or Steam Injection for Turbines

Demineralized water is injected into the combustor through the fuel nozzles to lower flame temperature and reduce NOx emissions. Water or steam provides a heat sink that lowers flame temperature. Imprecise application leads to some hot zones so NOx is still created. NOx levels in natural gas turbines can be lowered by 80% to 25 ppmv at 15% ~~O₂~~ dry oxygen on a dry basis. Addition of water or steam increases mass flow through the turbine and creates a small amount of additional power. The addition of water increases carbon monoxide emissions and there is added cost to demineralize the water. Turbines using water or steam injection have increased maintenance due to erosion and wear.

Catalytic Combustion for Turbines

A catalytic process is used instead of a flame to combust the natural gas. Flameless combustion lowers combustion temperature resulting in reduced NOx formation. The overriding constraints are operating efficiency over a wide operating range of the turbine. Initial engine demonstrations have shown that catalytic combustion reduces NOx emissions. In its first commercial installation, NOx concentrations were lowered from approximately 20 ppmv to below 3 ppmv at 15% ~~O₂~~ dry oxygen on a dry basis without post-combustion controls. Several turbine manufacturers are in the development stage to incorporate this technology.

Low-NOx Burners for Boilers

Controlled fuel and air mixing at the burner reduced the peak flame temperature resulting in reduced NOx formation. Lean pre-mixed combustion gases and low turbulence flow of combustion gases combine to achieve NOx reductions of 80 to 90%. Ultra-Low-NOx Burners are able to reduce NOx concentration to 5 to 7 ppmv at 3% ~~O₂~~ dry oxygen on a dry basis. The burners are scalable for various sizes of boilers and heating units. The burners can be designed for retrofit or new installations. However, retrofits to existing boilers may require complex engineering and re-design.

Post-Combustion Technologies

Selective Catalytic Reduction for Internal Combustion Engines, Boilers, and Turbines

Selective Catalytic Reduction (SCR) is the primary post-combustion technology for NOx reduction and is widely used in turbines, boilers, and engines including stationary engines and heavy duty trucks. It is the primary control for engines that meet U.S. EPA’s Tier IV Final

standards. SCR technology is capable of reducing NO_x emissions by 95 percent or greater. In many cases, the amount of NO_x reduction is limited by the creation of other pollutants such as ammonia and carbon monoxide, space constraints, or the physical limit of the NO_x measuring device. Nearly all electricity generating equipment currently utilize SCR technology. For those units that are equipped with SCR technology, further reductions may be possible by adding catalyst modules or replacing the type of catalyst with more efficient catalyst. From observations made during site visits, space is not readily available to add more catalyst modules but facilities may be able to swap out catalyst with more efficient catalyst within the existing catalyst housing.

A typical SCR system design consists of an ammonia or urea reductant storage tank, ammonia vaporization and injection equipment, an SCR reactor with catalyst, an exhaust stack plus ancillary electronic instrumentation and operations control equipment. The way an SCR system reduces NO_x is by a matrix of nozzles injecting a mixture of reductant and air into the flue gas exhaust stream from the combustion equipment. As this mixture flows into the SCR reactor with catalyst, the catalyst, reductant, and oxygen in the flue gas exhaust react primarily (i.e., selectively) with NO and NO₂ to form nitrogen and water. The amount of reductant introduced into the SCR system is approximately a one-to-one molar ratio of reductant to NO_x for optimum control efficiency, though the ratio may vary based on equipment-specific NO_x reduction requirements.

Catalysts are made from ceramic materials and active catalytic components of base metals, zeolites, or precious metals. The catalyst may be configured into plates but many new systems are configured into honeycombs to ensure uniform dispersion and reduce ammonia emissions to below 5.0 ppmv. The reductant, ammonia, is available as anhydrous ammonia, aqueous ammonia, or urea. Anhydrous ammonia is extremely hazardous and SCAQMD does not permit new installations of anhydrous ammonia storage tanks for use in air pollution control equipment. Urea is an alternative but requires conversion to ammonia in order to be used. Most new selective catalytic reduction installations utilize aqueous ammonia in a 19 percent solution.

To perform optimally, the gas temperature in control device should be between 400 degrees Fahrenheit (°F) and 800°F. During startup and shutdown, the temperature will be below optimal range greatly reducing the effectiveness. Thus, NO_x concentration limits are generally not applicable during startup or shutdown. Newer electrical power generating equipment reduces the low temperature periods where emissions are out of control.

The catalyst is susceptible to “poisoning” if the flue gas contains contaminants including sulfur compounds, particulates, reagent salts, or siloxanes. Poisoned catalysts require cleaning or replacement resulting in extended periods of non-operation for the electrical power generating equipment. In those cases, filtering may be used to reduce the impacts on the catalyst.

Catalytic Absorption Systems for Turbines

Catalytic absorption is based on an integration of catalytic oxidation and absorption technology resulting in similar control efficiency as selective catalytic reduction without the use of ammonia. Carbon monoxide and nitrogen oxide catalytically oxidize to carbon dioxide and nitrogen dioxide and the nitrogen dioxide molecules are absorbed onto the catalyst. The catalyst is a platinum-based substrate with a potassium carbonate coating. The catalyst tends to be very sensitive to sulfur (e.g., can be poisoned by sulfur causing failure), even the small amounts in pipeline natural gas. Initial issues regarding catalyst failures have been addressed by conducting more frequent and extensive catalyst washing. At one facility, NO_x emission levels were best achieved when all

three catalyst layers are washed about every four months. During the wash process, the turbine is non-operational for about three days.

The NO_x concentration levels achieved by the various technologies assessed were consistent with the NO_x concentration levels found in existing boilers, combined cycle turbines, and simple cycle turbines located in SCAQMD. Additionally, the NO_x concentration levels from the technology assessment were consistent with the NO_x concentration levels found in diesel internal combustion engines compliant with U.S. EPA's Final Rule for Control of Emissions of Air Pollution from Nonroad Diesel Engines and Fuel¹².

¹² Final Rule for Control of Emissions of Air Pollution from Nonroad Diesel Engines and Fuel. June 29, 2004. Accessed on August 14, 2018. <https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-control-emissions-air-pollution-nonroad-diesel>

CHAPTER 2

ENVIRONMENTAL CHECKLIST

Introduction

General Information

Environmental Factors Potentially Affected

Determination

Environmental Checklist and Discussion

INTRODUCTION

The environmental checklist provides a standard evaluation tool to identify a project’s potential adverse environmental impacts. This checklist identifies and evaluates potential adverse environmental impacts that may be created by the proposed project.

GENERAL INFORMATION

Project Title:	Proposed Amended Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities
Lead Agency Name:	South Coast Air Quality Management District
Lead Agency Address:	21865 Copley Drive Diamond Bar, CA 91765
CEQA Contact Person:	Mr. Ryan Bañuelos, (909) 396-3479
PAR 1135 Contact Person	Ms. Uyen-Uyen Vo, (909) 396-2238
Project Sponsor’s Name:	South Coast Air Quality Management District
Project Sponsor’s Address:	21865 Copley Drive Diamond Bar, CA 91765
General Plan Designation:	Not applicable
Zoning:	Not applicable
Description of Project:	<p>PAR 1135 applies to RECLAIM and non-RECLAIM electricity generating facilities that are <u>investor-owned electric utilities, publicly owned electric utilities, or have a generation capacity of at least 50 MW of electrical power participants of the California Independent System Operation Corporation, a municipal or public electric utility, or an electric utility located on Santa Catalina Island.</u> PAR 1135 is proposing to: 1) expand applicability to include units <u>at RECLAIM electricity generating facilities and units at electricity generating facilities that were not at electric power generating systems subject to previously required to comply with</u> Rule 1135; 2) update the NOx and ammonia emission limits for boilers and gas turbines; 3) establish NOx emission limits and add new emission limits for ammonia, carbon monoxide, volatile organic compounds, and particulate matter for internal combustion engines; 4) revise monitoring, reporting, and recordkeeping requirements; and 5) revise exemptions. The proposed project is estimated to reduce NOx emissions by <u>0.91.7</u> ton per day <u>by January 1, 2024</u> <u>after implementation of the BARCT limits and Clean Water Act one-through-cooling provisions.</u> The analysis in the Draft Mitigated SEA indicated that while the project reduces NOx emissions, complying with PAR 1135 may also create secondary adverse environmental impacts from construction and</p>

operation activities. However, the Final Mitigated SEA concludes that PAR 1135 would not result in significant adverse impacts to any environmental topic areas after mitigation. Some facilities affected by PAR 1135 may be identified on lists compiled by the California Department of Toxic Substances Control per Government Code section 65962.5.

Surrounding Land Uses and Setting: Various

Other Public Agencies Whose Approval is Required: Not applicable

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The following environmental impact areas have been assessed to determine their potential to be affected by the proposed project. As indicated by the checklist on the following pages, environmental topics marked with an "✓" involve at least one impact that is a "Potentially Significant Impact". An explanation relative to the determination of impacts can be found following the checklist for each area.

- | | | |
|---|--|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Geology and Soils | <input type="checkbox"/> Population and Housing |
| <input type="checkbox"/> Agriculture and Forestry Resources | <input type="checkbox"/> Hazards and Hazardous Materials | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Air Quality and Greenhouse Gas Emissions | <input type="checkbox"/> Hydrology and Water Quality | <input type="checkbox"/> Recreation |
| <input type="checkbox"/> Biological Resources | <input type="checkbox"/> Land Use and Planning | <input type="checkbox"/> Solid and Hazardous Waste |
| <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Transportation and Traffic |
| <input type="checkbox"/> Energy | <input type="checkbox"/> Noise | <input type="checkbox"/> Mandatory Findings of Significance |

DETERMINATION

On the basis of this initial evaluation:

- I find the proposed project, in accordance with those findings made pursuant to CEQA Guidelines Section 15252, COULD NOT have a significant effect on the environment, and that an ENVIRONMENTAL ASSESSMENT with no significant impacts has been prepared.
- I find that although the proposed project could have a significant effect on the environment, there will NOT be significant effects in this case because revisions in the project have been made by or agreed to by the project proponent. An ENVIRONMENTAL ASSESSMENT with no significant impacts will be prepared.
- I find that the proposed project MAY have a significant effect(s) on the environment, and an ENVIRONMENTAL ASSESSMENT will be prepared.
- I find that the proposed project MAY have a "potentially significant impact" on the environment, but at least one effect: 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards; and, 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL ASSESSMENT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects: 1) have been analyzed adequately in an earlier ENVIRONMENTAL ASSESSMENT pursuant to applicable standards; and, 2) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL ASSESSMENT, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Date: September 14, 2018

Signature:



Barbara Radlein
Program Supervisor, CEQA
Planning, Rules, and Area Sources

ENVIRONMENTAL CHECKLIST AND DISCUSSION

As explained in Chapter 1, the main focus of PAR 1135 is to transition facilities participating in the NO_x RECLAIM program to a command-and-control regulatory structure requiring BARCT-level controls and to implement CMB-05. SCAQMD staff's review of the proposed project identified several components in PAR 1135 that would not be expected to cause any physical changes that could have secondary adverse environmental effects. For example, PAR 1135 contains requirements for affected facilities to keep records, and submit-conduct source testing ~~protocols, and provide notifications~~, and all of these components are administrative or procedural in nature and as such, would not be expected to cause any physical changes that would create any secondary adverse environmental effects. In addition, PAR 1135 proposes to revise and delete definitions, and includes other proposed revisions for clarity and consistency throughout the rule; again, none of these components are expected to cause any physical changes that would create any secondary adverse environmental effects.

However, the proposed modifications in PAR 1135 that pertain to applicability and the proposed emission limits for electric ~~power~~-generating units to reflect updated BARCT are the key elements that would be expected to require some facility operators to make physical modifications to their equipment in order to achieve compliance, and these activities may create secondary adverse environmental impacts. For example, in order to comply with the emission limits proposed in PAR 1135, owners/operators of some affected facilities may need to retrofit existing equipment by: 1) installing new or modifying existing air pollution control systems; 2) repowering existing equipment by replacing an electric ~~power~~-generating unit such as a boiler with a new, different electric generating unit such as a turbine while generating an equivalent or greater net power output; or 3) replacing an electric ~~power~~-generating unit with a new unit of the same type (e.g., replacing an old turbine with a new, more efficient turbine). For the purpose of the analysis in this Mitigated SEA, activities associated with installing new or modifying existing air pollution control systems, and repowering or replacing electric ~~power~~-generating units are the only activities that have been identified as having potential secondary adverse environmental impacts associated with reducing NO_x and other pollutants (e.g., ammonia, CO, VOC, and PM) from electric ~~power~~ generating units. Thus, the analysis in this Mitigated SEA focuses on the potential secondary adverse environmental impacts associated with these effects of implementing PAR 1135, which have been evaluated relative to each of the 17 environmental topics identified in the following environmental checklist.

In accordance with the BARCT assessment conducted for electric ~~power~~-generating units, this analysis relies on forecasting to identify the most likely mechanisms capable of achieving compliance within the prescribed compliance schedule set forth in PAR 1135. The analysis in this Mitigated SEA also considers the availability of air pollution control equipment and electric ~~power~~ generating units on the market for installation in accordance with compliance schedule.

For these reasons, the following assumptions are based on a range of technologically feasible and cost-effective options that facility operators may employ in order to be able to achieve emission reductions of NO_x and other pollutants within the compliance schedule set forth in PAR 1135.

Based on the BARCT assessment described in Chapter 1, ~~only three~~six electricity generating facilities have electric ~~power~~-generating units that would be expected to undergo physical modifications (e.g., installing new or modifying existing air pollution control systems, and repowering or replacing existing electric ~~power~~-generating units) in order to comply with PAR 1135. Because each facility is very different in how compliance with PAR 1135 may be achieved,

the following is a facility-by-facility summary which identifies the technologically feasible and cost-effective compliance mechanisms and the associated assumptions that have been relied upon to prepare the analysis in this Mitigated SEA.

Facility 1

Facility 1 is owned and operated by a municipality which operates four simple cycle gas turbines that each utilize water injection for pre-combustion NO_x control and are vented to four selective catalytic reduction (SCR) units for post-combustion NO_x control. Facility 1 currently operates under a business decision compliance schedule that was prepared by the facility's owner/operator in anticipation of having to comply with PAR 1135. The compliance schedule business decision contains a proposal to replace the catalyst modules that comprise the four existing SCR units with new, more efficient catalyst. The catalyst module replacement activities will occur in sequential order so that only one turbine and SCR will be offline at a time. Facility 1 has indicated that replacing the catalyst modules in each of the four SCR units will reduce the NO_x generated by the four simple cycle gas turbines to BARCT-compliant levels as outlined in PAR 1135. For this reason, this Mitigated SEA analyzes the potential environmental effects of replacing the SCR catalyst for each turbine. In addition, the new catalyst may require the injection of additional aqueous ammonia into the SCR. Thus, this Mitigated SEA also analyzes the potential for an increased amount of ammonia use and deliveries per year.

Facility 2

Facility 2 is owned and operated by an electric utility on Santa Catalina Island which operates six diesel-fueled internal combustion engines that are each vented to SCR units for post-combustion NO_x control. While the current version of Rule 1135 is not applicable to this facility, PAR 1135 proposes to include this electric utility as an electric-electricity generating facility that will be subject to updated BARCT standards/limits. SCAQMD staff's BARCT analysis of the six engines indicates that it will be technologically feasible and cost-effective to replace five of the six diesel-fueled engines in order to comply with the emission limits in PAR 1135 on or before January 1, 2024, unless a written notification indicating the decision to utilize the alternative compliance plan approach is submitted to the Executive Officer by January 1, 2022 to extend the emission limit effective date.

The BARCT analysis examined potential compliance options which considered a number of factors such as technological feasibility, existing site location constraints, cost-effectiveness, availability of air pollution control equipment and replacement engines, and whether the operator/owner may feasibly install new equipment.

Ordinarily when deciding the cleanest replacement equipment available, replacing a diesel engine with a cleaner equipment that is fueled with natural gas is one feasible way to lower NO_x emissions and comply with PAR 1135. However, natural gas is not available on Santa Catalina Island and there is currently no way to safely deliver natural gas to the island in the large quantities that would be needed to supply new engines because it is a gas, not a liquid fuel.

Further, even if there was a way to deliver natural gas to the island, a vast, uninterruptible supply would be needed on a daily basis and there is no natural gas storage facility available on the island. If the owner/operator of Facility 2 were able to figure out how to obtain an uninterruptible supply of natural gas and were able to find a location to build a large enough natural gas storage facility, a substantial amount of time would be needed to conduct pre-planning and engineering design, prepare cost estimates, and conduct an environmental analysis under CEQA and possibly under

the NEPA, if federal land or waters are involved, and obtain numerous agency approvals at both the state and federal level. Because of the extreme complexity involved with the logistics of getting natural gas to the island combined with the relatively short timing for achieving compliance with PAR 1135, it is not feasible to replace all five diesel-fueled internal combustion engines with either five internal combustion engines that are fueled with natural gas or repowering the five diesel-fueled internal combustion engines with natural gas turbines.

Thus, the potential feasible options for achieving compliance with PAR 1135 are limited to identifying replacement equipment that burns liquid fuel and the types of liquid fuels that are currently supplied to the island (e.g., diesel fuel and liquid petroleum gas). When faced with deciding how to the fuel new replacement equipment, diesel is the preferred fuel over liquid petroleum gas because its use results in better fuel economy. Further, liquid petroleum gas requires compression in order to remain a liquid and approximately 25 percent greater storage capacity for liquid petroleum gas than diesel fuel would be needed. Because the site may not have enough available land to build additional storage to accommodate liquid petroleum gas, replacement equipment that uses liquid petroleum gas is not feasible for this site location.

Also, due to the unique location of where the utility is located on the island, there is an insufficient supply of available land on the facility's property to support converting the engines to a renewable source of energy such as solar or wind technology. Even with solar or wind technology, battery backup would be needed and a non-renewable source of electricity would still be needed during times when the sun does not shine and the wind does not blow. Again, because of the extreme complexity involved with the costs and logistics of siting, designing, and permitting a renewable energy facility, combined with the relatively short timing for achieving compliance with PAR 1135, it is unlikely that the facility will replace all five diesel-fueled internal combustion engines with a renewable energy facility, while concurrently meeting the island's electrical demand.

In lieu of building a new renewable energy facility on the island, the facility's representative suggested that an underwater electrical cable could potentially supply electricity to the island. However, the process to install a high-voltage direct current underwater electrical cable interconnection between the Port of Los Angeles or Port of Long Beach and Avalon would require a substantial amount of time to conduct pre-planning and engineering design, prepare cost estimates, conduct an environmental analysis under CEQA and NEPA since federal waters may be involved, and obtain numerous agency permits and approvals at both the state and federal level. Because of the extreme complexity involved with the logistics of installing an underwater electrical cable to meet the island's electrical demand combined with the relatively short timing for achieving compliance with PAR 1135, the facility representative indicated that it is unlikely that the facility will replace all five-diesel internal combustion engines with a single underwater electrical cable in order to comply with PAR 1135¹³.

Thus, based on the BARCT assessment and through the process of elimination, the most timely, reasonable, and cost-effective option would be to replace all five diesel fueled internal combustion engines with five new U.S. EPA Tier IV Final diesel-fueled internal combustion engines and their associated SCRs that are capable of achieving compliance with the emission limits in PAR 1135. Further, since all of the existing internal combustion engines are currently equipped with SCR units for post-combustion NOx control, the facility representative indicated that it is not expected that the owner/operator would be required to modify the ~~existing SCRs and associated aqueous~~

¹³ Stationary Source Committee: Tom Gross, Southern California Edison, Oral testimony provided on August 17, 2018.

ammonia storage capacity in order to comply with PAR 1135¹⁴ since smaller quantities of aqueous ammonia would be needed to remove fewer amounts of NOx that will be generated by the new, cleaner, and more efficient engines.

Facility 3

Facility 3 is owned and operated by a municipality which operates three natural gas boilers. Two boilers are currently equipped with low-NOx burners and flue gas recirculation for pre-combustion NOx control, and one boiler is equipped with flue gas recirculation for pre-combustion NOx control and selective non-catalytic reduction for post-combustion NOx control. In response to Senate Bill 350 which requires retail sellers and publicly owned utilities to procure 50 percent of their electricity from eligible renewable energy resources by 2030 in accordance with the California Renewables Portfolio Standard, Facility 3 began exploring repowering options for their three boilers. Facility 3 released a Notice of Preparation/Initial Study (NOP/IS) in December 2016¹⁵, a Draft EIR in September 2017¹⁶, and a Final EIR in March 2018¹⁷, which proposed to repower the three existing boilers with one or more natural gas turbines. Facility 3's proposed project also included other substantial changes which involved the near complete demolition and replacement of the entire facility. However, on April 10, 2018, the operator was directed by their city council to evaluate local and regional clean energy solutions in lieu of some or all of the repowering project contained in the Final EIR. As of the publication date of this Mitigated SEA, the status of Facility 3's proposed project as described in the Final EIR is undecided.

In the meantime, SCAQMD staff's review of the Final EIR indicated that there are several more components to Facility 3's proposed project than what would need to occur to solely comply with PAR 1135, if adopted. In particular, only the three existing boilers at Facility 3 would require physical modifications in order to comply with PAR 1135. However, due to the configuration of the existing three boilers, SCAQMD staff determined that retrofitting each boiler with SCR for post-combustion NOx controls would require costly, complex, and substantial modifications because of each boiler's age. As such, based on the BARCT assessment and in the event that PAR 1135 is adopted prior to certification of the Facility 3's Final EIR, SCAQMD staff determined that the most feasible and cost-effective way to comply with PAR 1135 would be to repower the three existing natural gas boilers with ~~up to~~ three new natural gas turbines equipped with three new SCR units and one new aqueous ammonia storage tank to supply all three SCR units.

Facility 4

Facility 4 is owned and operated by a municipality which operates two combined cycle gas turbines that utilize dry low NOx control and two associated duct burners and one simple cycle gas turbine that utilizes water injection for pre-combustion NOx control, all three turbines are vented to three SCR units for post-combustion NOx control. Facility 4's two combined cycle gas turbines and two associated duct burners are currently exempt from PAR 1135. Facility 4, instead of opting for the low-use provision, has elected as a business decision to optionally replace the facility's one simple cycle gas turbine SCR unit catalyst module with a new, more efficient catalyst. Facility 4 has indicated that replacing the catalyst module in its simple cycle gas turbine SCR unit will reduce

¹⁴ Personal communication with Tom Gross, Southern California Edison, August 7, 2018.

¹⁵ Initial Study for the Grayson Repowering Project, December 2016. <http://graysonrepowering.com/#initial-study>

¹⁶ Draft Environmental Impact Report (DEIR) for the Grayson Repowering Project, September 2017. <http://graysonrepowering.com/#draft-eir>

¹⁷ Final Environmental Impact Report for the Grayson Repowering Project, March 2018. <http://graysonrepowering.com/#final-eir>

the NO_x generated by the simple cycle gas turbine to BARCT-compliant levels as outlined in PAR 1135. For this reason, this Mitigated SEA analyzes the potential environmental effects of replacing the SCR catalyst for the simple cycle turbine. In addition, the new catalyst may require the injection of additional aqueous ammonia into the SCR. Thus, this Mitigated SEA also analyzes the potential for an increased amount of ammonia use and deliveries per year.

Facility 5

Facility 5 is owned and operated by a municipality which operates two combined cycle gas turbines and five simple cycle gas turbines that each utilize water injection for pre-combustion NO_x control and are vented to seven selective catalytic reduction (SCR) units for post-combustion NO_x control. Facility 5, instead of opting for the low-use provision, has elected as a business decision to optionally replace each of the facility's catalyst modules that comprise the seven existing SCR units with new, more efficient catalyst. The catalyst module replacement activities will occur in sequential order so that only one turbine and SCR will be offline at a time. Facility 7 has indicated that replacing the catalyst modules in each of the seven SCR units will reduce the NO_x generated by the five simple cycle gas turbines and two combined cycle gas turbines to BARCT-compliant levels as outlined in PAR 1135. For this reason, this Mitigated SEA analyzes the potential environmental effects of replacing the SCR catalyst for each turbine. In addition, the new catalyst may require the injection of additional aqueous ammonia into the SCR. Thus, this Mitigated SEA also analyzes the potential for an increased amount of ammonia use and deliveries per year.

Facility 6

Facility 6 is owned and operated by a municipality which operates one simple cycle gas turbine that is vented to a SCR unit for post-combustion NO_x control. If PAR 1135 is adopted, Facility 6 would be required to retrofit their existing equipment to BARCT compliant levels. The BARCT analysis examined potential compliance options which considered a number of factors such as technological feasibility, cost-effectiveness, availability of air pollution control equipment and whether the operator/owner may feasibly install new equipment. Thus, based on the BARCT assessment, the most timely, reasonable, and cost-effective option would be to replace the catalyst module in the existing SCR unit with a new, more efficient catalyst. For this reason, this Mitigated SEA analyzes the potential environmental effects of replacing the SCR catalyst for the simple cycle turbine. In addition, the new catalyst may require the injection of additional aqueous ammonia into the SCR. Thus, this Mitigated SEA also analyses the potential for an increased amount of ammonia use and deliveries per year.

Table 2-1 summarizes the potential modifications that may be expected to occur at the ~~three-six~~ affected electricity generating facilities to comply with PAR 1135.

**Table 2-1
Electricity Generating Facilities and Electric Power-Generating Units
with Potential Modifications due to PAR 1135**

Electricity Generating Facility	Affected Electric Power Generating Equipment	Existing NOx Permit Limits (ppmv)	Proposed NOx Limit in PAR 1135 (ppmv)	Potential Modifications due to PAR 1135
Facility 1	4 Simple Cycle Turbines	5, 5, 9, 9 ppmv	2.5	Replace existing catalyst modules in 4 existing SCRs with new catalyst modules
Facility 2	5 Diesel Internal Combustion Engines	97, 97, 140, 82, 1036.5 lbs/MW-hr*	45	Replace existing 5 new diesel internal combustion engines and <u>SCRs</u> with 5 new diesel internal combustion engines and <u>SCRs</u>
Facility 3	3 Natural Gas Boilers	38, 40, 82 ppmv	5	Removing existing boilers and installing up to 3 new Turbines with 3 new SCRs and one new aqueous ammonia storage tank
Facility 4	<u>1 Simple Cycle Turbine</u>	<u>5 ppmv</u>	<u>2.55</u>	<u>Replace catalyst module in SCR with new catalyst module</u>
Facility 5	<u>2 Combined Cycle Turbines and 5 Simple Cycle Turbines</u>	<u>7, 7 ppmv and 5, 5, 5, 5, 5 ppmv</u>	<u>2, 2 and 2.5, 2.5, 2.5, 2.5, 2.5</u>	<u>Replace catalyst modules in 7 SCRs with new catalyst modules</u>
Facility 6	<u>1 Simple Cycle Turbine Natural Gas Boilers</u>	<u>7.6 ppmv</u>	<u>2.5</u>	<u>Replace catalyst module in SCR with new catalyst module</u>

* Facility 2 emissions limits are calculated on a per year facility-wide average that includes other equipment (e.g all six diesel internal combustion engines and micro turbines located on-site).

The potential source of environmental impacts from the potential modifications summarized in Table 2-1 are divided into two categories – construction and operation. Activities associated with installing new or modifying existing air pollution control equipment or components (e.g., catalyst modules) and replacing electric power-generating units with new equipment (e.g., turbines or engines) are considered to generate construction impacts, while activities associated with periodic maintenance such as delivering aqueous ammonia and fresh catalyst and hauling away spent catalyst would be considered as operational impacts that occur after construction is complete. In order to evaluate these impacts, the following assumptions were relied upon for the analysis in this Mitigated SEA.

Assumptions

Construction at Facility 1:

- The catalyst modules in the four SCR units for the four simple cycle gas turbines are assumed to be replaced with modules that are comprised of more efficient catalyst.
- The replacement catalyst modules are pre-manufactured off-site; they are smaller than the existing catalyst modules so they are assumed to fit in the existing SCR catalyst housing without requiring modifications to the housing.
- Construction activities associated with replacing the catalyst modules for each SCR would be expected to last for a period of five days.
- The catalyst module replacement activities will occur in sequential order so that only one turbine and SCR will be ~~offline~~ replaced at a time.
- The spent catalyst modules from the four SCR units would need to be disposed of or recycled for their precious metal content.
- For each SCR, the removal of spent catalyst modules and replacement of fresh catalyst modules is assumed to require the use of one forklift, one aerial lift, and one crane – with each operating four hours per day for five days with a construction crew consisting of three members driving light duty vehicles (LDA/LDT1/LDT2). In addition, the delivery of fresh catalyst modules is assumed to be supplied by one vendor driving a medium-heavy duty truck (MHDT) and the haul away of spent catalyst modules is assumed to be conducted by one waste hauler truck driving a heavy-heavy duty truck (HHDT).

Construction at Facility 2:

- Five diesel internal combustion engines and associated SCR units would need to be replaced. Construction activities associated with replacing one engine and SCR unit would be expected to last for a period of four days. The replacement is assumed to be sequential to minimize power disruptions or reductions to the facility's customers during construction.
- SCAQMD staff assumes that the demolition and construction phases for each engine and SCR unit replacement would not overlap because only one engine and SCR unit can be offline at a time in order for the facility to maintain a sufficient amount of power to its customers without causing a service disruption or reduced power supplies.
- Each engine and SCR unit is assumed to be transported to Santa Catalina Island via barge from the Port of Los Angeles.

- All construction equipment and materials would need to be delivered to the facility via barge. Due to the limited space at the facility, the hauling, unloading, and staging of construction equipment and materials would not be able to occur on the same day as construction to replace an engine.
- To remove one existing engine and SCR unit and install one new engine and SCR unit, the following construction equipment and workers are assumed to be needed:
 - Paving: one paver, one paving equipment, one roller, one cement and mortar mixer, and one tractor/loader/backhoe operating a maximum of four hours per day on one day and a construction crew of eight workers.
 - Engine and SCR unit Removal and Replacement: two cranes, one concrete/industrial saw, one rubber tired dozer, two rubber tired loaders, six forklifts, two welders, one cement and mortar mixer, and two generator sets operating a maximum of eight hours per day for three days with a construction crew consisting of 18 workers driving light duty vehicles (LDA/LDT1/LDT2), five vendors driving a combination of heavy-heavy duty trucks and medium-heavy duty trucks (HHDT, MHDT), and five waste haulers driving heavy-heavy duty trucks (HHDT).

Construction at Facility 3¹⁸:

- Three boilers would need to be removed and replaced with up to three turbines that meet updated BARCT. Construction is assumed to last for approximately three years and would be expected to include the demolition/dismantling of the three existing boilers and construction of three new turbines with three new SCR units and one new aqueous ammonia storage tank.
- SCAQMD staff estimates that the demolition and construction phases would not be expected to overlap.
- No site-preparation is expected to be needed.
- Due to space limitations at the site, one turbine is assumed to be constructed on a peak day.
- The following equipment and workers are assumed to be needed:
 - Demolition: One crane, two excavators, two forklifts, two other general industrial equipment, one grader, one roller, two rubber tired dozers, four tractors/loaders/backhoes operating a maximum of eight hours per day for 150 days with a construction crew consisting of 68 workers driving light duty vehicles (LDA/LDT1/LDT2), three vendors driving medium-heavy duty trucks (MHDT), and 4,200 waste haulers driving heavy-heavy duty trucks (HHDT).

¹⁸ The City of Glendale prepared a Final EIR for the Grayson Repowering Project but the document was not certified by the Glendale City Council in spring of 2018. The Final EIR Grayson Repowering Project (FEIR Grayson Repowering Project) analyzed a project much grander in scope than what is required to comply with PAR 1135, for example they intend to demolish the existing Grayson Power Plant support structures and equipment except for Unit 9. See the FEIR Grayson Repowering Project: <http://graysonrepowering.com/#final-eir>. The construction impacts were analyzed using CalEEMod Version 2016.3.1, however since the preparation of the FEIR Grayson Repower Project CalEEMod has been updated to Version 2016.3.2. The FEIR Grayson Repowering Project concluded that construction activities are less than significant, for the analysis in this SEA SCAQMD staff assumed a similar schedule and construction equipment, modified for the impacts from compliance with PAR 1135, which will overestimate the SEA's construction impacts. Nonetheless, the analysis in the SEA shows that there are no significant construction impacts to air quality.

- Grading: Two excavators, one grader, one rollers, three tractors/loaders/backhoes, one concrete/industrial saw, one rubber tired dozer operation a maximum of eight hours per day for 30 days with a construction crew consisting of 15 workers driving light duty vehicles (LDA/LDT1/LDT2) and 3,000 waste haulers driving heavy-heavy duty trucks (HHDT).
- Paving: One aerial lift, one crane, one forklift, two pavers, two paving equipment, and two rollers operating a maximum of seven hours per day for 14 days with a construction crew consisting of 10 workers driving light duty vehicles (LDA/LDT1/LDT2), three vendors driving medium-heavy duty trucks (MHDT), and 220 waste haulers driving heavy-heavy duty trucks (HHDT).
- Construction: Three tractors/loaders/backhoes, three rubber tired loaders, six cranes, two welders, two rollers, two excavators, two forklifts, two other construction equipment operating a maximum of six hours per day for 300 days with a construction crew consisting of 200 workers driving light duty vehicles (LDA/LDT1/LDT2), eight vendors driving medium-heavy duty trucks (MHDT), and 3,700 waste haulers driving heavy-heavy duty trucks (HHDT).
- Architectural Coatings: One air compressor operating a maximum of four hours per day for 14 days with a construction crew consisting of four workers driving light duty vehicles (LDA/LDT1/LDT2).

Construction at Facility 4:

- The catalyst modules in the SCR unit for the simple cycle gas turbine is assumed to be replaced with a module that is comprised of a more efficient catalyst.
- The replacement catalyst modules are pre-manufactured off-site; they are smaller than the existing catalyst modules so they are assumed to fit in the existing SCR catalyst housing without requiring modifications to the housing.
- Construction activities associated with replacing a catalyst module for the SCR would be expected to last for a period of five days.
- The spent catalyst modules from the SCR unit would need to be disposed of or recycled for its precious metal content.
- For one SCR, the removal of spent catalyst modules and replacement of fresh catalyst modules is assumed to require the use of one forklift, one aerial lift, and one crane – with each operating four hours per day for five days with a construction crew consisting of three members driving light duty vehicles (LDA/LDT1/LDT2). In addition, the delivery of fresh catalyst modules is assumed to be supplied by one vendor driving a medium-heavy duty truck (MHDT) and the haul away of spent catalyst modules is assumed to be conducted by one waste hauler truck driving a heavy-heavy duty truck (HHDT).

Construction at Facility 5:

- The catalyst modules in the seven SCR units for the two combined cycle gas turbines and five simple cycle gas turbines are assumed to be replaced with modules that are comprised of more efficient catalyst.

- The replacement catalyst modules are pre-manufactured off-site; they are smaller than the existing catalyst modules so they are assumed to fit in the existing SCR catalyst housing without requiring modifications to the housing.
- Construction activities associated with replacing the catalyst modules for each SCR would be expected to last for a period of five days.
- The catalyst module replacement activities will occur in sequential order so that only one turbine and SCR will be replaced at a time.
- The spent catalyst modules from the four SCR units would need to be disposed of or recycled for their precious metal content.
- For each SCR, the removal of spent catalyst modules and replacement of fresh catalyst modules is assumed to require the use of one forklift, one aerial lift, and one crane – with each operating four hours per day for five days with a construction crew consisting of three members driving light duty vehicles (LDA/LDT1/LDT2). In addition, the delivery of fresh catalyst modules is assumed to be supplied by one vendor driving a medium-heavy duty truck (MHDT) and the haul away of spent catalyst modules is assumed to be conducted by one waste hauler truck driving a heavy-heavy duty truck (HHDT).

Construction at Facility 6:

- The catalyst modules in the SCR unit for the simple cycle gas turbine is assumed to be replaced with a module that is comprised of a more efficient catalyst.
- The replacement catalyst modules are pre-manufactured off-site; they are smaller than the existing catalyst modules so they are assumed to fit in the existing SCR catalyst housing without requiring modifications to the housing.
- Construction activities associated with replacing a catalyst module for the SCR would be expected to last for a period of five days.
- The spent catalyst modules from the SCR unit would need to be disposed of or recycled for its precious metal content.
- For one SCR, the removal of spent catalyst modules and replacement of fresh catalyst modules is assumed to require the use of one forklift, one aerial lift, and one crane – with each operating four hours per day for five days with a construction crew consisting of three members driving light duty vehicles (LDA/LDT1/LDT2). In addition, the delivery of fresh catalyst modules is assumed to be supplied by one vendor driving a medium-heavy duty truck (MHDT) and the haul away of spent catalyst modules is assumed to be conducted by one waste hauler truck driving a heavy-heavy duty truck (HHDT).

Construction at all 3-6 Facilities:

- CalEEMod version 2016.3.2 will be used to analyze the construction emissions at each of the ~~three~~-six facilities based on the aforementioned assumptions.
- Construction activities are not assumed to overlap at the ~~three~~-six facilities because of the wide variation of modifications that may be anticipated and the varying amounts of lead time needed for pre-construction/engineering design. The facility with the highest amount of daily construction emissions will represent the worst-case.

Operation at all ~~3-6~~ Facilities:

Up to ~~34-31~~ facilities will need to comply with PAR 1135, but only ~~six~~^{three} facilities would be expected to undergo physical modifications. Of the ~~three-six~~ affected facilities, ~~only~~ Facilities 1, 3, 4, 5, and ~~6~~^{and 3} are expected to have new operation impacts, as explained below:

- Facility 1's proposed replacement and upgrade of the SCR catalyst modules may require additional aqueous ammonia to be injected into the four SCR units in order to achieve the desired NOx emission reductions. This analysis assumes an increase of six aqueous ammonia deliveries per year will be needed to supply the existing aqueous ammonia storage tank. However, because Facility 1 currently replaces the spent SCR catalyst modules approximately every five years as part of regular maintenance, this analysis assumes that the same maintenance schedule will continue with the upgraded SCR catalyst modules.
- Facility 2 is assumed to not create any new operational impacts because the proposed modifications would not change: 1) the amount of urea that is currently delivered and stored; and 2) the current maintenance schedule for replacing spent SCR catalyst approximately every five years.
- Facility 3 is expected to install one new aqueous ammonia tank; thus, new operational impacts relative to the delivery and storage of aqueous ammonia are anticipated. Facility 3 is also expected to install three new SCRs which will require spent catalyst to be replaced approximately every five years.
- Facility 4's proposed replacement and upgrade of the SCR catalyst module may require additional aqueous ammonia to be injected into the SCR unit in order to achieve the desired NOx emission reductions. This analysis assumes an increase of six aqueous ammonia deliveries per year will be needed to supply the existing aqueous ammonia storage tank. However, because Facility 4 currently replaces the spent SCR catalyst module approximately every five years as part of regular maintenance, this analysis assumes that the same maintenance schedule will continue with the upgraded SCR catalyst module.
- Facility 5's proposed replacement and upgrade of the SCR catalyst modules may require additional aqueous ammonia to be injected into the seven SCR units in order to achieve the desired NOx emission reductions. This analysis assumes an increase of 11 aqueous ammonia deliveries per year will be needed to supply the existing aqueous ammonia storage tank. However, because Facility 5 currently replaces the spent SCR catalyst modules approximately every five years as part of regular maintenance, this analysis assumes that the same maintenance schedule will continue with the upgraded SCR catalyst modules.
- Facility 6's proposed replacement and upgrade of the SCR catalyst module may require additional aqueous ammonia to be injected into the SCR unit in order to achieve the desired NOx emission reductions. This analysis assumes an increase of six aqueous ammonia deliveries per year will be needed to supply the existing aqueous ammonia storage tank. However, because Facility 6 currently replaces the spent SCR catalyst module approximately every five years as part of regular maintenance, this analysis assumes that the same maintenance schedule will continue with the upgraded SCR catalyst module.
- No additional permanent employees are expected to be hired at any of the ~~three-six~~ facilities as a result of PAR 1135.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
I. AESTHETICS.				
Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

The proposed project impacts on aesthetics will be considered significant if:

- The project will block views from a scenic highway or corridor.
- The project will adversely affect the visual continuity of the surrounding area.
- The impacts on light and glare will be considered significant if the project adds lighting which would add glare to residential areas or sensitive receptors.

Discussion

As explained in the introductory remarks to the Environmental Checklist, the proposed amendments to PAR 1135 that pertain to applicability and the proposed emission limits for electric ~~power~~-generating units to reflect updated BARCT are the key elements that would be expected to require some facility operators to make physical modifications to their equipment in order to achieve compliance and these activities may create secondary adverse environmental impacts. For the purpose of the analysis in this Mitigated SEA, activities associated with installing new or modifying existing air pollution control systems, and repowering or replacing electric ~~power~~ generating units are the only activities that have been identified as having potential secondary adverse environmental impacts associated with reducing NOx and other pollutants (e.g., ammonia, CO, VOC, and PM) from electric ~~power~~-generating units. Based on the BARCT assessment described in Chapter 1, only three electricity generating facilities have electric ~~power~~-generating units that would be expected to undergo physical modifications (e.g., installing new or modifying existing air pollution control systems, and repowering or replacing existing electric ~~power~~ generating units) in order to comply with PAR 1135 and three would elect to comply due to business decisions for a total of six facilities that are expected to undergo physical modifications.

Of the ~~three-six~~ affected electricity generating facilities, there are vast differences between the facilities due to the type of electric ~~power~~-generating units, geographic location, and site layout at each individual facility. Further, each of the ~~three-six~~ facilities is very different in how compliance

with PAR 1135 may be achieved; Table 2-1 summarizes the potential modifications that may be expected to occur at the three affected electricity generating facilities. Therefore, at each of the ~~three~~-~~six~~ affected facilities, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, and delivery and haul trips during construction and operation, are expected to occur during the implementation of PAR 1135. Therefore, the responses to the following questions rely on the assumptions described in the introductory remarks and are specific to each facility and their individual secondary impacts.

I. a), b) c) & d) No Impact. To reduce NO_x emissions from the affected electricity generating facilities, ~~three~~-~~six~~ facilities would need to make physical modifications as summarized in Table 2-1 in order to comply with updated BARCT in PAR 1135.

At each of the ~~three~~-~~six~~ facilities, varying types of construction equipment such as cranes, tractors, backhoes, aerial lifts, compressors, welders, and forklifts, et cetera, may be needed to carry out the facility-specific physical modifications during construction. However, since electricity generating facilities are heavy industrial facilities that currently utilize a wide range of on-road vehicles and off-road equipment such as aerial lifts, cranes, forklifts and other types of heavy-duty equipment on site as part of their day-to-day operations, using these or similar equipment during construction activities for PAR 1135 may not discernably different in appearance. For example, an aerial lift or crane, when fully extended, may be temporarily visible in the surrounding areas while in use, depending on where the equipment is located within each facility's property boundary and whether there are any other structures on or off of the property that would block or buffer the line of sight outside of the property lines. Thus, the use of these equipment during construction will not be expected to be visually different during construction than when they are used during regular day-to-day operations. Aside from aerial lifts or cranes, the majority of construction equipment that may be needed is expected to be relatively low in height and not substantially visible to the surrounding area due to existing fencing along the property lines and existing structures currently within the facilities that may buffer the views of the construction activities. Further, once all of the construction activities are completed at the each of the three facilities, the overall visual profile of the facilities post-construction is not expected to be substantially different in appearance to the surrounding areas because the modified and/or replaced equipment will be at the same or similar heights of the existing equipment and surrounding structures.

Specific to Facility 1, the SCR catalyst modules for each of the four existing SCR units are assumed to need replacing and the modules are contained within an existing housing structure. Further, the replacement SCR catalyst modules are expected to be smaller than the existing modules. In addition, the act of swapping out the spent SCR catalyst modules with fresh, more efficient catalysts will not be expected to be visible offsite. Thus, no physical modifications that would alter the height profiles or overall appearance of the existing housing structures are necessary and only SCR module change-out activities are expected to occur during construction. Thus, once the SCR catalyst modules are replaced for each SCR unit, the outside appearance of each SCR unit and the housing of the catalyst modules will remain unchanged.

Facility 2 would be expected to replace five diesel internal combustion engines and associated SCR units, with one engine and SCR unit being replaced per year. Once construction of each new engine and SCR unit is completed at Facility 2 and the existing internal combustion engines and SCR units are removed, the overall appearance is of the new engines and SCRs at this facility is expected to have similar physical and height characteristics as the existing engines.

Facility 3 would be expected to demolish three existing boilers and install three new turbines with three new SCR units and one new aqueous ammonia storage tank. While the new turbines are a different type of electric power generating unit when compared to the boilers and may have a different footprint and height, the overall industrial appearance and footprint of Facility 3 is not expected to drastically change as a result of these construction activities.

For Facility 4 and 6, the SCR catalyst modules for each existing SCR unit is assumed to need replacing and the modules are contained within an existing housing structure. Further, the replacement SCR catalyst modules are expected to be smaller than the existing modules. In addition, the act of swapping out the spent SCR catalyst modules with a fresh, more efficient catalyst will not be expected to be visible offsite. Thus, no physical modifications that would alter the height profiles or overall appearance of the existing housing structures are necessary and only SCR module change-out activities are expected to occur during construction. Thus, once the SCR catalyst modules are replaced for each SCR unit, the outside appearance of the SCR unit and the housing of the catalyst modules will remain unchanged.

Facility 5, is assumed to need to replace the SCR catalyst modules for each of the seven existing SCR units contained within an existing housing structure, with one module replaced per year. Further, the replacement SCR catalyst modules are expected to be smaller than the existing modules. In addition, the act of swapping out the spent SCR catalyst modules with fresh, more efficient catalysts will not be expected to be visible offsite. Thus, no physical modifications that would alter the height profiles or overall appearance of the existing housing structures are necessary and only SCR module change-out activities are expected to occur during construction. Thus, once the SCR catalyst modules are replaced for each SCR unit, the outside appearance of each SCR unit and the housing of the catalyst modules will remain unchanged.

Because each affected electricity generating facility is located in existing industrial or commercial land use areas, any construction equipment that is needed at each of the ~~three~~-six facilities is not expected to be substantially discernable from what typically exists on-site for conducting routine operations and maintenance activities. Further, the construction activities are not expected to adversely impact views and aesthetics resources since most of the heavy equipment and activities are expected to occur within the confines of each existing facility property and are expected to introduce only minor visual changes to areas outside each electricity generating facility, if at all, depending on the location of the construction activities within each facility.

Lastly, the construction activities are expected to be temporary in nature and will cease following completion of the modifications. Also, once construction at each of the ~~three~~-six facilities is completed, any construction equipment that has been rented will be removed from each facility. Further, any new equipment that is installed would be expected to blend in with the existing industrial profile at the affected facilities because the heights of these replacements units are expected to have a similar profile when compared to neighboring existing equipment on-site and their associated stack heights would be about the same as existing stacks within the affected facilities.

Therefore, any potential construction and operation activities as a result of the proposed project would not be expected to damage, degrade, or obstruct scenic resources and the existing visual character of any site in the vicinity of affected facilities.

There are no components in PAR 1135 that would require construction activities to occur at night. Further, cities often have their own limitations and prohibitions that restrict construction from occurring during evening hours and weekends. Therefore, no additional temporary construction lighting at each facility would be expected. Similarly, while the proposed project has no provisions that would require affected equipment to operate at night, some facilities currently operate multiple shifts and existing lighting is utilized during the nighttime shifts. For those facilities, once construction is complete, additional permanent light fixtures may be installed on or near the repowered, retrofitted, or replaced electric power-generating units for safety and security reasons. These permanent light fixtures should be positioned to direct light downward toward equipment within the facility so as to not create additional light or glare offsite to residences or sensitive receptors. Therefore, the proposed project is not expected to create a new source of substantial light or glare at any of the affected facilities in a manner that would adversely affect day or nighttime views in the surrounding areas.

Conclusion

Based upon these considerations, significant adverse aesthetics impacts are not expected from implementing PAR 1135. Since no significant aesthetics impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
II. AGRICULTURE AND FORESTRY RESOURCES.				
Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland mapping and Monitoring Program of the California Resources Agency, to non- agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Project-related impacts on agriculture and forestry resources will be considered significant if any of the following conditions are met:

- The proposed project conflicts with existing zoning or agricultural use or Williamson Act contracts.
- The proposed project will convert prime farmland, unique farmland or farmland of statewide importance as shown on the maps prepared pursuant to the farmland mapping and monitoring program of the California Resources Agency, to non-agricultural use.
- The proposed project conflicts with existing zoning for, or causes rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined in Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)).
- The proposed project would involve changes in the existing environment, which due to their location or nature, could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use.

Discussion

As explained in the introductory remarks to the Environmental Checklist, the proposed amendments to PAR 1135 that pertain to applicability and the proposed emission limits for electric ~~power~~-generating units to reflect updated BARCT are the key elements that would be expected to require some facility operators to make physical modifications to their equipment in order to achieve compliance and these activities may create secondary adverse environmental impacts. For the purpose of the analysis in this Mitigated SEA, activities associated with installing new or modifying existing air pollution control systems, and repowering or replacing electric ~~power~~ generating units are the only activities that have been identified as having potential secondary adverse environmental impacts associated with reducing NOx and other pollutants (e.g., ammonia, CO, VOC, and PM) from electric ~~power~~-generating units. Based on the BARCT assessment described in Chapter 1, only three electricity generating facilities have electric ~~power~~-generating units that would be expected to undergo physical modifications (e.g., installing new or modifying existing air pollution control systems, and repowering or replacing existing electric ~~power~~ generating units) in order to comply with PAR 1135 and three would elect to comply due to business decisions for a total of six facilities that are expected to undergo physical modifications.

Of the ~~three-six~~ affected electricity generating facilities, there are vast differences between the facilities due to the type of electric ~~power~~-generating units, geographic location, and site layout at each individual facility. Further, each of the three facilities is very different in how compliance with PAR 1135 may be achieved; Table 2-1 summarizes the potential modifications that may be expected to occur at the ~~three-six~~ affected electricity generating facilities. Therefore, at each of the ~~three-six~~ affected facilities, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, and delivery and haul trips during construction and operation, are expected to occur during the implementation of PAR 1135. Therefore, the responses to the following questions rely on the assumptions described in the introductory remarks and are specific to each facility and their individual secondary impacts.

II. a), b), c), & d) No Impact. Compliance with PAR 1135 is expected to be met by repowering, retrofitting, or replacing affected electric ~~power~~-generating units to meet updated BARCT. Since both construction and operation activities that would occur as a result of implementing the proposed project would occur within the existing boundaries of each affected facility, there are no provisions in PAR 1135 that would affect land use plans, policies, or regulations. Land use and other planning considerations are determined by local governments and no land use or planning requirements relative to agricultural resources would be altered by the proposed project. Each of the ~~three-six~~ affected facilities are located on existing industrial or commercial land use areas. For these reasons, implementation of PAR 1135 would not convert farmland to non-agricultural use or conflict with zoning for agriculture use or a Williamson Act contract. Furthermore, it is not expected that PAR 1135 would conflict with existing zoning for, or cause rezoning of, forest land; or result in the loss of forest land or conversion of forest land to non-forest use. Consequently, the proposed project would not create any significant adverse agriculture or forestry impacts.

Conclusion

Based upon these considerations, significant adverse agriculture and forestry resources impacts are not expected from implementing PAR 1135. Since no significant agriculture and forestry resources impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
III. AIR QUALITY AND GREENHOUSE GAS EMISSIONS.				
Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Diminish an existing air quality rule or future compliance requirement resulting in a significant increase in air pollutant(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Significance Criteria

To determine whether or not air quality and greenhouse gas impacts from implementing PAR 1135 are significant, impacts will be evaluated and compared to the criteria in Table 2-2. PAR 1135 will be considered to have significant adverse impacts if any one of the thresholds in Table 2-2 are equaled or exceeded.

**Table 2-2
SCAQMD Air Quality Significance Thresholds**

Mass Daily Thresholds ^a		
Pollutant	Construction ^b	Operation ^c
NO_x	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM₁₀	150 lbs/day	150 lbs/day
PM_{2.5}	55 lbs/day	55 lbs/day
SO_x	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
Toxic Air Contaminants (TACs), Odor, and GHG Thresholds		
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk \geq 10 in 1 million Cancer Burden $>$ 0.5 excess cancer cases (in areas \geq 1 in 1 million) Chronic & Acute Hazard Index \geq 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
GHG	10,000 MT/yr CO ₂ eq for industrial facilities	
Ambient Air Quality Standards for Criteria Pollutants ^d		
NO₂ 1-hour average annual arithmetic mean	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.03 ppm (state) and 0.0534 ppm (federal)	
PM₁₀ 24-hour average annual average	10.4 $\mu\text{g}/\text{m}^3$ (construction) ^e & 2.5 $\mu\text{g}/\text{m}^3$ (operation) 1.0 $\mu\text{g}/\text{m}^3$	
PM_{2.5} 24-hour average	10.4 $\mu\text{g}/\text{m}^3$ (construction) ^e & 2.5 $\mu\text{g}/\text{m}^3$ (operation)	
SO₂ 1-hour average 24-hour average	0.25 ppm (state) & 0.075 ppm (federal – 99 th percentile) 0.04 ppm (state)	
Sulfate 24-hour average	25 $\mu\text{g}/\text{m}^3$ (state)	
CO 1-hour average 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) and 35 ppm (federal) 9.0 ppm (state/federal)	
Lead 30-day Average Rolling 3-month average	1.5 $\mu\text{g}/\text{m}^3$ (state) 0.15 $\mu\text{g}/\text{m}^3$ (federal)	

^a Source: SCAQMD CEQA Handbook (SCAQMD, 1993)

^b Construction thresholds apply to both the South Coast Air Basin and Coachella Valley (Salton Sea and Mojave Desert Air Basins).

^c For Coachella Valley, the mass daily thresholds for operation are the same as the construction thresholds.

^d Ambient air quality thresholds for criteria pollutants based on SCAQMD Rule 1303, Table A-2 unless otherwise stated.

^e Ambient air quality threshold based on SCAQMD Rule 403.

KEY: lbs/day = pounds per day ppm = parts per million $\mu\text{g}/\text{m}^3$ = microgram per cubic meter \geq = greater than or equal to
MT/yr CO₂eq = metric tons per year of CO₂ equivalents $>$ = greater than

Revision: March 2015

Discussion

As explained in the introductory remarks to the Environmental Checklist, the proposed amendments to PAR 1135 that pertain to applicability and the proposed emission limits for electric ~~power~~-generating units to reflect updated BARCT are the key elements that would be expected to require some facility operators to make physical modifications to their equipment in order to achieve compliance and these activities may create secondary adverse environmental impacts. For the purpose of the analysis in this Mitigated SEA, activities associated with installing new or modifying existing air pollution control systems, and repowering or replacing electric ~~power~~ generating units are the only activities that have been identified as having potential secondary adverse environmental impacts associated with reducing NOx and other pollutants (e.g., ammonia, CO, VOC, and PM) from electric ~~power~~-generating units. Based on the BARCT assessment described in Chapter 1, only three electricity generating facilities have electric ~~power~~-generating units that would be expected to undergo physical modifications (e.g., installing new or modifying existing air pollution control systems, and repowering or replacing existing electric ~~power~~ generating units) in order to comply with PAR 1135 and three would elect to comply due to business decisions for a total of six facilities that are expected to undergo physical modifications.

Of the ~~three-six~~ affected electricity generating facilities, there are vast differences between the facilities due to the type of electric ~~power~~-generating units, geographic location, and site layout at each individual facility. Further, each of the ~~three-six~~ facilities is very different in how compliance with PAR 1135 may be achieved; Table 2-1 summarizes the potential modifications that may be expected to occur at the ~~three-six~~ affected electricity generating facilities. Therefore, at each of the ~~three-six~~ affected facilities, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, and delivery and haul trips during construction and operation, are expected to occur during the implementation of PAR 1135. Therefore, the responses to the following questions rely on the assumptions described in the introductory remarks and are specific to each facility and their individual secondary impacts.

III. a) No Impact. The SCAQMD is required by law to prepare a comprehensive district-wide Air Quality Management Plan (AQMP) which includes strategies (e.g., control measures) to reduce emission levels to achieve and maintain state and federal ambient air quality standards, and to ensure that new sources of emissions are planned and operated to be consistent with the SCAQMD's air quality goals. The AQMP's air pollution reduction strategies include control measures which target stationary, area, mobile and indirect sources. These control measures are based on feasible methods of attaining ambient air quality standards. Pursuant to the provisions of both the state and federal Clean Air Acts, the SCAQMD is also required to attain the state and federal ambient air quality standards for all criteria pollutants.

The most recent regional blueprint for how the SCAQMD will achieve air quality standards and healthful air is outlined in the 2016 AQMP¹⁹ which contains multiple goals of promoting reductions of criteria air pollutants, greenhouse gases, and toxics. In particular, the 2016 AQMP contains control measure CMB-05 – Further Reductions from RECLAIM Assessment, to commit to additional NOx emission reductions of five tons per day to occur by 2025. Also, CMB-05 concluded that an orderly sunset of the RECLAIM program may be the best way to achieve the additional five tons per day and reduce compliance burdens for RECLAIM facilities, while also achieving more actual and SIP creditable emissions reductions. Thus, CMB-05 also committed to

¹⁹ SCAQMD, Final 2016 Air Quality Management Plan, March, 2017. <http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/final-2016-aqmp/final2016aqmp.pdf>

a process of transitioning NO_x RECLAIM facilities to a command-and-control regulatory structure to ensure that the applicable equipment will meet BARCT level equivalency as soon as practicable.

As part of the on-going transition from facilities in the NO_x RECLAIM program to a command-and-control regulatory structure and implementation of CMB-05 in the 2016 AQMP, PAR 1135 has been crafted to further reduce NO_x emissions from electric generating facilities that own or operate electric ~~power~~-generating units. Upon implementation, PAR 1135 would be expected to reduce NO_x emissions by achieving updated BARCT compliance for electric ~~power~~-generating units.

For these reasons, PAR 1135 is not expected to obstruct or conflict with the implementation of the 2016 AQMP because the emission reductions from implementing PAR 1135 are in accordance with the emission reduction goals in the 2016 AQMP. PAR 1135 will help reduce NO_x emissions, which is consistent with the goals of the 2016 AQMP. Therefore, implementing PAR 1135 to reduce NO_x emissions from electricity generating facilities would not conflict with or obstruct implementation of the applicable air quality plans. Since no significant impacts were identified for this issue, no mitigation measures are necessary or required.

III. b) and f) Less Than Significant Impact. SCAQMD staff is not aware of any new electricity generating facilities planned to be constructed in the immediate future and is unable to predict or forecast, when, if at all, any would be built in the long-term. Therefore, in accordance with CEQA Guidelines Section 15145, an evaluation of construction and operation impacts for new facilities is concluded to be speculative and will not be evaluated further in this Mitigated SEA. Instead, the focus of the analysis will be on the affected facilities (Facility 1, Facility 2, ~~and Facility 3,~~ Facility 4, Facility 5, and Facility 6) and the effects of complying with PAR 1135 as explained in the following discussion.

Construction and Operation Activities

The primary source of air quality construction impacts that would be expected to occur from complying with PAR 1135 would be from physical changes and modifications to electric ~~power~~ generating units. There are approximately ~~34-31~~ facilities that will need to comply with PAR 1135, but only ~~three~~six, Facilities 1, 2, ~~and 3, 4, 5, and 6,~~ would be expected to undergo physical modifications requiring construction as a result of complying with PAR 1135. Specifically, ~~Facility~~facilities 1, 4, 5, and 6 ~~is~~are expected to undergo some minor construction to replace the existing catalyst modules in each of ~~the their four~~ existing SCR units with new catalyst modules. Facility 2 is expected to undergo substantial construction to replace five existing diesel internal combustion engines and SCR units with five new diesel internal combustion engines and SCR units. Finally, Facility 3 is expected to removing three existing boilers and installing up to three new turbines, three new SCR units and one new aqueous ammonia storage tank.

Similarly during operation (e.g., after construction is completed), only ~~two~~five facilities, Facilities 1 ~~and 3, 4, 5, and 6~~ would be expected to have new, albeit limited, operational impacts occur as a result of complying with PAR 1135.

In particular, if Facility 1, 4, 5, and 6 replaces the SCR catalyst modules with upgraded, more efficient catalyst modules in in each of ~~the four their~~ existing SCR units, additional aqueous ammonia may need to be injected into each of the ~~four~~ SCR units in order to achieve the desired NO_x emission reductions in accordance with PAR 1135. This potential increase in ammonia usage is estimated to require approximately ~~six~~one and a half additional deliveries of ammonia per year

per SCR unit which will in turn increase the annual operational emissions from six additional ammonia delivery vehicles per year for Facility 1, two additional ammonia delivery vehicles per year for Facility 4, 11 additional ammonia delivery vehicles per year for Facility 5, and two additional ammonia delivery vehicles per year for Facility 6. It is important to note that Facility 1, 4, 5, and 6 currently replaces the spent SCR catalyst modules approximately once every five years as part of regular maintenance and the potential for upgrading the catalyst modules is not expected to alter this five-year maintenance cycle. As such, this analysis assumes that no new or additional operational impacts associated with conducting catalyst maintenance activities (e.g., delivering fresh catalyst modules and hauling away and spent catalyst modules) will occur if the SCR catalyst modules are upgraded.

Once Facility 2 completes the replacement of their five existing diesel internal combustion engines and SCR units with five new diesel internal combustion engines and SCR units, the operation of the five new engines and SCR units will not be expected to create any new or additional operational impacts. Further, ~~because Facility 2 will not change the existing SCRs,~~ there would be no change to: 1) the amount of urea that is currently delivered, stored, and utilized by the ~~existing~~ new SCRs; and 2) the current maintenance schedule for replacing spent SCR catalyst (e.g., approximately every five years). Thus, no new or additional operational activities will be expected to occur at Facility 2 as a result of PAR 1135.

After Facility 3 removes their three existing boilers and installs up to three new turbines, three new SCRs, and one new aqueous ammonia storage tank, new operational impacts relative to the delivery and storage of aqueous ammonia are anticipated. Further, specific to the installation of three new SCRs, new operational activities to replace spent catalyst with fresh catalyst approximately every five years would be expected to occur at Facility 3.

Thus, the analysis focuses on the potential secondary adverse environmental impacts during construction at Facilities 1, 2, ~~and 3~~, 4, 5, and 6 and during operation at Facilities 1, ~~and 3~~, 4, 5, and 6. Table 2-3 summarizes the key requirements in PAR 1135 that may create secondary adverse air quality and greenhouse gas (GHG) impacts during construction and operation.

**Table 2-3
Physical Actions Anticipated at Affected Facilities During Construction and Operation**

Affected Facility	Physical Actions Anticipated During:	
	Construction	Operation
Facility 1	Remove and haul away existing catalyst modules and deliver and install new catalyst modules for 4 existing SCRs	<ol style="list-style-type: none"> 1. Continue existing spent catalyst replacement practices and maintenance schedule (e.g., every 5 years). 2. No change to existing aqueous ammonia storage tank. 3. Potential annual increase in amount of aqueous ammonia delivered and used by 4 existing SCRs.
Facility 2	<ol style="list-style-type: none"> 1. Remove 5 existing diesel internal combustion engines and SCR units and install 5 new diesel internal combustion engines and SCR units 2. Haul construction equipment, removed and new engines, SCR units, and waste material to and from Santa Catalina Island via barge 	<ol style="list-style-type: none"> 1. No changes to existing urea storage and usage. 2. No changes to existing SCR systems. 3. <u>2.</u> Continue existing spent catalyst replacement practices and maintenance schedule (e.g., every 5-years)
Facility 3	<ol style="list-style-type: none"> 1. Remove 3 existing boilers 2. Install up to 3 new turbines 3. Install up to 3 new SCRs 4. Install 1 new aqueous ammonia storage tank 	<ol style="list-style-type: none"> 1. New deliveries, storage, and use of aqueous ammonia by 3 new SCRs 2. New spent catalyst replacement practices and maintenance schedule (e.g., every 5 years)
Facility 4	<u>Remove and haul away existing catalyst module and deliver and install new catalyst module for the existing SCR</u>	<ol style="list-style-type: none"> 1. <u>Continue existing spent catalyst replacement practices and maintenance schedule (e.g., every 5 years).</u> 2. <u>No change to existing aqueous ammonia storage tank.</u> 3. <u>Potential annual increase in amount of aqueous ammonia delivered and used by existing SCR.</u>
Facility 5	<u>Remove and haul away existing catalyst modules and deliver and install new catalyst modules for 7 existing SCRs</u>	<ol style="list-style-type: none"> 1. <u>Continue existing spent catalyst replacement practices and maintenance schedule (e.g., every 5 years).</u> 2. <u>No change to existing aqueous ammonia storage tank.</u> 3. <u>Potential annual increase in amount of aqueous ammonia delivered and used by 7 existing SCRs.</u>
Facility 6	<u>Remove and haul away existing catalyst module and deliver and install new catalyst module for the existing SCR</u>	<ol style="list-style-type: none"> 1. <u>Continue existing spent catalyst replacement practices and maintenance schedule (e.g., every 5 years).</u> 2. <u>No change to existing aqueous ammonia storage tank.</u> 3. <u>Potential annual increase in amount of aqueous ammonia delivered and used by existing SCR.</u>

For the purpose of the conducting a worst-case CEQA analysis for Facilities 1, 2, ~~and 3, 4, 5, and 6~~ the following detailed assumptions have been made:

- Upon adoption of PAR 1135, one facility has four simple cycle turbines, one facility has three boilers, ~~and one facility has five diesel internal combustion engines, one facility has one simple cycle turbine, one facility has two combined cycle turbines and associated duct burners and five simple cycle turbines, and one facility has one simple cycle turbine~~ that would each be required to comply with updated BARCT emission limits by January 1, 2024. Each affected facility would be expected to undergo construction activities, as summarized in Table 2-3.

Construction at Facility 1, 4, 5, and 6:

- The catalyst modules in ~~the four~~ each affected SCR units for the four simple cycle gas turbines at Facility 1, the simple cycle gas turbine at Facility 4, the two combined cycle gas turbines and five simple cycle gas turbines at Facility 5, and the simple cycle gas turbine at Facility 6 are assumed to be replaced with more efficient catalyst.
- The replacement catalyst modules are pre-manufactured off-site; they are smaller than the existing catalyst modules so they are assumed to fit in the existing SCR catalyst housing without requiring modifications to the housing.
- Construction activities associated with replacing the catalyst modules for each SCR would be expected to last for a period of five days.
- The catalyst module replacement activities will occur in sequential order so that only one turbine and SCR will be offline at a time.
- The spent catalyst modules from ~~the four~~ each affected SCR units would need to be disposed of, or recycled for their precious metal content.
- For each SCR, the removal of spent catalyst modules and replacement of fresh catalyst modules is assumed to require the use of one forklift, one aerial lift, and one crane – with each operating four hours per day for five days with a construction crew consisting of three members driving light duty vehicles (LDA/LDT1/LDT2). In addition, the delivery of fresh catalyst modules is assumed to be supplied by one vendor driving a medium-heavy duty truck (MHDT) and the haul away of spent catalyst modules is assumed to be conducted by one waste hauler truck driving a heavy-heavy duty truck (HHDT).

Construction at Facility 2:

- Five diesel internal combustion engines and SCR units would need to be replaced. Construction activities associated with replacing one engine and SCR unit would be expected to last for a period of four days. The replacement is assumed to be sequential to minimize power disruptions or reductions to the facility's customers during construction.
- SCAQMD staff assumes that the demolition and construction phases for each engine and SCR replacement would not overlap because only one engine and SCR unit can be offline at a time in order for the facility to maintain a sufficient amount of power to its customers without causing a service disruption or reduced power supplies.
- Each engine and SCR unit is assumed to be transported to Santa Catalina Island via barge from the Port of Los Angeles.

- All construction equipment and materials would need to be delivered to the facility via barge. Due to the limited space at the facility, the hauling, unloading, and staging of construction equipment and materials would not be able to occur on the same day as construction to replace an engine.
- To remove one existing engine and SCR unit and install one new engine and SCR unit, the following construction equipment and workers are assumed to be needed:
 - Paving: one paver, one paving equipment, one roller, one cement and mortar mixer, and one tractor/loader/backhoe operating a maximum of four hours per day on one day and a construction crew of eight workers.
 - Engine and SCR unit Removal and Replacement: two cranes, one concrete/industrial saw, one rubber tired dozer, two rubber tired loaders, six forklifts, two welders, one cement and mortar mixer., and two generator sets operating a maximum of eight hours per day for three days with a construction crew consisting of 18 workers driving light duty vehicles (LDA/LDT1/LDT2), five vendors driving a combination of heavy-heavy duty trucks and medium-heavy duty trucks (HHDT, MHDT), and five waste haulers driving heavy-heavy duty trucks (HHDT).

Construction at Facility 3²⁰:

- Three boilers would need to be removed and replaced with up to three turbines that meet updated BARCT. Construction is assumed to last for approximately three years and would be expected to include the demolition/dismantling of the three existing boilers and construction of three new turbines with three new SCR units and one new aqueous ammonia storage tank.
- SCAQMD staff estimates that the demolition and construction phases would not be expected to overlap.
- No site-preparation is expected to be needed.
- Due to space limitations at the site, one turbine is assumed to be constructed on a peak day.
- The following equipment and workers are assumed to be needed:
 - Demolition: One crane, two excavators, two forklifts, two other general industrial equipment, one grader, one roller, two rubber tired dozers, four tractors/loaders/backhoes operating a maximum of eight hours per day for 150 days with a construction crew consisting of 68 workers driving light duty vehicles (LDA/LDT1/LDT2), three vendors driving medium-heavy duty trucks (MHDT), and 4,200 waste haulers driving heavy-heavy duty trucks (HHDT).

²⁰ The City of Glendale prepared a Final EIR for the Grayson Repowering Project but the document was not certified by the Glendale City Council at their meeting in Spring 2018. The Final EIR Grayson Repowering Project (FEIR Grayson Repowering Project) analyzed a project much grander in scope than what is required to comply with PAR 1135. For example the project description proposed to demolish the entire existing Grayson Power Plant support structures and equipment except for Unit 9. See the FEIR Grayson Repowering Project: <http://graysonrepowering.com/#final-eir>. The construction impacts were analyzed using CalEEMod Version 2016.3.1. However since the preparation of the FEIR Grayson Repower Project, CalEEMod has been updated to Version 2016.3.2. The FEIR Grayson Repowering Project concluded that construction air quality impacts would be less than significant. For the analysis in this SEA, SCAQMD staff assumed a similar construction schedule and construction equipment profile as in the FEIR, but adjusted the analysis to only focus on the activities and corresponding impacts that would be expected to occur in order to comply with PAR 1135. While SCAQMD staff's approach overestimates the construction impacts, the analysis in the SEA also concludes that there would be no significant air quality impacts during construction.

- Grading: Two excavators, one grader, one rollers, three tractors/loaders/backhoes, one concrete/industrial saw, one rubber tired dozer operation a maximum of eight hours per day for 30 days with a construction crew consisting of 15 workers driving light duty vehicles (LDA/LDT1/LDT2) and 3,000 waste haulers driving heavy-heavy duty trucks (HHDT).
- Paving: One aerial lift, one crane, one forklift, two pavers, two paving equipment, and two rollers operating a maximum of seven hours per day for 14 days with a construction crew consisting of 10 workers driving light duty vehicles (LDA/LDT1/LDT2), three vendors driving medium-heavy duty trucks (MHDT), and 220 waste haulers driving heavy-heavy duty trucks (HHDT).
- Construction: Three tractors/loaders/backhoes, three rubber tired loaders, six cranes, two welders, two rollers, two excavators, two forklifts, two other construction equipment operating a maximum of six hours per day for 300 days with a construction crew consisting of 200 workers driving light duty vehicles (LDA/LDT1/LDT2), eight vendors driving medium-heavy duty trucks (MHDT), and 3,700 waste haulers driving heavy-heavy duty trucks (HHDT).
- Architectural Coatings: One air compressor operating a maximum of four hours per day for 14 days with a construction crew consisting of four workers driving light duty vehicles (LDA/LDT1/LDT2).

Construction at all ~~3~~Six Facilities:

- CalEEMod version 2016.3.2 will be used to analyze the construction emissions at each of the ~~three~~six facilities based on the aforementioned assumptions.
- Construction activities are not assumed to overlap at the ~~three~~six facilities because of the wide variation of modifications that may be anticipated and the varying amounts of lead time needed for pre-construction/engineering design. The facility with the highest amount of daily construction emissions will represent the worst-case.

Operation at all ~~3~~Six Facilities:

Up to ~~34~~31 facilities will need to comply with PAR 1135 but only ~~three~~six facilities would be expected to undergo physical modifications. Of the ~~three~~six affected facilities, ~~only~~ Facilities 1 ~~and~~ 3, 4, 5, and 6 are expected to have new operation impacts, as explained below:

- ~~Facility~~Facilities 1's 1, 4, 5, and 6 proposed replacement and upgrade of ~~the each affected~~ SCR catalyst modules may require additional aqueous ammonia to be injected into the four SCR units at Facility 1, one SCR unit at Facility 4, seven SCR units at Facility 5, and one SCR unit at Facility 6 in order to achieve the desired NOx emission reductions. This analysis assumes an increase of six aqueous ammonia deliveries per year at Facility 1, two aqueous ammonia deliveries per year at Facility 4, 11 aqueous ammonia deliveries per year at Facility 5, and two aqueous ammonia delivers per year at Facility 6 will be needed to supply the existing aqueous ammonia storage tanks. However, because Facility 1, 4, 5, and 6 currently replaces ~~the each spent~~ SCR catalyst modules approximately every five years as part of regular maintenance, this analysis assumes that the same maintenance schedule will continue with the upgraded SCR catalyst modules.
- Facility 2 is assumed to not create any new operational impacts because the proposed modifications would not change: 1) the amount of urea that is currently delivered and

stored; and 2) the current maintenance schedule for replacing spent SCR catalyst approximately every five years.

- Facility 3 is expected to install one new aqueous ammonia tank; thus, new operational impacts relative to the delivery and storage of aqueous ammonia are anticipated. Facility 3 is also expected to install three new SCRs which will require spent catalyst to be replaced approximately every five years.
- No additional permanent employees are expected to be hired at any of the ~~three~~six facilities as a result of PAR 1135.

Construction Impacts

Construction emissions were estimated using the California Emissions Estimator Model® version 2016.3.2 (CalEEMod²¹). To retrofit, repower, or replace electric ~~power~~-generating units the use of construction off-road equipment was assumed on a facility-by-facility basis and is detailed in Tables 2-4 through 2-6²². In addition, emissions from all on-road vehicles transporting workers, vendors, and material removal and delivery during construction were also calculated using CalEEMod. The detailed output reports for the CalEEMod runs are included in Appendix C of this Mitigated SEA. Tables 2-7 through 2-9 summarize the results of the construction air quality analysis during the construction activities. Appendix C also contains the spreadsheets with the results and assumptions used for this analysis.

**Table 2-4
Construction Equipment to
Replace Catalyst Modules in One SCR Unit at Facility 1, 4, 5, and 6**

Construction Phase	Off-Road Equipment Type	Amount	Daily Usage Hours
Building Construction	Forklift	1	4
Building Construction	Aerial Lift	1	4
Building Construction	Crane	1	4

²¹ CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operations from a variety of land use projects.

²² In general, no or limited construction emissions from grading are anticipated because retrofitting, repowering, or replacing electric power generating units occurs at existing industrial/commercial facilities and, therefore, would not be expected to require digging, earthmoving, grading, etc.

**Table 2-5
Construction Equipment to
Remove One Engine and Install One New Engine and SCR Unit at Facility 2**

Construction Phase	Off-Road Equipment Type	Amount	Daily Usage Hours
Demolition	Concrete/Industrial Saw	1	8
Demolition	Crane	1	7
Demolition	Forklift	3	7
Demolition	Generator Set	1	7
Demolition	Rubber Tired Dozer	1	1
Demolition	Rubber Tired Loader	2	7
Demolition	Tractor/Loader/Backhoe	2	6
Demolition	Welder	1	7
Building Construction	Crane	1	7
Building Construction	Forklift	3	7
Building Construction	Generator Set	1	7
Building Construction	Rubber Tired Loader	2	7
Building Construction	Tractor/Loader/Backhoe	2	8
Building Construction	Welder	1	7
Paving	Cement and Mortar Mixer	1	3
Paving	Paver	1	4
Paving	Paving Equipment	1	4
Paving	Roller	1	2
Paving	Tractor/Loader/Backhoe	1	4

**Table 2-6
Construction Equipment Remove Three Boilers and Install Three New Turbines, Three
New SCR Units, and One New Aqueous Ammonia Storage Tank at Facility 3**

Construction Phase	Off-Road Equipment Type	Amount	Daily Usage Hours
Demolition	Concrete/Industrial Saw	1	8
Demolition	Crane	1	3
Demolition	Excavator	2	3
Demolition	Forklift	2	2
Demolition	Grader	1	1
Demolition	Other General Industrial Equipment	2	2
Demolition	Roller	1	1
Demolition	Rubber Tired Dozer	2	3
Demolition	Tractor/Loader/Backhoe	2	4
Grading	Concrete/Industrial Saw	1	8
Grading	Excavator	2	3
Grading	Grader	1	4
Grading	Roller	1	4
Grading	Rubber Tired Dozer	1	4
Grading	Tractor/Loader/Backhoe	2	3
Building Construction	Cranes	2	3
Building Construction	Excavator	2	1
Building Construction	Forklift	2	6
Building Construction	Other Construction Equipment	2	1
Building Construction	Roller	1	1
Building Construction	Rubber Tired Loader	2	2
Building Construction	Tractor/Loader/Backhoe	2	1
Building Construction	Welders	1	4
Paving	Aerial Lift	1	1
Paving	Cement and Mortar Mixer	4	6
Paving	Crane	1	4
Paving	Forklift	1	3
Paving	Paver	2	5
Paving	Paving Equipment	2	5
Paving	Roller	2	5
Paving	Tractor/Loader/Backhoe	1	7
Architectural Coating	Air Compressor	1	4

Table 2-7
Peak Daily Construction Emissions During
Catalyst Modules Replacement in One SCR at Facility 1, 4, 5 and 6

Construction Activity	VOC (lb/day)	NOx (lb/day)	CO (lb/day)	SOx (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
1 SCR Catalyst Replacement occurring on a peak day	0.4	5.0	3.1	0.0	0.3	0.2
Total Peak Daily Construction Emissions	0.4	5.0	3.1	0.0	0.3	0.2
SIGNIFICANCE THRESHOLD FOR CONSTRUCTION	75	100	550	150	150	55
SIGNIFICANT?	NO	NO	NO	NO	NO	NO

- The emissions are estimated using CalEEMod version 2016.3.2 and include emissions from on-road vehicles and off-road construction equipment.
- To avoid having more than one unit being offline at a time, the replacement of catalyst modules for one SCR unit is assumed to occur on a peak day.
- Appendix C contains the detailed calculations.

Table 2-8A
Peak Daily Construction Emissions
To Transport One Engine and SCR unit to Facility 2

Construction Activity	VOC (lb/day)	NOx (lb/day)	CO (lb/day)	SOx (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
1 Barge Round-Trip	1.3	10	22	0.10	0.19	1.5
Total Peak Daily Construction Emissions	1.3	10	22	0.10	0.19	1.5
SIGNIFICANCE THRESHOLD FOR CONSTRUCTION	75	100	550	150	150	55
SIGNIFICANT?	NO	NO	NO	NO	NO	NO

- The emissions were estimated using barge emission factors in the Final Negative Declaration for the Petro-Diamond Terminal Company Marine Terminal Permit Modification Project, Appendix A: Emission Calculations. July 2008.
- Facility 2 is assumed to replace five engines in sequential order because only one engine can be offline at a time in order for the facility to maintain a sufficient amount of power to its customers without causing a service disruption or reduced power supplies. Thus, only one existing engine demolition and one new engine installation is expected to occur each year. On a peak day, there will be one engine installation at Facility 2. Barge trips are not expected to occur on the same day as the installation of one new engine.
- Appendix C contains the detailed calculations.

Table 2-8B
Peak Daily Construction Emissions
To Install One New Engine and SCR unit at Facility 2

Construction Activity	VOC (lb/day)	NOx (lb/day)	CO (lb/day)	SOx (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
1 Engine Demolition and 1 New Engine Installation	4.3	40	27	0.1	3.4	2.3
Total Peak Daily Construction Emissions	4.3	40	27	0.1	3.4	2.3
SIGNIFICANCE THRESHOLD FOR CONSTRUCTION	75	100	550	150	150	55
SIGNIFICANT?	NO	NO	NO	NO	NO	NO

- The emissions were estimated using CalEEMod version 2016.3.2 and include emissions from on-road vehicles and off-road construction equipment.
- Facility 2 is assumed to replace five engines in sequential order because only one engine can be offline at a time in order for the facility to maintain a sufficient amount of power to its customers without causing a service disruption or reduced power supplies. Thus, only one existing engine demolition and one new engine installation is expected to occur each year. On a peak day, there will be one engine installation at Facility 2. Barge trips are not expected to occur on the same day as the installation of one new engine.
- Appendix C contains the detailed calculations.

Table 2-9
Peak Daily Construction Emissions to Remove Three Boilers
and Install Three New Turbines, Three New SCR Units,
and One New Aqueous Ammonia Storage Tank at Facility 3

Construction Activity	VOC (lb/day)	NOx (lb/day)	CO (lb/day)	SOx (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
Remove 3 Existing Boilers and Install 3 New Turbines, 3 New SCR units, and 1 New Aqueous Ammonia Storage Tank	16	51	22	0.1	6.3	3.3
Total Peak Daily Construction Emissions	16	51	22	0.1	6.3	3.3
SIGNIFICANCE THRESHOLD FOR CONSTRUCTION	75	100	550	150	150	55
SIGNIFICANT?	NO	NO	NO	NO	NO	NO

- The emissions are estimated using CalEEMod version 2016.3.2 and include emissions from on-road vehicles and off-road construction equipment.
- Due to space constraints and to avoid having more than one unit being offline at a time, the demolition/removal of existing equipment and the installation of new equipment is assumed to occur on different days in multiple stages.
- Appendix C contains the detailed calculations.

Given the duration of the construction expected at each of the ~~three~~^{six} affected facilities and the length of time to comply with the requirements of PAR 1135 (on or before January 1, 2024, approximately five years for compliance), the construction phases for each facility are not expected to overlap on a peak day. In the most conservative assumption, if two facilities were to overlap their construction phases, the air quality impacts due to construction are expected to be less than

significant. Thus, as shown in Tables 2-7 through 2-9 the air quality impacts due to construction from implementation of PAR 1135 are expected to be less than significant.

Operational Impacts

As explained previously, secondary air quality operational impacts are expected to occur from the following activities: 1) Facility 1, 4, 5, and 6's proposed replacement and upgrade of the catalyst modules in each of the four existing SCR units for their four existing turbines at Facility 1, the one existing SCR unit for their one existing turbine at Facility 4, the seven existing SCR units for their seven existing turbines at Facility 5, and the one existing SCR unit for the one existing turbine at Facility 6; and 2) Facility 3's deliveries and usage of aqueous ammonia for their new aqueous ammonia tank and the new five-year maintenance schedule to replace spent catalyst in their three new SCRs.

It is important to note that there are other types of ongoing, needed maintenance of the electric ~~power~~-generating units themselves and the periodic source tests that are conducted are both types of operational activities which already take place at each of the affected facilities and are considered part of the existing setting. PAR 1135 does not impose new maintenance or source testing requirements that would alter this existing setting.

Total operational emissions were estimated using CARB's EMFAC2017²³ for the following mobile sources: trucks for aqueous ammonia and catalyst module deliveries and trucks for hauling away spent catalysts. Facilities 1 ~~and~~ 3, 4, 5, and 6 already have monthly deliveries of aqueous ammonia, with one delivery occurring on a peak day at each facility. However, after PAR 1135 is implemented, additional annual deliveries of aqueous ammonia are expected at Facility 1, 4, 5, and 6 due to the additional aqueous ammonia required for the four SCRs with upgraded catalyst modules at Facility 1, the one SCR with an upgraded catalyst module at Facility 4 and 6, and the seven SCRs with upgraded catalyst modules at Facility 5, but the deliveries of aqueous ammonia on a peak day are expected to remain the same as the baseline. Facility 3 currently has one existing aqueous ammonia storage tank, so if one additional aqueous ammonia storage tank is installed as a result of PAR 1135, then the amount of aqueous ammonia to be delivered on a peak day is expected to double when compared to the existing setting. Nonetheless, one delivery truck can carry two trailers with sufficient supplies of aqueous ammonia on a peak day. Therefore, it is not expected that there would be an additional increase in ammonia delivery trucks to occur on a peak day due to implementation of PAR 1135.

In addition, Facility 3's spent catalyst modules in the new SCR units will need to be replaced approximately every five years; thus, this analysis assumes one additional delivery of fresh catalyst modules and one haul trip of spent catalyst modules per year for each of the three new SCR units.

For Facility 1, 4, 5, and 6 one truck currently delivers aqueous ammonia on a peak day, driving a round trip distance of 100 miles for each delivery. The existing air quality impacts during operation from one truck delivering aqueous ammonia to Facility 1, 4, 5, and 6 are summarized in Table 2-10. After changing out the SCR catalyst modules, the existing SCR units are anticipated to consume additional aqueous ammonia such that an additional six deliveries of aqueous ammonia to Facility 1 per year will be needed. This annual increase in aqueous ammonia deliveries will not

²³ The EMFAC emissions model is developed and used by CARB to assess emissions from on-road vehicles including cars, trucks, and buses in California. It should be noted that EMFAC2017 has not yet been approved by U.S. EPA but does provide the latest factors developed. https://www.arb.ca.gov/msei/categories.htm#onroad_motor_vehicles

change the number of aqueous ammonia deliveries occurring on a peak day (e.g., one truck). The detailed spreadsheet with the assumptions used for this analysis are provided in Appendix C.

Table 2-10
Existing Peak Daily Operational Emissions from One Aqueous Ammonia Deliveries Delivery to Facility 1, 4, 5, and 6

Key Activities During Operation	VOC (lb/day)	NOx (lb/day)	CO (lb/day)	SOx (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
One Existing Delivery Truck	0.34	0.52	0.03	0.02	0.08	0.00
Total Peak Daily Operational Emissions	0.34	0.52	0.03	0.02	0.08	0.00
SIGNIFICANCE THRESHOLD DURING OPERATION	55	55	550	150	150	55
SIGNIFICANT?	NO	NO	NO	NO	NO	NO

- On a peak day, there is currently one aqueous ammonia delivery to Facility 1, 4, 5, and 6 and PAR 1135 will not increase the number of deliveries on a peak day. However, on an annual basis, six additional deliveries of aqueous ammonia will be expected at Facility 1, two additional deliveries of aqueous ammonia will be expected at Facility 4, 11 additional deliveries of aqueous ammonia will be expected at Facility 5, and two additional deliveries of aqueous ammonia will be expected at Facility 6.
- Each delivery truck is assumed to travel a round trip distance of 100 miles.
- The increased T6 instate construction heavy truck is for additional aqueous ammonia deliveries at Facility 1, 4, 5, and 6.
- See Appendix C for detailed calculations.

For Facility 3, the analysis assumes that there will be either one new truck delivery of aqueous ammonia or fresh catalyst modules or one new haul truck to dispose of spent catalyst modules occurring on a peak day, driving a round trip distance of 100 miles for each delivery type. The air quality impacts from these activities during operation are summarized in Table 2-11. The detailed spreadsheet with the assumptions used for this analysis are provided in Appendix C.

Table 2-11
Peak Daily Operational Emissions – Facility 3

Key Activities During Operation	VOC (lb/day)	NOx (lb/day)	CO (lb/day)	SOx (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
One New Delivery or Haul Truck	0.34	0.52	0.03	0.02	0.08	0.00
Total Peak Daily Operational Emissions	0.34	0.52	0.03	0.02	0.08	0.00
SIGNIFICANCE THRESHOLD DURING OPERATION	55	55	550	150	150	55
SIGNIFICANT?	NO	NO	NO	NO	NO	NO

- It is conservatively assumed that on a peak day, there will either be one new truck delivery trips of aqueous ammonia or fresh catalyst modules to Facility 3, or one new truck haul trip for removing spent catalyst for disposal from Facility 3.
- On an annual basis, an additional 24 new aqueous ammonia delivery truck trips and 3 new fresh catalyst module delivery truck trips to Facility 3 and 3 new spent catalyst haul away truck trips trucks (via T6 instate construction heavy truck) from Facility 3 are expected.
- Each delivery or haul truck is assumed to travel a round trip distance of 100 miles.
- See Appendix C for detailed calculations.

As indicated in Tables 2-10 and 2-11, operational emissions anticipated from implementing PAR 1135 do not exceed any air quality significance thresholds for any criteria pollutants. Therefore, the operational air quality impacts from implementing the proposed project are considered less than significant.

Construction and Operation Overlap Impact

Given the number of affected facilities and the varying modifications expected to occur at each affected facility in order to comply with PAR 1135, construction activities could potentially overlap with operational activities. Based on key compliance dates in PAR 1135, the overlap could occur from the date of adoption of PAR 1135 until January 1, 2024, which is the date when electricity generating facilities are required to ensure their electric power-generating units are in compliance with the emission limits set forth in PAR 1135. The largest amount of peak daily emissions during this overlap period would occur if Facility 3 is undergoing construction (see Table 2-9) on the same day both Facilities 1, ~~and 3~~, 4, 5, and 6 are undergoing operational activities (see Tables 2-10 and 2-11, respectively). According to SCAQMD policy, in the event that there is an overlap of construction and operation phases, the peak daily emissions from the construction and operation overlap period should be summed and compared to the SCAQMD's CEQA significance thresholds for operation because the latter are more stringent, and thus, more conservative. As such, emissions data from these three tables is presented in Table 2-12 and the total emissions have been compared to the air quality significance thresholds for operation.

Table 2-12
Peak Daily Emissions in Construction and Operation Overlap Phase

Construction and Operation Overlap Phase	VOC (lb/day)	NOx (lb/day)	CO (lb/day)	SOx (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
Peak Construction Emissions (Facility 3) ^a	16	51	22	0.1	6.3	3.3
Peak Operational Emissions (Facility 1) ^b	0.34	0.52	0.03	0.02	0.08	0.0
Peak Operational Emissions (Facility 3) ^b	0.34	0.52	0.03	0.02	0.08	0.0
Peak Operational Emissions (Facility 4) ^b	<u>0.34</u>	<u>0.52</u>	<u>0.03</u>	<u>0.02</u>	<u>0.08</u>	<u>0.0</u>
Peak Operational Emissions (Facility 5) ^b	<u>0.34</u>	<u>0.52</u>	<u>0.03</u>	<u>0.02</u>	<u>0.08</u>	<u>0.0</u>
Peak Operational Emissions (Facility 6) ^b	<u>0.34</u>	<u>0.52</u>	<u>0.03</u>	<u>0.02</u>	<u>0.08</u>	<u>0.0</u>
Total Overlapping Emissions^c	<u>1717.7</u>	<u>5253.6</u>	<u>22.622.2</u>	<u>0.140.2</u>	<u>6.466.7</u>	3.3
SIGNIFICANCE THRESHOLD DURING OPERATION	55	55	550	150	150	55
SIGNIFICANT?	NO	NO	NO	NO	NO	NO

- The maximum construction impact during the overlap phase is conservatively assumed to be the peak daily construction emissions from Table 2-9.
- The maximum operational impact during the overlap phase is conservatively assumed to be the peak daily operational emissions from Tables 2-10 and Table 2-11 combined.
- Once construction is completed at Facility 2, operational emissions from periodic maintenance are expected to be about the same as the pre-project operational emissions. Therefore, no new operational emissions from Facility 2 are expected.

As indicated in Table 2-12, the peak daily emissions during the construction and operational overlap period do not exceed any of the SCAQMD's air quality significance thresholds for operation. Therefore, the air quality impacts from construction and operation overlap are considered to be less than significant. In conclusion, the proposed project is also not expected to result in significant adverse air quality impacts during the construction and operation overlap period.

III. c) Less Than Significant Impact.

Cumulatively Considerable Impacts

Based on the foregoing analysis, since criteria pollutant project-specific air quality impacts from implementing PAR 1135 would not be expected to exceed any of the air quality significance thresholds in Table 2-2, cumulative air quality impacts are also expected to be less than significant. SCAQMD cumulative significance thresholds are the same as project-specific significance thresholds. Therefore, potential adverse impacts from implementing PAR 1135 would not be "cumulatively considerable" as defined by CEQA Guidelines Section 15064(h)(1) for air quality impacts. Per CEQA Guidelines Section 15064(h)(4), the mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable.

The SCAQMD's guidance on addressing cumulative impacts for air quality is as follows: "As Lead Agency, the SCAQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or EIR." "Projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant."²⁴

This approach was upheld by the court in *Citizens for Responsible Equitable Environmental Development v. City of Chula Vista* (2011) 197 Cal. App. 4th 327, 334. The Court determined that where it can be found that a project did not exceed the South Coast Air Quality Management District's established air quality significance thresholds, the City of Chula Vista properly concluded that the project would not cause a significant environmental effect, nor result in a cumulatively considerable increase in these pollutants. The court found this determination to be consistent with CEQA Guidelines Section 15064.7, stating: "The lead agency may rely on a threshold of significance standard to determine whether a project will cause a significant environmental effect." The court found that, "[a]lthough the project will contribute additional air pollutants to an existing nonattainment area, these increases are below the significance criteria." "Thus, we conclude that no fair argument exists that the Project will cause a significant unavoidable cumulative contribution to an air quality impact." In *Rialto Citizens for Responsible Growth*, the court upheld the SCAQMD's approach to utilizing the established air quality significance thresholds to determine whether the impacts of a project would be cumulatively considerable. *Rialto Citizens for Responsible Growth v. City of Rialto* (2012) 208 Cal. App. 4th 899. As in *Chula Vista* and *Rialto Citizens for Responsible Growth*, here the SCAQMD has demonstrated, when using accurate and appropriate data and assumptions, that the project will not

²⁴ SCAQMD Cumulative Impacts Working Group White Paper on Potential Control Strategies to Address Cumulative Impacts From Air Pollution, August 2003, Appendix D, Cumulative Impact Analysis Requirements Pursuant to CEQA, at D-3. <http://www.aqmd.gov/docs/default-source/Agendas/Environmental-Justice/cumulative-impacts-working-group/cumulative-impacts-white-paper-appendix.pdf>.

exceed the established SCAQMD significance thresholds. Thus, it may be concluded that the proposed project will not contribute to a significant unavoidable cumulative air quality impact.

III. d) Less Than Significant Impact. Diesel particulate matter (DPM) is considered a carcinogenic and chronic toxic air contaminant (TAC). Since the on- and off-road diesel equipment that may be used at Facilities 1, 2, ~~and 3~~, 4, 5, and 6 are expected to occur over a short-term during construction (e.g., no more than off and on over a five year period at any facility) and operation (e.g., delivery or haul trips would occur on one day), a Health Risk Assessment (HRA) was not conducted. The analysis in Section III. b) and f) concluded that the quantity of pollutants that may be generated from implementing the proposed project would be less than significant during construction, operation, and the construction and operation overlap period. Thus, the quantity of pollutants that may be generated from implementing PAR 1135 would not be considered substantial, irrespective of whether sensitive receptors are located near the affected facilities. For these reasons, implementation of PAR 1135 is not expected to expose sensitive receptors to substantial pollutant concentrations. Therefore, no significant adverse air quality impacts to sensitive receptors are expected from implementing PAR 1135.

III. e) Less Than Significant Impact.

Odor Impacts

With regard to odors, for all diesel-fueled equipment and vehicles that may be used during construction and operation at Facilities 1, 2, ~~and 3~~, 4, 5, and 6 the diesel fuel required to have a low sulfur content (e.g., 15 ppm by weight or less) in accordance with SCAQMD Rule 431.2 – Sulfur Content of Liquid Fuels. Such fuel is expected to minimize odor. Construction equipment will be primarily utilized within the confines of Facilities. Dispersion of diesel emissions over distance generally occurs so that odors associated with diesel emissions may not be discernable to offsite receptors, depending on the location of the equipment and its distance relative to the nearest offsite receptor. Further, the diesel trucks that may be used during both construction and operation activities will be operated on road until arriving at their destination facilities. Once on-site, the diesel trucks will not be allowed to idle longer than five minutes at any one location in accordance with the CARB idling regulation, so odors from these vehicles would not be expected for a prolonged period of time. Therefore, the addition of several pieces of construction equipment and trucks that will operate intermittently over a relatively short period of time, are not expected to generate diesel exhaust odor substantially greater than what is already typically present at the affected facilities.

The operation of the barge will occur over a short period of time (less than one day) and because dispersion of diesel emissions over distance generally occurs so that odors associated with diesel emissions may not be discernable to nearby receptors, especially since the barge would be traveling across the ocean. Therefore, operation of the barge is not expected to create objectionable odors affecting a substantial number of people.

The operation of gasoline fueled passenger vehicles for construction workers will be primarily utilized to transport construction workers to and from each facility during construction. The amount of gasoline fueled passenger vehicles used as part of the proposed project is relatively low when compared to the total population of passenger vehicles within the SCAQMD. Also, the gasoline fueled passenger vehicles would be used over a relatively short period of time and are not expected to generate gasoline exhaust odor substantially greater than what is already typically present on existing roadways.

Thus, PAR 1135 is not expected to create significant adverse objectionable odors during construction or operation. Since no significant impacts were identified for this issue, no mitigation measures for odors are necessary or required.

III. g) and h) Less Than Significant Impact.

Greenhouse Gas (GHG) Impacts

Significant changes in global climate patterns have recently been associated with global warming, an average increase in the temperature of the atmosphere near the Earth's surface, attributed to accumulation of GHG emissions in the atmosphere. GHGs trap heat in the atmosphere, which in turn heats the surface of the Earth. Some GHGs occur naturally and are emitted to the atmosphere through natural processes, while others are created and emitted solely through human activities. The emission of GHGs through the combustion of fossil fuels (i.e., fuels containing carbon) in conjunction with other human activities, appears to be closely associated with global warming. State law defines GHG to include the following: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆) (Health and Safety Code Section 38505(g)). The most common GHG that results from human activity is CO₂, followed by CH₄ and N₂O.

Traditionally, GHGs and other global warming pollutants are perceived as solely global in their impacts and that increasing emissions anywhere in the world contributes to climate change anywhere in the world. However, a study conducted on the health impacts of CO₂ “domes” that form over urban areas cause increases in local temperatures and local criteria pollutants, which have adverse health effects²⁵.

The analysis of GHGs is different than the analysis of criteria pollutants for the following reasons. For criteria pollutants, the significance thresholds are based on daily emissions because attainment or non-attainment is primarily based on daily exceedances of applicable ambient air quality standards. Further, several ambient air quality standards are based on relatively short-term exposure effects on human health (e.g., one-hour and eight-hour standards). Since the half-life of CO₂ is approximately 100 years, for example, the effects of GHGs occur over a longer term. They affect the global climate over a relatively long time frame. As a result, the SCAQMD's current position is to evaluate the effects of GHGs over a longer timeframe than a single day (i.e., annual emissions). GHG emissions are typically considered to have a cumulative impact because they contribute to global climate effects.

The SCAQMD convened a Greenhouse Gas CEQA Significance Threshold Working Group to consider a variety of benchmarks and potential significance thresholds to evaluate GHG impacts. On December 5, 2008, the SCAQMD adopted an interim CEQA GHG Significance Threshold for projects where SCAQMD is the lead agency (SCAQMD 2008). This GHG interim threshold is set at 10,000 metric tons of CO₂ equivalent emissions (CO₂e) per year (MT/yr). Projects with incremental increases below this threshold will not be cumulatively considerable.

²⁵ Jacobsen, Mark Z. “Enhancement of Local Air Pollution by Urban CO₂ Domes,” Environmental Science and Technology, as describe in Stanford University press release on March 16, 2010 available at: <http://news.stanford.edu/news/2010/march/urban-carbon-domes-031610.html>.

GHG emission impacts from implementing PAR 1135 were calculated at the project-specific level during construction and operation for Facilities 1, 2, ~~and 3~~, 4, 5, and 6. For example, the replacement of catalyst modules in the four existing SCR units and the corresponding annual increase in deliveries of aqueous ammonia at ~~Facilities~~ Facility 1, 4, 5, and 6 has the potential to increase the use of fuel (e.g., gasoline and diesel) during construction and operation which will in turn cause an increase CO₂ emissions. Similar increases in both gasoline and diesel fuel use are also expected to occur at Facilities 2 and 3.

Table 2-13 summarizes the GHG analysis, which shows that the implementation of PAR 1135 may result in the generation of ~~25.9~~26.2 amortized²⁶ MT/yr of CO₂e emissions during construction and ~~0.14~~0.15 MT/yr of CO₂e emissions from mobile sources during operation from all the affected facilities, which is less than the SCAQMD's air quality significance threshold of 10,000 MT/yr of CO₂e for GHGs. The detailed calculations of project GHG emissions can be found in Appendix C.

Table 2-13
GHG Emissions From Facilities 1, 2, ~~and 3~~, 4, 5, and 6

Activity	CO ₂ e (MT/year ^a)
Construction ^b – on-road vehicles, barges, and off-road equipment	25.9 <u>26.2</u>
Operation – on-road vehicles	0.14 <u>0.15</u>
Total Project Emissions	25.94 <u>26.35</u>
SIGNIFICANCE THRESHOLD	10,000
SIGNIFICANT?	NO

^a 1 metric ton = 2,205 pounds

^b GHGs from short-term construction activities are amortized over 30 years

Thus, as shown in Table 2-13 the SCAQMD's GHG significance threshold for industrial sources will not be exceeded. For this reason, implementing the proposed project is not expected to generate significant adverse cumulative GHG air quality impacts. Further, PAR 1135 is not expected to generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment or conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHG gases.

Conclusion

Based upon these considerations, significant air quality and GHG emissions impacts are not expected from implementing PAR 1135. Since no significant air quality and GHG emissions impacts were identified, no mitigation measures are necessary or required.

²⁶ GHGs from short-term construction activities are amortized over 30 years. To amortize GHGs from temporary construction activities over a 30-year period (*est. life of the project/ equipment*), the amount of CO₂e emissions during construction are calculated and then divided by 30.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES.				
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Impacts on biological resources will be considered significant if any of the following criteria apply:

- The project results in a loss of plant communities or animal habitat considered to be rare, threatened or endangered by federal, state or local agencies.
- The project interferes substantially with the movement of any resident or migratory wildlife species.
- The project adversely affects aquatic communities through construction or operation of the project.

Discussion

As explained in the introductory remarks to the Environmental Checklist, the proposed amendments to PAR 1135 that pertain to applicability and the proposed emission limits for electric ~~power~~-generating units to reflect updated BARCT are the key elements that would be expected to require some facility operators to make physical modifications to their equipment in order to achieve compliance and these activities may create secondary adverse environmental impacts. For the purpose of the analysis in this Mitigated SEA, activities associated with installing new or modifying existing air pollution control systems, and repowering or replacing electric ~~power~~ generating units are the only activities that have been identified as having potential secondary adverse environmental impacts associated with reducing NOx and other pollutants (e.g., ammonia, CO, VOC, and PM) from electric ~~power~~-generating units. Based on the BARCT assessment described in Chapter 1, only three electricity generating facilities have electric ~~power~~-generating units that would be expected to undergo physical modifications (e.g., installing new or modifying existing air pollution control systems, and repowering or replacing existing electric ~~power~~ generating units) in order to comply with PAR 1135 and three would elect to comply due to business decisions for a total of six facilities that are expected to undergo physical modifications.

Of the ~~three-six~~ affected electricity generating facilities, there are vast differences between the facilities due to the type of electric ~~power~~-generating units, geographic location, and site layout at each individual facility. Further, each of the ~~three-six~~ facilities is very different in how compliance with PAR 1135 may be achieved; Table 2-1 summarizes the potential modifications that may be expected to occur at the ~~three-six~~ affected electricity generating facilities. Therefore, at each of the ~~three-six~~ affected facilities, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, and delivery and haul trips during construction and operation, are expected to occur during the implementation of PAR 1135. Therefore, the responses to the following questions rely on the assumptions described in the introductory remarks and are specific to each facility and their individual secondary impacts.

IV. a), b), c), & d) No Impact. The proposed project does not require the acquisition of land, building new structures, or construction on greenland to comply with PAR 1135. Also, PAR 1135 does not require the conversion of riparian habitats or sensitive natural communities where endangered or sensitive species may be found. Physical modifications at Facilities 2 and 3 may require some demolition and concrete pours which could involve some minor earth-moving activities, but these activities are expected to take place within each facility's boundaries that are already paved and developed. The sites of the affected facilities that would be subject to PAR 1135 currently do not support riparian habitat, federally protected wetlands, or migratory corridors because they are existing developed and established facilities currently used for industrial

purposes. Additionally, special status plants, animals, or natural communities identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service are not expected to be found on or in close proximity to the affected facilities because the affected facilities are in existing industrial or commercial land use areas. Therefore, PAR 1135 would have no direct or indirect impacts that could adversely affect plant or animal species or the habitats on which they rely with the SCAQMD's jurisdiction.

Finally, the electric power-generating units that may undergo modifications as part of implementing PAR 1135 are located at existing facilities and the anticipated modifications would not occur on or near a wetland, riparian habitat, or in the path of migratory species. Therefore, PAR 1135 would have no direct or indirect impacts that could adversely affect plant or animal species or the habitats on which they rely within the SCAQMD's jurisdiction.

IV. e) & f) No Impact. The proposed project is not envisioned to conflict with local policies or ordinances protecting biological resources or local, regional, or state conservation plans. Land use and other planning considerations are determined by local governments and no land use or planning requirements would be altered by implementing PAR 1135. Additionally, PAR 1135 would not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or any other relevant habitat conservation plan, and would not create divisions in any existing communities because all activities associated with complying with PAR 1135 would occur at existing electricity generating facilities that are located in previously disturbed areas which are not typically subject to Habitat or Natural Community Conservation Plans.

The SCAQMD, as the Lead Agency, has found that, when considering the record as a whole, there is no evidence that implementation of PAR 1135 would have potential for any new adverse effects on wildlife resources or the habitat upon which wildlife depends. Accordingly, based upon the preceding information, the SCAQMD has, on the basis of substantial evidence, rebutted the presumption of adverse effect contained in Title 14 of the California Code of Regulations Section 753.5 (d) - Projects Eligible for a No Effect Determination.

Conclusion

Based upon these considerations, significant biological resource impacts are not expected from implementing PAR 1135. Since no significant biological resource impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource as defined in Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource, site, or feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Impacts to cultural resources will be considered significant if:

- The project results in the disturbance of a significant prehistoric or historic archaeological site or a property of historic or cultural significance, or tribal cultural significance to a community or ethnic or social group or a California Native American tribe.
- Unique paleontological resources or objects with cultural value to a California Native American tribe are present that could be disturbed by construction of the proposed project.
- The project would disturb human remains.

Discussion

As explained in the introductory remarks to the Environmental Checklist, the proposed amendments to PAR 1135 that pertain to applicability and the proposed emission limits for electric ~~power~~-generating units to reflect updated BARCT are the key elements that would be expected to require some facility operators to make physical modifications to their equipment in order to achieve compliance and these activities may create secondary adverse environmental impacts. For the purpose of the analysis in this Mitigated SEA, activities associated with installing new or modifying existing air pollution control systems, and repowering or replacing electric ~~power~~ generating units are the only activities that have been identified as having potential secondary adverse environmental impacts associated with reducing NOx and other pollutants (e.g., ammonia, CO, VOC, and PM) from electric ~~power~~-generating units. Based on the BARCT assessment described in Chapter 1, only three electricity generating facilities have electric ~~power~~-generating units that would be expected to undergo physical modifications (e.g., installing new or modifying existing air pollution control systems, and repowering or replacing existing electric ~~power~~

generating units) in order to comply with PAR 1135 and three would elect to comply due to business decisions for a total of six facilities that are expected to undergo physical modifications.

Of the ~~three-six~~ affected electricity generating facilities, there are vast differences between the facilities due to the type of electric ~~power~~-generating units, geographic location, and site layout at each individual facility. Further, each of the ~~three-six~~ facilities is very different in how compliance with PAR 1135 may be achieved; Table 2-1 summarizes the potential modifications that may be expected to occur at the ~~three-six~~ affected electricity generating facilities. Therefore, at each of the ~~three-six~~ affected facilities, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, and delivery and haul trips during construction and operation, are expected to occur during the implementation of PAR 1135. Therefore, the responses to the following questions rely on the assumptions described in the introductory remarks and are specific to each facility and their individual secondary impacts.

V. a), b), c), d) & e) No Impact. There are existing laws in place that are designed to protect and mitigate potential impacts to cultural resources. For example, CEQA Guidelines state that generally, a resource shall be considered “historically significant” if the resource meets the criteria for listing in the California Register of Historical Resources, which include the following:

- Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
- Is associated with the lives of persons important in our past;
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values;
- Has yielded or may be likely to yield information important in prehistory or history (CEQA Guidelines Section 15064.5).

Buildings, structures, and other potential culturally significant resources that are less than 50 years old are generally excluded from listing in the National Register of Historic Places, unless they are shown to be exceptionally important. For any of the buildings or structures that may be affected by PAR 1135 that are older than 50 years, they are buildings that are currently utilized for industrial purposes and would generally not be considered historically significant since they would not have any of the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values. Therefore, PAR 1135 is not expected to cause any impacts to significant historic cultural resources.

Construction-related activities are expected to be confined within the existing footprint of the affected facilities that have already been fully developed and paved such that PAR 1135 is not expected to require physical changes to the environment which may disturb paleontological or archaeological resources. Furthermore, it is envisioned that these areas are already either devoid of significant cultural resources or whose cultural resources have been previously disturbed. Therefore, PAR 1135 has no potential to cause a substantial adverse change to a historical or archaeological resource, directly or indirectly to destroy a unique paleontological resource or site or unique geologic feature, or disturb any human remains, including those interred outside formal cemeteries. Implementing of PAR 1135 is, therefore, not anticipated to result in any activities or

promote any programs that could have a significant adverse impact on cultural resources in the District.

PAR 1135 is not expected to require physical changes to a site, feature, place, cultural landscape, sacred place or object with cultural value to a California Native American Tribe. Furthermore, PAR 1135 is not expected to result in a physical change to a resource determined to be eligible for inclusion or listed in the California Register of Historical Resources or included in a local register of historical resources. For these reasons, PAR 1135 is not expected to cause any substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074.

As part of releasing this CEQA document for public review and comment, the SCAQMD also provided a formal notice of the proposed project to all California Native American Tribes (Tribes) that requested to be on the Native American Heritage Commission's (NAHC) notification list per Public Resources Code Section 21080.3.1(b)(1). The NAHC notification list provides a 30-day period during which a Tribe may respond to the formal notice, in writing, requesting consultation on the proposed project.

In the event that a Tribe submits a written request for consultation during this 30-day period, the SCAQMD will initiate a consultation with the Tribe within 30 days of receiving the request in accordance with Public Resources Code Section 21080.3.1(b). Consultation ends when either: 1) both parties agree to measures to avoid or mitigate a significant effect on a Tribal Cultural Resource and agreed upon mitigation measures shall be recommended for inclusion in the environmental document [see Public Resources Code Section 21082.3(a)]; or 2) either party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached [see Public Resources Code Section 21080.3.2(b)(1)-(2) and Section 21080.3.1(b)(1)].

Conclusion

Based upon these considerations, significant adverse cultural resources impacts are not expected from implementing PAR 1135. Since no significant cultural resources impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
VI. ENERGY. Would the project:				
a) Conflict with adopted energy conservation plans?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the need for new or substantially altered power or natural gas utility systems?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Create any significant effects on local or regional energy supplies and on requirements for additional energy?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create any significant effects on peak and base period demands for electricity and other forms of energy?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Comply with existing energy standards?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Impacts to energy resources will be considered significant if any of the following criteria are met:

- The project conflicts with adopted energy conservation plans or standards.
- The project results in substantial depletion of existing energy resource supplies.
- An increase in demand for utilities impacts the current capacities of the electric and natural gas utilities.
- The project uses non-renewable resources in a wasteful and/or inefficient manner.

Discussion

As explained in the introductory remarks to the Environmental Checklist, the proposed amendments to PAR 1135 that pertain to applicability and the proposed emission limits for electric ~~power~~-generating units to reflect updated BARCT are the key elements that would be expected to require some facility operators to make physical modifications to their equipment in order to achieve compliance and these activities may create secondary adverse environmental impacts. For the purpose of the analysis in this Mitigated SEA, activities associated with installing new or modifying existing air pollution control systems, and repowering or replacing electric ~~power~~ generating units are the only activities that have been identified as having potential secondary adverse environmental impacts associated with reducing NOx and other pollutants (e.g., ammonia, CO, VOC, and PM) from electric ~~power~~-generating units. Based on the BARCT assessment described in Chapter 1, only three electricity generating facilities have electric ~~power~~-generating units that would be expected to undergo physical modifications (e.g., installing new or modifying existing air pollution control systems, and repowering or replacing existing electric ~~power~~ generating units) in order to comply with PAR 1135 and three would elect to comply due to business decisions for a total of six facilities that are expected to undergo physical modifications.

Of the ~~three-six~~ affected electricity generating facilities, there are vast differences between the facilities due to the type of electric ~~power~~-generating units, geographic location, and site layout at each individual facility. Further, each of the ~~three-six~~ facilities is very different in how compliance with PAR 1135 may be achieved; Table 2-1 summarizes the potential modifications that may be expected to occur at the ~~three-six~~ affected electricity generating facilities. Therefore, at each of the ~~three-six~~ affected facilities, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, and delivery and haul trips during construction and operation, are expected to occur during the implementation of PAR 1135. Therefore, the responses to the following questions rely on the assumptions described in the introductory remarks and are specific to each facility and their individual secondary impacts.

VI. a) & e) No Impact. PAR 1135 is not expected to conflict with any adopted energy conservation plans or violate any energy conservation standards because existing facilities would be expected to continue implementing any existing energy conservation plans that are currently in place regardless of whether PAR 1135 is implemented.

PAR 1135 is not expected to cause new development because it does not require new facilities to be built. While PAR 1135 will primarily apply to existing facilities, it will also apply to any new facilities that may be built in the future. However, SCAQMD staff is not aware of any new electricity generating facilities planned to be constructed in the immediate future and is unable to predict or forecast, when, if at all, any would be built in the long-term. Therefore, in accordance with CEQA Guidelines Section 15145, an evaluation of construction and operation energy impacts for new facilities is concluded to be speculative and will not be evaluated further in this analysis. Instead, the focus of the analysis will be on the affected facilities (~~Facility 1, Facility 2, and Facility 3~~ Facilities 1, 2, 3, 4, 5, and 6) and the energy effects of complying with PAR 1135 as explained in the following discussion.

Any energy resources that may be necessary to replace, repower, or retrofit electric ~~power~~ generating units in accordance with PAR 1135 would be used to achieve NO_x reductions from electricity generating facilities, and therefore, would not be using non-renewable resources in a wasteful manner. In actuality, the potential modifications to the affected electricity generating units as outlined in Table 2-1 would be expected to improve the efficiency of the modified or replaced equipment once construction is completed. Further, the air quality benefits that would be expected to occur as a result of implementing PAR 1135 would not require the affected electricity generating facilities to provide additional electricity and natural gas to their customers; thus, PAR 1135 would not require substantial alterations in order to increase the existing power generated or natural gas supply systems because any additional energy needed to implement PAR 1135 can be provided from existing supplies. For these reasons, PAR 1135 would not be expected to conflict with energy conservation plans or existing energy standards, or use non-renewable resources in a wasteful manner.

VI. b), c) & d) Less Than Significant Impact. PAR 1135 applies to electricity generating facilities that produce power from the operation of electric ~~power~~-generating units. PAR 1135 will not result in the loss of utility systems because the affected facilities will continue to generate the same amount of electricity after the completion of the modifications and new equipment installations. Post-project, the new equipment will continue to be able to handle local and regional needs as well as peak demands.

To implement the physical modifications outlined in Table 2-1, diesel fuel is expected to be needed to operate off-road construction equipment and on-road vehicles (passenger vehicles and trucks) during construction. Gasoline and diesel fuel would be also needed to operate on-road vehicles (passenger vehicles and trucks) during operation.

It is important to note that diesel fuel is expected to continue to be used at Facility 2 since the new replacement engines will also require diesel fuel to operate. However, because the new replacement engines at Facility 2 are expected to be more efficient than their older, less efficient predecessors, an equivalent or less amount of diesel fuel is expected to be needed to produce the same electricity power output, post construction.

Similarly, while no natural gas will be needed during construction, during operation, Facility 1, 4, 5, and 6 will continue to operate ~~its four~~ their simple cycle turbines which are currently fueled by natural gas. Thus, ~~Facility-Facilities 1's-1, 4, 5, and 6's~~ turbines will continue to require natural gas for their operation after the catalyst module upgrades have been made to their ~~four~~ existing SCR units. The upgrades to the catalyst modules will help the existing SCR units operate more efficiently. The SCR units require electricity, not natural gas, to operate. For these reasons, the operation of each affected ~~the four~~ turbines and ~~four~~ each affected SCR units after the modifications are implemented are not expected to substantially alter the amount of natural gas or electricity needed by Facility 1, 4, 5, and 6 above current baseline levels.

Also, since Facility 3 is anticipated to replace its three natural gas boilers with up to three new natural gas turbines, natural gas will continue to be utilized by Facility 3. Because the new replacement turbines at Facility 3 are expected to be more efficient than the older, less efficient boilers, an equivalent or less amount of natural gas is expected to be needed to produce the same electricity power output, post construction.

The following sections evaluate the various types of energy that may be affected by the implementation of PAR 1135.

Construction

During construction, diesel fuel will be consumed by portable construction equipment (e.g., welders, forklifts, and etc.) needed to replace, retrofit, or repower electric ~~power~~-generating units, gasoline will be consumed by construction workers' vehicles, and diesel fuel will be consumed vendor or haul trucks traveling to and from each affected facility. Also, in particular to Facility 2, one diesel-fueled barge will be needed to transport the replacement internal combustion engines and SCR units and traveling to and from the Port of Los Angeles to Santa Catalina Island (the city of Avalon).

To estimate “worst-case” energy impacts associated with construction activities, SCAQMD staff estimated the total gasoline and diesel fuel consumption for each affected facility during construction and operation based on CARB’s OFFROAD2017 model. Also, in order to estimate the amount of diesel fuel that may be consumed by the barge’s main engine and two auxiliary engines during equipment transport to and from Facility 2, SCAQMD staff relied on the engine fuel use estimates presented in the July 2008 Final Negative Declaration for Petro-Diamond

Terminal Company Marine Terminal Permit Modification Project²⁷. Appendix C contains the assumptions and calculations for estimating fuel usage associated with construction.

CalEEMod version 2016.3.2 was used to calculate construction emissions which was determined from the default trip lengths for construction worker commute trips (e.g., 29.4 miles per worker round trip to/from the construction site per day), vendor trips (e.g., 14 miles per vendor round trip to/from the construction site per day), and waste hauler trips (e.g., 40 miles per waste hauler round trip to/from the construction site per day). The fuel usage per vehicle used during construction round trips was then calculated by taking the CalEEMod output and assuming that each: 1) construction workers' gasoline-fueled passenger vehicle would get a fuel economy rate of approximately 21 miles per gallon (mpg); 2) vendor diesel truck would get a fuel economy rate of approximately 6.6 mpg; and 3) waste hauler diesel truck would get a fuel economy rate of approximately 5.9 mpg. Table 2-14 summarizes the projected fuel use impacts associated with construction at Facilities 1, 2, and 3.

Table 2-14
Total Projected Fuel Usage for Construction Activities

Fuel Type	Year 2016 Estimated Basin Fuel Demand (mmgal/yr)	Fuel Usage (mmgal)	Total % Above Baseline	Exceed Significance Thresholds?^c
Diesel	749	0.0774 0.0772	0.0103	NO
Gasoline	6,997	0.0006 0.0007	0.00001	NO

^a California Annual Retail Fuel Outlet Report Results (CEC-A15) Spreadsheets, 2017 California Energy Commission (http://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html). [Accessed August 24, 2018.]

^b Estimated peak fuel usage from construction activities. Diesel usage estimates are based on the usage of portable construction equipment and vendor and haul trips plus barge trips. Gasoline usage estimates are derived from construction workers' vehicle daily trips to and from work.

^c SCAQMD's energy threshold for both types of fuel used is 1% of fuel supply.

The 2016 California Annual Retail Fuel Outlet Report Results from the California Energy Commission (CEC) state that 749 million gallons of diesel and 6,997 million gallons of gasoline were consumed in 2016 in the Basin. Thus, even if an additional ~~77,304~~77,223 gallons of diesel and ~~649-703~~ gallons of gasoline are consumed during construction, the fuel usages are 0.0103% and 0.00001% above the 2016 baseline for diesel and gasoline, respectively, and both projected increases are well below the SCAQMD's significance threshold for fuel supply. Thus, no significant adverse impact on fuel supplies would be expected during construction.

Operation - Fuel Use From Vehicles

Once construction is completed, additional vehicle trips and fuel use are expected to be needed from the following activities during operation: 1) delivering six additional trips per year of aqueous ammonia to Facility 1; two additional trips per year of aqueous ammonia to Facility 4, 11 additional trips per year of aqueous ammonia to Facility 5, and two additional trips per year of aqueous ammonia to Facility 6; 2) periodically delivering aqueous ammonia to supply the new

²⁷ Final Negative Declaration for: Petro-Diamond Terminal Company Marine Terminal Permit Modification Project. Appendix A: Emission Calculations: Fuel Use Estimation. July 2008. Page 71. <http://www.aqmd.gov/docs/default-source/ceqa/documents/permit-projects/2008/2008petrofd.pdf>

aqueous ammonia storage tank at Facility 3; and 3) replacing spent catalyst modules with fresh catalyst modules in the three new SCRs approximately every five years at Facility 3.

For Facility 1 ~~and~~, 3, 4, 5, and 6 it is assumed one delivery or haul truck (e.g., for either aqueous ammonia, fresh catalyst modules, or spent catalyst modules) would occur on a peak day. In addition, a round trip distance of 100 miles with a fuel economy of approximately 5.9 miles per gallon (mpg) for HDT was assumed for every on-road truck that is used for the delivery of aqueous ammonia or the delivery or hauling of catalyst modules. The air quality impacts for these vehicle trips during operation were analyzed and summarized in Table 2-10 and Table 2-11. The detailed spreadsheet with the assumptions used for this analysis are provided in Appendix C. As previously explained in Section III - Air Quality and Greenhouse Gases, by assuming that Facility 1 will need six HDTs per year, ~~and~~ Facility 3 will need 30 HDTs per year, Facility 4 will need two HDTs per year, Facility 5 will need 11 HDTs per year, and Facility 6 will need two HDTs per year the corresponding projected annual total diesel use is presented in Table 2-15 and would be approximately ~~1,231~~1,744 gallons per year.

The 2016 California Annual Retail Fuel Outlet Report Results from California Energy Commission states that 749 million gallons of gasoline are consumed in 2016 in the Basin. Thus, even if an additional ~~1,231~~1,744 gallons per year of diesel are consumed during operation, the diesel fuel usage is 0.0002% above the 2016 baseline for diesel, and the projected increase is well below the SCAQMD's significance threshold for diesel fuel supply. As such, no significant adverse impact on diesel fuel supplies would be expected during operation.

Table 2-15
Annual Total Projected Diesel Fuel Usage for Operational Activities

Type of Equipment	Diesel
	(gal/yr)
HDT – Facility 1	205
HDT – Facility 3	1,026
<u>HDT – Facility 4</u>	<u>68</u>
<u>HDT – Facility 5</u>	<u>376</u>
<u>HDT – Facility 6</u>	<u>68</u>
Total:	<u>1,231</u>1,744
Year 2016 Estimated Basin Fuel Demand (gal/yr) ^a	749,000,000
Total % Above Baseline	0.0002
SIGNIFICANT?^b	NO

^a California Annual Retail Fuel Outlet Report Results (CEC-A15) Spreadsheets, 2017 California Energy Commission (http://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html). [Accessed February 6, 2018.]

^b SCAQMD's energy threshold for fuel used is 1% of fuel supply.

Conclusion

Based upon these considerations, significant adverse energy impacts are not expected from implementing PAR 1135. Since no significant energy impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
VII. GEOLOGY AND SOILS. Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Impacts on the geological environment will be considered significant if any of the following criteria apply:

- Topographic alterations would result in significant changes, disruptions, displacement, excavation, compaction, or over covering of large amounts of soil.
- Unique geological resources (paleontological resources or unique outcrops) are present that could be disturbed by the construction of the proposed project.
- Exposure of people or structures to major geologic hazards such as earthquake surface rupture, ground shaking, liquefaction or landslides.
- Secondary seismic effects could occur which could damage facility structures, e.g., liquefaction.
- Other geological hazards exist which could adversely affect the facility, e.g., landslides, mudslides.

Discussion

As explained in the introductory remarks to the Environmental Checklist, the proposed amendments to PAR 1135 that pertain to applicability and the proposed emission limits for electric ~~power~~-generating units to reflect updated BARCT are the key elements that would be expected to require some facility operators to make physical modifications to their equipment in order to achieve compliance and these activities may create secondary adverse environmental impacts. For the purpose of the analysis in this Mitigated SEA, activities associated with installing new or modifying existing air pollution control systems, and repowering or replacing electric ~~power~~ generating units are the only activities that have been identified as having potential secondary adverse environmental impacts associated with reducing NOx and other pollutants (e.g., ammonia, CO, VOC, and PM) from electric ~~power~~-generating units. Based on the BARCT assessment described in Chapter 1, only three electricity generating facilities have electric ~~power~~-generating units that would be expected to undergo physical modifications (e.g., installing new or modifying existing air pollution control systems, and repowering or replacing existing electric ~~power~~ generating units) in order to comply with PAR 1135 and three would elect to comply due to business decisions for a total of six facilities that are expected to undergo physical modifications.

Of the ~~three-six~~ affected electricity generating facilities, there are vast differences between the facilities due to the type of electric ~~power~~-generating units, geographic location, and site layout at each individual facility. Further, each of the ~~three-six~~ facilities is very different in how compliance with PAR 1135 may be achieved; Table 2-1 summarizes the potential modifications that may be expected to occur at the ~~three-six~~ affected electricity generating facilities. Therefore, at each of the ~~three-six~~ affected facilities, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, and delivery and haul trips during construction and operation, are expected to occur during the implementation of PAR 1135. Therefore, the responses to the following questions rely on the assumptions described in the introductory remarks and are specific to each facility and their individual secondary impacts.

VII. a), b), c), d), & e) No Impact. Of the physical modifications summarized in Table 2-1 that may occur at Facilities 1, 2, ~~and 3, 4, 5, and 6~~ only the modifications at Facilities 2 and 3 may require some demolition activities as part of removing old equipment and installing new equipment. If modifications to the foundations and equipment supports are needed, some relatively minor site preparation activities may be required prior to installing equipment and these

activities would occur within facility boundaries. Nevertheless, the degree of site preparation that may be needed would not be on a scale that could adversely affect geophysical conditions at Facilities 1, 2, ~~or~~ 3, 4, 5, or 6.

It is also important to note that PAR 1135 does not contain any requirements that would cause or require a new facility to be built. While PAR 1135 will primarily apply to existing facilities, it will also apply to any new facilities that may be built in the future. However, SCAQMD staff is not aware of any new electricity generating facilities planned to be constructed in the immediate future and is unable to predict or forecast, when, if at all, any would be built in the long-term. Therefore, in accordance with CEQA Guidelines Section 15145, an evaluation of geology and soils impacts for new facilities is concluded to be speculative and will not be evaluated further in this analysis. Instead, the focus of the analysis will be on the affected facilities (Facilities 1, 2, ~~and~~ 3, 4, 5, and 6) and the geology and soils effects of complying with PAR 1135 as explained in the following discussion.

Southern California is an area of known seismic activity. As part of the issuance of building permits, local jurisdictions are responsible for assuring that the Uniform Building Code is adhered to and can conduct inspections to ensure compliance. The Uniform Building Code is considered to be a standard safeguard against major structural failures and loss of life. The basic formulas used for the Uniform Building Code seismic design require determination of the seismic zone and site coefficient, which represents the foundation condition at the site. The Uniform Building Code requirements also consider liquefaction potential and establish stringent requirements for building foundations in areas potentially subject to liquefaction.

Accordingly, the anticipated physical modifications of electric ~~power~~-generating units and their associated air pollution control equipment at Facilities 1, 2, ~~and~~ 3, 4, 5, and 6 in order to comply with PAR 1135 would be expected to conform to the Uniform Building Code and all other applicable state and local building codes. Structures must be designed to comply with the Uniform Building Code Zone 4 requirements if they are located in a seismically active area. The local city or county is responsible for assuring that the existing affected facilities comply with the Uniform Building Code as part of the issuance of the building permits and can conduct inspections to ensure compliance. The Uniform Building Code is considered to be a standard safeguard against major structural failures and loss of life. The goal of the code is to provide structures that will: 1) resist minor earthquakes without damage; 2) resist moderate earthquakes without structural damage but with some non-structural damage; and 3) resist major earthquakes without collapse but with some structural and non-structural damage.

The Uniform Building Code is considered to be a standard safeguard against major structural failures and loss of life. The Uniform Building Code bases seismic design on minimum lateral seismic forces (“ground shaking”). The basic formulas used for the Uniform Building Code seismic design require determination of the seismic zone and site coefficient, which represent the foundation conditions at the site. The Uniform Building Code requirements also consider liquefaction potential and establish stringent requirements for building foundations in areas potentially subject to liquefaction.

Accordingly, existing buildings, structures, and equipment, as well as any that may be modified or replaced as a result of PAR 1135, are likely to conform to the Uniform Building Code and all other applicable state codes in effect at the time they were constructed. Thus, PAR 1135 would not alter the exposure of people or property to geological hazards such as earthquakes, landslides,

mudslides, ground failure, or other natural hazards. As a result, substantial exposure of people or structures to the risk of loss, injury, or death involving the rupture of an earthquake fault, seismic ground shaking, ground failure or landslides is not anticipated.

Of the physical modifications described in Table 2-1, none would be expected to involve construction activities that will result in substantial soil erosion or the loss of topsoil or make the soils under Facilities 1, 2, ~~and 3~~, 4, 5, and 6 further susceptible to expansion or liquefaction. Furthermore, subsidence is also not anticipated to be a problem since only minor excavation, grading, or filling activities, if any, are expected to occur at the affected facilities. Additionally, even if the areas where Facilities 1, 2, ~~and 3~~, 4, 5, and 6 are located may be prone to new landslide impacts or have unique geologic features, PAR 1135 would not be expected to change the pre-existing geology and soils setting or increase or exacerbate any existing risks at these facilities. PAR 1135 would also not require any existing facilities to be relocated onto a geologic unit or soil that is unstable or that would become unstable and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. Further, people or property will not be exposed to new impacts related to expansive soils or soils incapable of supporting water disposal because no additional water will be necessary to make the physical modifications that are summarized in Table 2-1. Finally, because each affected facility has an existing sewer system, the installation of septic tanks or alternative wastewater disposal systems or modifications to the existing sewer systems would not be necessary. Thus, implementation of PAR 1135 will not adversely affect soils associated with a installing a new septic system or alternative wastewater disposal system or modifying an existing sewer.

Conclusion

Based upon these considerations, significant adverse geology and soils impacts are not expected from the implementation of PAR 1135. Since no significant geology and soils impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
VIII. HAZARDS AND HAZARDOUS MATERIALS. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, and disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions, or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public use airport or a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Significantly increased fire hazard in areas with flammable materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Significance Criteria

Impacts associated with hazards will be considered significant if any of the following occur:

- Non-compliance with any applicable design code or regulation.
- Non-conformance to National Fire Protection Association standards.
- Non-conformance to regulations or generally accepted industry practices related to operating policy and procedures concerning the design, construction, security, leak detection, spill containment or fire protection.
- Exposure to hazardous chemicals in concentrations equal to or greater than the Emergency Response Planning Guideline (ERPG) 2 levels.

Discussion

As explained in the introductory remarks to the Environmental Checklist, the proposed amendments to PAR 1135 that pertain to applicability and the proposed emission limits for electric ~~power~~-generating units to reflect updated BARCT are the key elements that would be expected to require some facility operators to make physical modifications to their equipment in order to achieve compliance and these activities may create secondary adverse environmental impacts. For the purpose of the analysis in this Mitigated SEA, activities associated with installing new or modifying existing air pollution control systems, and repowering or replacing electric ~~power~~ generating units are the only activities that have been identified as having potential secondary adverse environmental impacts associated with reducing NOx and other pollutants (e.g., ammonia, CO, VOC, and PM) from electric ~~power~~-generating units. Based on the BARCT assessment described in Chapter 1, only three electricity generating facilities have electric ~~power~~-generating units that would be expected to undergo physical modifications (e.g., installing new or modifying existing air pollution control systems, and repowering or replacing existing electric ~~power~~ generating units) in order to comply with PAR 1135 and three would elect to comply due to business decisions for a total of six facilities that are expected to undergo physical modifications.

Of the ~~three-six~~ affected electricity generating facilities, there are vast differences between the facilities due to the type of electric ~~power~~-generating units, geographic location, and site layout at each individual facility. Further, each of the ~~three-six~~ facilities is very different in how compliance with PAR 1135 may be achieved; Table 2-1 summarizes the potential modifications that may be expected to occur at the ~~three-six~~ affected electricity generating facilities. Therefore, at each of the ~~three-six~~ affected facilities, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, and delivery and haul trips during construction and operation, are expected to occur during the implementation of PAR 1135. Therefore, the responses to the following questions rely on the assumptions described in the introductory remarks and are specific to each facility and their individual secondary impacts.

VIII. a) Less than Significant Impact. Compliance with PAR 1135 is expected to result in physical modifications to Facilities 1, 2, ~~and~~ 3, 4, 5, and 6 that may require additional deliveries, storage and use of aqueous ammonia which is considered a hazardous chemical.

For example, Facility 1, 4, 5, and 6 currently receives deliveries of and stores aqueous ammonia; the aqueous ammonia is injected into ~~four~~ each facilities SCR units to reduce NOx emissions from ~~their four simple cycle~~ each turbines. To comply with PAR 1135, Facility 1, 4, 5, and 6 is expected to replace the existing catalyst modules in each of their affected ~~the four~~ SCR units and the new catalyst modules are expected to require additional aqueous ammonia to be injected into each

affected SCR unit in order to achieve the desired NO_x emission reductions. The existing aqueous ammonia storage capacity is expected to be sufficient to handle the anticipated increased consumption rate of aqueous ammonia on a peak day such that no new storage tanks would need to be installed and no new deliveries would need to occur on a peak day. However, the increased aqueous ammonia consumption rate will increase the number of turnovers (e.g., refilling frequency) of the storage tank on an annual basis such that deliveries of aqueous ammonia to Facility 1, 4, 5, and 6 are projected to increase by up to six truck trips per year for Facility 1, two truck trips per year for Facility 4, eleven truck trips per year for Facility 5, and two truck trips per year for Facility 6. Facility 1, 4, 5, and 6 currently receives aqueous ammonia from a local supplier located in the greater Los Angeles area and deliveries are made by tanker trucks via public roads; the supplier and delivery amounts per trip are not expected to change as a result of PAR 1135. The maximum capacity of an ammonia tanker truck is approximately 7,000 gallons. Because the amount of aqueous ammonia that is currently delivered to Facility 1, 4, 5, and 6 on a daily basis is not expected to change (e.g., one truck on a peak day per delivery), there will be no increase in the number of peak daily truck trips such that no new significant transportation impacts associated with deliveries of aqueous ammonia at Facility 1, 4, 5, and 6 will be expected to occur.

Facility 2 currently receives deliveries of and stores urea on-site as part of existing operations for their SCR system. The urea is converted to aqueous ammonia on-site for use in their existing SCR units. The amount of urea that may be needed by Facility 2 as a result of PAR 1135 is not expected to change such that the current amount and frequency of urea deliveries at Facility 2 should be sufficient and thus, is also not expected to change. Thus, there will be no increase in the number of peak daily truck trips that no new significant transportation impacts associated with deliveries of urea to Facility 2 will be expected to occur.

Similar to Facility 1, 4, 5, and 6, Facility 3 also currently receives deliveries of and stores aqueous ammonia on-site and the aqueous ammonia is injected into their existing SCR units to reduce NO_x emissions from their existing combustion equipment. To comply with PAR 1135, Facility 3 is expected to replace three existing boilers with three new natural gas turbines equipped with three new SCR units. Because the existing aqueous ammonia storage capacity at the site is not expected to be sufficient to handle the anticipated increased need for aqueous ammonia, Facility 3 plans to demolish one aqueous ammonia tank and install a new 12,000 gallon tank constructed above a spill containment basin and equipped with sump vapor control²⁸. Facility 3 currently receives aqueous ammonia from a local supplier located in the greater Los Angeles area and deliveries are made by tanker trucks via public roads. As a result of PAR 1135, one new delivery of aqueous ammonia via tanker truck is expected to occur on a peak day. Also, when compared to the existing setting, the new aqueous ammonia tank will have a larger capacity than the size of the tank to be demolished. As such, a net increase in the total amount of aqueous ammonia stored on site is expected to occur at Facility 3.

Overall, even with additional aqueous ammonia deliveries per year at Facility 1, 4, 5, and 6 and the additional aqueous ammonia delivery at Facility 3 on a peak day, the total increase in the number of aqueous ammonia deliveries on a peak day is not expected to exceed a single delivery on a daily basis. Hence, no new significant hazards are expected to the public or environment through the continued routine transport of aqueous ammonia or urea at each of the affected facilities. Further, the transport, storage, use, and disposal of hazardous materials (aqueous

²⁸ FEIR Grayson Repowering Project. March 2018. Section 3.0 Project Description, Page 3.32.
<http://graysonrepowering.com/#final-eir>

ammonia and urea) at the affected facilities is already required to be managed in accordance with applicable federal, state, and local rules and regulations and compliance with these regulations is expected to continue after PAR 1135 is implemented. Regulations for the transport of hazardous materials by public highway are described in 49 CFR Sections 173 and 177. Therefore, PAR 1135 is not expected to create a significant hazard to the public or environment through the routine transport, storage, use, and disposal of hazardous materials.

VIII. b) Less than Significant Impact with Mitigation. In the process of implementing physical modifications to comply with PAR 1135, facility operators must comply with several requirements relative to hazards and hazardous materials. For example, OSHA requires the preparation of a fire prevention plan per 29 CFR Part 1910 and also implements requirements for the protection of workers handling toxic, flammable, reactive, or explosive materials per 20 CFR Part 1910 and CCR Title 8. In addition, Section 112 (r) of the Federal Clean Air Act Amendments of 1990 [42 USC 7401 et. Seq.] and Article 2, Chapter 6.95 of the California Health and Safety Code require facilities that handle listed regulated substances to develop a Risk Management Plan (RMP) to prevent accidental releases of regulated substances. RMPs consist of three main elements: 1) a hazard assessment that includes off-site consequences analyses and a five-year accident history; 2) a prevention program, and 3) an emergency response program. At the local level, RMPs are implemented by the local fire departments. If any of the facilities subject to PAR 1135 has already prepared an RMP, it may need to be revised to incorporate any modifications that are made as part of efforts to comply with PAR 1135. The Hazardous Materials Transportation Act is the federal legislation that regulates transportation of hazardous materials. Finally, facility operators are required to comply with all applicable design codes and regulations, conform to National Fire Protection Association standards, and conform to policies and procedures concerning leak detection containment and fire protection. Thus, for any physical modifications that are undertaken by Facilities 1, 2, ~~and 3, 4, 5, and 6~~ to comply with PAR 1135, each facility is assumed to comply with the above mentioned regulations; thus, no significant adverse compliance impacts with these regulatory requirements are expected.

Of the ~~three-six~~ facilities identified in Table 2-1 as undergoing physical modifications in order to comply with PAR 1135: 1) ~~Facility~~ Facilities 1, 4, 5, and 6 ~~is~~ are expected to maintain ~~its~~ their existing aqueous ammonia storage capacity; 2) Facility 2 is expected to maintain its existing urea storage capacity; and 3) Facility 3 is expected to increase the amount of aqueous ammonia stored on-site. Facilities 1, 2, ~~and 3, 4, and 5~~ are all located less than 1,000 feet or one-quarter mile of a sensitive receptor, including individuals at hospitals, nursing facilities, daycare centers, schools, and elderly intensive care facilities, as well as residential and off-site occupational areas. Facility 6 is located more than 2,800 feet from a sensitive receptor. Each of these ~~three-six~~ facilities is located within an urbanized, industrial, or commercial land use area.

With the ongoing on-site storage and handling of aqueous ammonia at Facilities 1 ~~and 3, 4, 5, and 6~~ there is an existing possibility for an accidental spill and release of aqueous ammonia, which could create a potential risk for an offsite public and sensitive receptor exposure. However, since only Facility 3 is expected to increase the amount of aqueous ammonia that is delivered, stored, and used as a result of PAR 1135, only Facility 3 is expected to alter the existing potential risk for an offsite public and sensitive receptor exposure.

Ammonia (NH₃), though not a carcinogen, is a chronic and acutely hazardous material. Located on the MSDS for NH₃ (19 percent by weight), the hazards ratings are as follows: health is rated 3 (highly hazardous), flammability is rated 1 (slight), and reactivity is rated 0 (none). Therefore,

an increase in the use of ammonia in response to the proposed project may increase the current existing risk setting associated with deliveries (i.e., truck and road accidents) and on-site or offsite spills for each facility that currently uses, will begin to use, or will increase the use of ammonia. Exposure to a toxic gas cloud is the potential hazard associated with this type of control equipment. A toxic gas cloud is the release of a volatile chemical such as anhydrous ammonia that could form a cloud and migrate off-site, thus exposing individuals. Anhydrous ammonia is heavier than air such that when released into the atmosphere, it would form a cloud at ground level rather than be dispersed. “Worst-case” conditions tend to arise when very low wind speeds coincide with the accidental release, which can allow the chemicals to accumulate rather than disperse.

~~However, e~~Current SCAQMD ~~policy practice typically does not~~~~no longer~~ allows the use of anhydrous ammonia for air pollution control equipment. Further, To minimize the hazards associated with using ammonia for air pollution control technology, it is the permitting ~~policy practice~~ of the SCAQMD to typically require the use of 19 percent by volume aqueous ammonia in air pollution control equipment for the following reasons: 1) 19 percent aqueous ammonia does not travel as a dense gas like anhydrous ammonia; and 2) 19 percent aqueous ammonia is not on any acutely hazardous material lists unlike anhydrous ammonia or aqueous ammonia at higher percentages. As such, SCAQMD staff does not typically issue permits for the use of anhydrous ammonia or aqueous ammonia in concentrations higher than 19 percent by volume for use in SCR systems. As a result, this analysis focuses on the use of 19 percent by volume aqueous ammonia. Thus, because aqueous ammonia (at 19 percent by weight) would be required for any permits issued for the installation of air pollution control equipment that utilize ammonia, ~~no new~~ hazards from toxic clouds are expected to be ~~associated~~ lessened when compared to higher concentrations of ammonia with the proposed project. As a practical matter, the actual concentration that is typically utilized is a solution of 19% aqueous ammonia, which contains approximately 81% water. Due to the high water content, aqueous ammonia is not considered to be flammable. Thus, heat-related hazard impacts such as fires, explosions, and boiling liquid-expanding vapor explosion (BLEVE) are not expected to occur from the increased delivery, storage and use of aqueous ammonia as part of implementing PAR 1135. Therefore, heat-related hazard impacts are not expected to occur as a result of the proposed project and will not be evaluated as part of this hazards analysis.

In addition, the shipping, handling, storage, and disposal of hazardous materials inherently poses a certain risk of a release to the environment. Thus, the routine transport of hazardous materials, use, and disposal of hazardous materials may increase as a result of implementing the proposed project. Further, if a facility installs control technology that utilizes ammonia, such as SCR, the proposed project may alter the transportation modes for feedstock and products to/from the existing facilities such as aqueous ammonia and catalyst.

The accidental release of ammonia from a delivery and use is a localized event (i.e., the release of ammonia would only affect the receptors that are within the zone of the toxic endpoint). The accidental release from a delivery would also be temporally limited in the fact that deliveries are not likely to be made at the same time in the same area. Based on these limitations, it is assumed that an accidental release would be limited to a single delivery or single facility at a time. In addition, it is unlikely that an accidental release from both a delivery truck and the stationary storage tank would result in more than the amount evaluated in the catastrophic release of the storage tank because the level of ammonia in the storage tanks would be low or else the delivery trip would not be necessary.

The analysis of hazard impacts can rely on information from past similar projects (i.e., installing new, or retrofitting existing equipment with NOx control technology that utilizes ammonia to

comply with SCAQMD rules and regulations and installation of associated ammonia storage tanks) where the SCAQMD was the lead agency responsible for preparing an environmental analysis pursuant to CEQA. To the extent that future projects to install NO_x control technology that utilizes ammonia and associated ammonia storage equipment conform to the ammonia hazard analysis in this Mitigated SEA, no further hazard analysis may be necessary. If site-specific characteristics are involved with future projects to install NO_x control equipment that utilize ammonia that are outside the scope of this analysis, a further ammonia hazards analysis may be warranted.

A hazard analysis is dependent on several parameters about the potential hazard such as the capacity of the aqueous ammonia storage tank, the concentration of the aqueous ammonia, meteorological conditions, location of nearest receptor, and the dimensions of secondary containment, if any. Prior to the development of PAR 1135, the operator of Facility 3, as part of their repowering project, proposed to install a new aqueous ammonia tank to supply additional aqueous ammonia to four new natural gas turbines²⁹ and the effects of an offsite consequence from an accidental release of aqueous ammonia due to tank rupture was analyzed using the EPA RMP*Comp (Version 1.07) model. For the purpose of conducting a worst-case analysis in this Mitigated SEA, SCAQMD staff relied on the same assumptions as what was previously analyzed for Facility 3's repowering project³⁰ to evaluate what the offsite consequence hazard impact would be if the new aqueous ammonia storage tank would rupture at Facility 3, as follows:

- Number of new tanks: 1
- Capacity of tank: 12,000 gallons
- Contents: 20% concentration of aqueous ammonia³¹
- Location of tank for Facility 3: less than ¼-mile to existing residences or sensitive receptors (and adjacent to existing ammonia tank)³²
- Liquid Temperature: 77 °F
- Containment berm: Yes
- Diked Area: 519.75 feet
- Diked Height: 4.5 feet

Based on the worst-case defaults, the toxic endpoint from a catastrophic failure of an aqueous ammonia storage tank at Facility 3 would be within 0.1 mile (528 feet) downwind of the tank location. (See Appendix E for the full analysis.) The nearest sensitive receptor to Facility 3 is located approximately 200 feet away. Thus, the hazards and hazardous materials impacts due to an aqueous ammonia storage tank rupture at Facility 3 will be significant since sensitive receptors could be exposed to an aqueous ammonia release. Therefore, the proposed project has the potential to generate significant adverse hazard impacts as a result of the potential for accidental releases of aqueous ammonia.

²⁹ FEIR Grayson Repowering Project. March 2018. Section 3.0 Project Description, Page 3.1.

<http://graysonrepowering.com/#final-eir>

³⁰ FEIR Grayson Repowering Project. March 2018. Section 4.6 Hazards and Hazardous Materials, Page 4.6.1.6.

<http://graysonrepowering.com/#final-eir>

³¹ The EPA RMP*Comp model only has the capability of evaluating the hazard potential of a 20% solution of aqueous ammonia so the offsite consequence evaluation was based on a higher concentration of aqueous ammonia than what would be actually allowed under a SCAQMD permit (e.g., 19% aqueous ammonia).

³² FEIR Grayson Repowering Project. March 2018. Section Appendix G Hazards and Hazardous Materials Technical Reports, Page 535. <http://graysonrepowering.com/#final-eir>

If significant adverse environmental impacts are identified in a CEQA document, the CEQA document shall describe feasible measures that could minimize the significant adverse impacts (CEQA Guidelines Section 15126.4). Therefore, feasible mitigation measures to reduce the risk of an offsite consequence to nearby sensitive receptors are necessary.

The following mitigation measures are required for any facility whose operators choose to install a new aqueous ammonia storage tank and the offsite consequence analysis indicates that sensitive receptors will be located within the toxic endpoint distance. If, at the time when each facility-specific project is proposed in response to the proposed project, SCAQMD staff will conduct a CEQA evaluation of the facility-specific project and determine if the project is covered by the analysis in this Mitigated SEA. In addition, these mitigation measures will be included in a mitigation monitoring and reporting plan as part of issuing SCAQMD permits to construct for the facility-specific project. These mitigation measures will be enforceable by SCAQMD personnel.

- HZ-1 Require the use of aqueous ammonia at concentrations less than or equal to 2019 percent by volume for all facilities regulated by Rule 1135.
- HZ-2 Install safety devices, including but not limited to: continuous tank level monitors (e.g., high and low level), temperature and pressure monitors, leak monitoring and detection system, alarms, check valves, and emergency block valves.
- HZ-3 Install secondary containment such as dikes and/or berms to capture 110 percent of the storage tank volume in the event of a spill.
- HZ-4 Install a grating-covered trench around the perimeter of the delivery bay to passively contain potential spills from the tanker truck during the transfer of aqueous ammonia from the delivery truck to the storage tank.
- HZ-5 Equip the truck loading/unloading area with an underground gravity drain that flows to a large on-site retention basin to provide sufficient ammonia dilution to the extent that no hazards impact is possible in the event of an accidental release during transfer of aqueous ammonia.
- HZ-6 Install tertiary containment that is capable of evacuating 110 percent of the storage tank volume from the secondary containment area.

Implementing Mitigation Measures HZ-1 through HZ-6 would be expected to prevent a catastrophic release of ammonia from leaving the facility property and exposing offsite sensitive receptors, thus, reducing a potentially significant hazards impact to less than significant levels.

VIII. c) Less than Significant Impact. Appendix D contains a list of all of the facilities subject to PAR 1135 that are located within one-quarter mile of a school. However, there are only ~~three~~ six facilities that are expected to make physical modifications to comply with PAR 1135 and only Facility 1 and Facility 5 ~~is~~ are located within a one-quarter mile of a school. As explained in Response VIII. a), no change in the amount of aqueous ammonia to be stored at Facility 1, 4, 5, and 6 is expected.

PAR 1135, if implemented, would reduce human exposure to NOx by requiring electric generating facilities to meet proposed NOx emission limits. All of the facilities that may be subject to PAR 1135, including Facility 1, 4, 5, and 6, are expected to continue to take the appropriate and required

actions to ensure proper handling of existing quantities of hazardous or acutely hazardous materials, substances, or wastes that are currently generated. Further, any increased quantities of hazardous materials that may be collected at each facility would also be expected to be handled in the same or similar manner regardless of each facilities proximity to a school because PAR 1135 does not include new requirements or alter existing requirements for hazardous waste disposal. Therefore, PAR 1135 is not expected to emit new sources of hazardous emissions, or increase the handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

VIII. d) No Impact. Government Code Section 65962.5 refers to hazardous waste handling practices at facilities subject to the Resources Conservation and Recovery Act (RCRA). PAR 1135 would affect ~~34~~31 facilities that are identified on lists of California Department of Toxics Substances Control hazardous waste facilities per Government Code Section 65962.5. These facilities are identified in Appendix D. PAR 1135 would not alter existing or add new requirements to change how the hazardous materials are stored while awaiting to be transported off-site to a recycling facility or a hazardous waste landfill. Hazardous wastes from the existing facilities are required to be managed in accordance with applicable federal, state, and local rules and regulations and compliance with these regulations is expected to continue after PAR 1135 is implemented. Therefore, compliance with PAR 1135 would not create a new significant hazard waste impact to the public or environment.

VIII. e) No Impact. Federal Aviation Administration regulation, 14 CFR Part 77 – Safe, Efficient Use and Preservation of the Navigable Airspace, provide information regarding the types of projects that may affect navigable airspace. Projects may adversely affect navigable airspace if they involve construction or alteration of structures greater than 200 feet above ground level within a specified distance from the nearest runway or objects within 20,000 feet of an airport or seaplane base with at least one runway more than 3,200 feet in length and the object would exceed a slope of 100:1 horizontally (100 feet horizontally for each one foot vertically from the nearest point of the runway).

Construction activities from implementing the proposed project are expected to occur within the existing confines of Facilities 1, 2, ~~and 3, 4, 5, and 6~~ and ~~none~~only Facility 4~~of these facilities have~~has been identified in Appendix D as being located within two miles of an airport. Thus, any construction that may occur at Facilities 1, 2, ~~and 3, 4, 5, and 6~~ would not be expected to interfere with navigable airspace. Further, construction is expected to be conducted in accordance with all appropriate building, land use and fire codes and any new installations or structures are expected to be well below the height relative to the elevation of existing flight patterns so as to not interfere with plane flight paths consistent with 14 CFR Part 77. Such codes are designed to protect the public from hazards associated with normal operation. Therefore, the proposed project is not expected to result in a safety hazard for people residing or working in the area of Facilities 1, 2, ~~and 3, 4, 5, and 6~~ even if these facilities are located within the vicinity of an airport.

In addition, there are ~~four~~two other facilities identified in Appendix D as being located within two miles of an airport but none of these facilities are expected to require physical modifications. Thus, compliance with PAR 1135 at these ~~four~~two facilities would also not be expected to interfere with navigable airspace.

Therefore, implementation of PAR 1135 at any of the ~~34~~31 facilities will not create any new or alter any existing safety hazard for people residing or working near any facility identified in

Appendix D that is either located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public use airport or a private airstrip.

VIII. f) No Impact. Health and Safety Code Section 25506 et seq. specifically requires all businesses handling hazardous materials to submit a business emergency response plan to assist local administering agencies in the emergency release or threatened release of a hazardous material. Business emergency response plans generally require the following:

- Identification of individuals who are responsible for various actions, including reporting, assisting emergency response personnel and establishing an emergency response team;
- Procedures to notify the administering agency, the appropriate local emergency rescue personnel, and the California Office of Emergency Services;
- Procedures to mitigate a release or threatened release to minimize any potential harm or damage to persons, property or the environment;
- Procedures to notify the necessary persons who can respond to an emergency within the facility;
- Details of evacuation plans and procedures;
- Descriptions of the emergency equipment available in the facility;
- Identification of local emergency medical assistance; and,
- Training (initial and refresher) programs for employees in:
 1. The safe handling of hazardous materials used by the business;
 2. Methods of working with the local public emergency response agencies;
 3. The use of emergency response resources under control of the handler;
 4. Other procedures and resources that will increase public safety and prevent or mitigate a release of hazardous materials.

In general, every county or city and all facilities using a certain amount of hazardous materials are required to formulate detailed contingency plans to eliminate, or at least minimize, the possibility and effect of fires, explosion, or spills. In conjunction with the California Office of Emergency Services, local jurisdictions have enacted ordinances that set standards for area and business emergency response plans. These requirements include immediate notification, mitigation of an actual or threatened release of a hazardous material, and evacuation of the emergency area.

Emergency response plans are typically prepared in coordination with the local city or county emergency plans to ensure the safety of not only the public (surrounding local communities), but the facility employees as well. The proposed project would not impair implementation of, or physically interfere with any adopted emergency response plan or emergency evacuation plan. Further, the existing facilities already have an emergency response plan in place, as applicable. While the installation of modified or new electric generating units or associated air pollution control equipment may require an update of each affected facilities existing emergency response plan to reflect the new equipment or building modifications, the action of modifying an emergency response plan will not create any environmental impacts. Thus, PAR 1135 is not expected to

impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

VIII. g) No Impact. The facilities affected by PAR 1135 are currently located in existing industrial, commercial or mixed land use areas and the physical activities that may be taken to comply with PAR 1135 would occur inside existing property boundaries which are not located near wildlands; therefore, there is no existing risk from wildland fires and implementation of PAR 1135 would not create a new risk.

The proposed project would also not increase the existing risk of fire hazards in areas with flammable brush, grass, or trees since no substantial or native vegetation typically exists on or near the facilities (specifically because they could be a fire hazard). Thus, PAR 1135 is not expected to expose people or structures to wildfires. Therefore, no significant increase in wildland fire hazards is expected at the facilities that would be affected by the proposed project.

VIII. h) Less Than Significant Impact. The Uniform Fire Code and Uniform Building Code set standards intended to minimize risks from flammable or otherwise hazardous materials. Local jurisdictions are required to adopt the uniform codes or comparable regulations. Local fire agencies require permits for the use or storage of hazardous materials and permit modifications for proposed increases in their use. Permit conditions depend on the type and quantity of the hazardous materials at the facility. Permit conditions may include, but are not limited to, specifications for sprinkler systems, electrical systems, ventilation, and containment. The fire departments make annual business inspections to ensure compliance with permit conditions and other appropriate regulations. Further, businesses are required to report increases in the storage or use of flammable and otherwise hazardous materials to local fire departments. Local fire departments ensure that adequate permit conditions are in place to protect against the potential risk of upset. PAR 1135 would not change the existing requirements and permit conditions for the proper handling of flammable materials. Further, PAR 1135 does not contain any requirements that would prompt facility owners/operators to begin using new flammable materials.

Conclusion

Based upon these considerations, significant adverse hazards and hazardous materials impacts are not expected from implementing PAR 1135 due to implementation of mitigation measures HZ-1 through HZ-6, which would reduce any potential hazards and hazardous materials impacts to less than significant.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
IX. HYDROLOGY AND WATER QUALITY. Would the project:				
a) Violate any water quality standards, waste discharge requirements, exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board, or otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in substantial erosion or siltation on- or off-site or flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Place housing or other structures within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map, which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
f) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam, or inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Require or result in the construction of new water or wastewater treatment facilities or new storm water drainage facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
i) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project’s projected demand in addition to the provider’s existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Potential impacts on water resources will be considered significant if any of the following criteria apply:

Water Demand:

- The existing water supply does not have the capacity to meet the increased demands of the project, or the project would use more than 262,820 gallons per day of potable water.
- The project increases demand for total water by more than five million gallons per day.

Water Quality:

- The project will cause degradation or depletion of ground water resources substantially affecting current or future uses.
- The project will cause the degradation of surface water substantially affecting current or future uses.
- The project will result in a violation of National Pollutant Discharge Elimination System (NPDES) permit requirements.

- The capacities of existing or proposed wastewater treatment facilities and the sanitary sewer system are not sufficient to meet the needs of the project.
- The project results in substantial increases in the area of impervious surfaces, such that interference with groundwater recharge efforts occurs.
- The project results in alterations to the course or flow of floodwaters.

Discussion

As explained in the introductory remarks to the Environmental Checklist, the proposed amendments to PAR 1135 that pertain to applicability and the proposed emission limits for electric ~~power~~-generating units to reflect updated BARCT are the key elements that would be expected to require some facility operators to make physical modifications to their equipment in order to achieve compliance and these activities may create secondary adverse environmental impacts. For the purpose of the analysis in this Mitigated SEA, activities associated with installing new or modifying existing air pollution control systems, and repowering or replacing electric ~~power~~ generating units are the only activities that have been identified as having potential secondary adverse environmental impacts associated with reducing NO_x and other pollutants (e.g., ammonia, CO, VOC, and PM) from electric ~~power~~-generating units. Based on the BARCT assessment described in Chapter 1, only three electricity generating facilities have electric ~~power~~-generating units that would be expected to undergo physical modifications (e.g., installing new or modifying existing air pollution control systems, and repowering or replacing existing electric ~~power~~ generating units) in order to comply with PAR 1135 and three would elect to comply due to business decisions for a total of six facilities that are expected to undergo physical modifications.

Of the ~~three-six~~ affected electricity generating facilities, there are vast differences between the facilities due to the type of electric ~~power~~-generating units, geographic location, and site layout at each individual facility. Further, each of the ~~three-six~~ facilities is very different in how compliance with PAR 1135 may be achieved; Table 2-1 summarizes the potential modifications that may be expected to occur at the ~~three-six~~ affected electricity generating facilities. Therefore, at each of the ~~three-six~~ affected facilities, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, and delivery and haul trips during construction and operation, are expected to occur during the implementation of PAR 1135. Therefore, the responses to the following questions rely on the assumptions described in the introductory remarks and are specific to each facility and their individual secondary impacts.

IX. a), g) & i) No Impact. Of the physical modifications described in Table 2-1, none would be expected to require water either during construction or operation. Since no water will be needed to implement the projected modifications as part of complying with PAR 1135, no changes to each affected facility's wastewater existing setting will be expected. Since no wastewater will be generated from the implementation of PAR 1135, PAR 1135 would not trigger the need for an adequate wastewater capacity determination by any wastewater treatment provider that may be serving each affected site, if any. PAR 1135 would not require or result in the construction of new water or wastewater treatment facilities or new storm water drainage facilities, or expansion of existing facilities. PAR 1135 would not be expected to violate any water quality standards, waste discharge requirements, exceed wastewater treatment requirements of the applicable of the Publicly Owned Treatment Works (POTW) or Regional Water Quality Control Board, or otherwise substantially degrade water quality that the requirements are meant to protect. Therefore, no impacts to either wastewater or wastewater treatment are expected to occur as a result of implementing PAR 1135 at any affected sites.

IX. b) & h) No Impact. As previously explained in Response IX. a), water will not be needed to make the physical modifications that are summarized in Table 2-1. Since no water will be needed to implement the projected modifications as part of complying with PAR 1135, facilities would not be expected to utilize groundwater, substantially deplete groundwater supplies, or interfere substantially with groundwater recharge. Further, since water is not expected to be needed to implement PAR 1135, a determination by the water providers which currently serve the affected facilities that there is adequate existing capacity to provide water will not be necessary. For these reasons, PAR 1135 is not expected to have significant adverse water demand impacts.

IX. c) & d) No Impact. Of the physical modifications expected to take place at Facility 1, 2, ~~and 3, 4, 5, and 6~~ as a result of PAR 1135, none would require water during construction or operation and no new drainage facilities or alterations to existing drainage facilities will be needed beyond what currently exists at the existing facilities. Similarly, there are no streams or rivers running through the properties of the existing facilities, so any construction activities that may occur as a result of complying with PAR 1135 would not be expected to alter the course of a stream or river. PAR 1135 does not contain any requirements that would change existing drainage patterns or the procedures for how surface runoff water is handled. Thus, PAR 1135 is not expected to alter any existing drainage patterns, or cause an increase rate or amount of surface runoff water that would exceed the capacity of the facilities' existing or planned storm water drainage systems.

IX. e) & f) No Impact. None of the physical modifications that are summarized in Table 2-1 that may occur at Facilities 1, 2, ~~and 3, 4, 5, and 6~~ in order to comply with PAR 1135 would cause or require a new facility or new housing to be constructed. Therefore, implementation of PAR 1135 is not expected to result in placing houses or structures within 100-year flood hazard areas that could create new flood hazards or create significant adverse risk impacts from flooding as a result of failure of a levee or dam or inundation by seiches, tsunamis, or mudflows.

Conclusion

Based upon these considerations, significant adverse hydrology and water quality impacts are not expected from implementing PAR 1135. Since no significant hydrology and water quality impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
X. LAND USE AND PLANNING.				
Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Land use and planning impacts will be considered significant if the project conflicts with the land use and zoning designations established by local jurisdictions.

Discussion

As explained in the introductory remarks to the Environmental Checklist, the proposed amendments to PAR 1135 that pertain to applicability and the proposed emission limits for electric ~~power~~-generating units to reflect updated BARCT are the key elements that would be expected to require some facility operators to make physical modifications to their equipment in order to achieve compliance and these activities may create secondary adverse environmental impacts. For the purpose of the analysis in this Mitigated SEA, activities associated with installing new or modifying existing air pollution control systems, and repowering or replacing electric ~~power~~ generating units are the only activities that have been identified as having potential secondary adverse environmental impacts associated with reducing NOx and other pollutants (e.g., ammonia, CO, VOC, and PM) from electric ~~power~~-generating units. Based on the BARCT assessment described in Chapter 1, only three electricity generating facilities have electric ~~power~~-generating units that would be expected to undergo physical modifications (e.g., installing new or modifying existing air pollution control systems, and repowering or replacing existing electric ~~power~~ generating units) in order to comply with PAR 1135 and three would elect to comply due to business decisions for a total of six facilities that are expected to undergo physical modifications.

Of the ~~three-six~~ affected electricity generating facilities, there are vast differences between the facilities due to the type of electric ~~power~~-generating units, geographic location, and site layout at each individual facility. Further, each of the ~~three-six~~ facilities is very different in how compliance with PAR 1135 may be achieved; Table 2-1 summarizes the potential modifications that may be expected to occur at the three affected electricity generating facilities. Therefore, at each of the ~~three-six~~ affected facilities, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, and delivery and haul trips during construction and operation, are expected to occur during the implementation of PAR 1135.

Therefore, the responses to the following questions rely on the assumptions described in the introductory remarks and are specific to each facility and their individual secondary impacts.

X. a) No Impact. Of the physical modifications summarized in Table 2-1, all would occur within the existing physical boundaries of Facilities 1, 2, ~~and~~ 3, 4, 5, and 6. For this reason, implementation of PAR 1135 would not be expected to physically divide an established community. Therefore, no impacts are anticipated.

X. b) No Impact. Land use and other planning considerations are determined by local governments and no land use or planning requirements will be altered by PAR 1135. All construction and operation activities that are expected to occur as a result of complying with PAR 1135 will occur within the confines of the existing facilities and would not be expected to affect or conflict with any applicable land use plans, policies, or regulations. Further, no new development or alterations to existing land designations will occur as a result of the implementation of PAR 1135. Therefore, present or planned land uses in the region will not be affected as a result of implementing PAR 1135.

Conclusion

Based upon these considerations, significant adverse land use and planning impacts are not expected from implementing PAR 1135. Since no significant land use and planning impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XI. MINERAL RESOURCES. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Project-related impacts on mineral resources will be considered significant if any of the following conditions are met:

- The project would result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.
- The proposed project results in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

Discussion

As explained in the introductory remarks to the Environmental Checklist, the proposed amendments to PAR 1135 that pertain to applicability and the proposed emission limits for electric ~~power~~-generating units to reflect updated BARCT are the key elements that would be expected to require some facility operators to make physical modifications to their equipment in order to achieve compliance and these activities may create secondary adverse environmental impacts. For the purpose of the analysis in this Mitigated SEA, activities associated with installing new or modifying existing air pollution control systems, and repowering or replacing electric ~~power~~ generating units are the only activities that have been identified as having potential secondary adverse environmental impacts associated with reducing NOx and other pollutants (e.g., ammonia, CO, VOC, and PM) from electric ~~power~~-generating units. Based on the BARCT assessment described in Chapter 1, only three electricity generating facilities have electric ~~power~~-generating units that would be expected to undergo physical modifications (e.g., installing new or modifying existing air pollution control systems, and repowering or replacing existing electric ~~power~~ generating units) in order to comply with PAR 1135 and three would elect to comply due to business decisions for a total of six facilities that are expected to undergo physical modifications.

Of the ~~three-six~~ affected electricity generating facilities, there are vast differences between the facilities due to the type of electric ~~power~~-generating units, geographic location, and site layout at each individual facility. Further, each of the ~~three-six~~ facilities is very different in how compliance

with PAR 1135 may be achieved; Table 2-1 summarizes the potential modifications that may be expected to occur at the ~~three~~-six affected electricity generating facilities. Therefore, at each of the ~~three~~-six affected facilities, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, and delivery and haul trips during construction and operation, are expected to occur during the implementation of PAR 1135. Therefore, the responses to the following questions rely on the assumptions described in the introductory remarks and are specific to each facility and their individual secondary impacts.

XI. a) & b) No Impact. Of the physical modifications summarized in Table 2-1, none of the construction and operation activities necessary to implement PAR 1135 would require the use of a known mineral resource. Thus, there are no provisions in PAR 1135 that would result in the loss of availability of a known mineral resource of value to the region and the residents of the state such as aggregate, coal, clay, shale, et cetera, or of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

Conclusion

Based upon these considerations, significant adverse mineral resource impacts are not expected from implementing PAR 1135. Since no significant mineral resource impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XII. NOISE. Would the project result in:				
a) Exposure of persons to or generation of permanent noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public use airport or private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Significance Criteria

Noise impact will be considered significant if:

- Construction noise levels exceed the local noise ordinances or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three decibels (dBA) at the site boundary. Construction noise levels will be considered significant if they exceed federal Occupational Safety and Health Administration (OSHA) noise standards for workers.
- The proposed project operational noise levels exceed any of the local noise ordinances at the site boundary or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three dBA at the site boundary.

Discussion

As explained in the introductory remarks to the Environmental Checklist, the proposed amendments to PAR 1135 that pertain to applicability and the proposed emission limits for electric power-generating units to reflect updated BARCT are the key elements that would be expected to require some facility operators to make physical modifications to their equipment in order to achieve compliance and these activities may create secondary adverse environmental impacts. For the purpose of the analysis in this Mitigated SEA, activities associated with installing new or modifying existing air pollution control systems, and repowering or replacing electric power generating units are the only activities that have been identified as having potential secondary adverse environmental impacts associated with reducing NOx and other pollutants (e.g., ammonia,

CO, VOC, and PM) from electric ~~power~~-generating units. Based on the BARCT assessment described in Chapter 1, only three electricity generating facilities have electric ~~power~~-generating units that would be expected to undergo physical modifications (e.g., installing new or modifying existing air pollution control systems, and repowering or replacing existing electric ~~power~~ generating units) in order to comply with PAR 1135 and three would elect to comply due to business decisions for a total of six facilities that are expected to undergo physical modifications.

Of the ~~three-six~~ affected electricity generating facilities, there are vast differences between the facilities due to the type of electric ~~power~~-generating units, geographic location, and site layout at each individual facility. Further, each of the ~~three-six~~ facilities is very different in how compliance with PAR 1135 may be achieved; Table 2-1 summarizes the potential modifications that may be expected to occur at the three affected electricity generating facilities. Therefore, at each of the ~~three-six~~ affected facilities, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, and delivery and haul trips during construction and operation, are expected to occur during the implementation of PAR 1135. Therefore, the responses to the following questions rely on the assumptions described in the introductory remarks and are specific to each facility and their individual secondary impacts.

XII. a), b), & c) Less than Significant Impact. The facilities affected by PAR 1135 are currently located in urbanized industrial or commercial land use areas. The existing noise environment at each of the facilities is typically dominated by noise from existing equipment on-site, vehicular traffic around the facilities, and trucks entering and exiting facility premises. Large, potentially noise-intensive construction equipment would be needed temporarily during construction to repower, retrofit, or replace existing electric generating units and associated air pollution control equipment as part of implementing PAR 1135. Operation of the construction equipment would be expected to comply with all existing noise control laws and ordinances. Since the facilities are located in industrial or commercial land use areas, which have a higher background noise level when compared to other areas, the noise generated during construction will likely be indistinguishable from the background noise levels at the property line.

Once the construction is complete, the noise from operation activities will be similar to the existing noise setting currently generated on-site because replacement equipment will have a similar noise profile as the equipment being replaced. Further, SCR technology is not inherently noisy equipment, so it is unlikely that the operation of SCR units will substantially contribute or worsen a facility's existing noise profile. Also, due to the attenuation rate of noise based on distance from the source, it is unlikely that noise levels exceeding local noise ordinances from the operation of repowered or retrofitted electric ~~power~~-generating units and any new air pollution control equipment such as SCRs would occur beyond a facility's boundaries. Furthermore, OSHA and CAL-OSHA have established noise standards to protect worker health. Furthermore, compliance with local noise ordinances limiting the hours of construction will reduce the temporary noise impacts from construction to sensitive receptors. These potential noise increases are expected to be within the allowable noise levels established by the local noise ordinances for industrial areas, and thus are expected to be less than significant.

XII. d) Less than Significant Impact. As explained previously in Section VIII e), only ~~four-one~~ of the affected facilities ~~are-is~~ located within two miles of an airport. However, the provisions in PAR 1135 are not expected to cause changes to electric ~~power~~-generating units at the facilities located within two miles of an airport and if construction activities were to occur it is expected construction activities would be in accordance with all appropriate building, land use and fire codes

and any new installations or structures are expected to be well below the height relative to the elevation of existing flight patterns so as to not interfere with plane flight paths consistent with Federal Aviation Regulation, Part 77. In addition, compliance with PAR 1135 is not expected to expose people residing or working in the vicinity of any affected facility to the same degree of excessive noise levels associated with airplanes because all noise producing equipment at the affected facilities must comply with local noise ordinances and applicable OSHA or CAL-OSHA workplace noise reduction requirements. Therefore, the impacts are expected to be less than significant.

Conclusion

Based upon these considerations, significant adverse noise impacts are not expected from the implementing PAR 1135. Since no significant noise impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XIII. POPULATION AND HOUSING.				
Would the project:				
a) Induce substantial growth in an area either directly (for example, by proposing new homes and businesses) or indirectly (e.g. through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of people or existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Impacts of the proposed project on population and housing will be considered significant if the following criteria are exceeded:

- The demand for temporary or permanent housing exceeds the existing supply.
- The proposed project produces additional population, housing or employment inconsistent with adopted plans either in terms of overall amount or location.

Discussion

As explained in the introductory remarks to the Environmental Checklist, the proposed amendments to PAR 1135 that pertain to applicability and the proposed emission limits for electric ~~power~~-generating units to reflect updated BARCT are the key elements that would be expected to require some facility operators to make physical modifications to their equipment in order to achieve compliance and these activities may create secondary adverse environmental impacts. For the purpose of the analysis in this Mitigated SEA, activities associated with installing new or modifying existing air pollution control systems, and repowering or replacing electric ~~power~~ generating units are the only activities that have been identified as having potential secondary adverse environmental impacts associated with reducing NOx and other pollutants (e.g., ammonia, CO, VOC, and PM) from electric ~~power~~-generating units. Based on the BARCT assessment described in Chapter 1, only three electricity generating facilities have electric ~~power~~-generating units that would be expected to undergo physical modifications (e.g., installing new or modifying existing air pollution control systems, and repowering or replacing existing electric ~~power~~ generating units) in order to comply with PAR 1135 and three would elect to comply due to business decisions for a total of six facilities that are expected to undergo physical modifications.

Of the ~~three-six~~ affected electricity generating facilities, there are vast differences between the facilities due to the type of electric ~~power~~-generating units, geographic location, and site layout at each individual facility. Further, each of the ~~three-six~~ facilities is very different in how compliance with PAR 1135 may be achieved; Table 2-1 summarizes the potential modifications that may be expected to occur at the ~~three-six~~ affected electricity generating facilities. Therefore, at each of the ~~three-six~~ affected facilities, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, and delivery and haul trips during

construction and operation, are expected to occur during the implementation of PAR 1135. Therefore, the responses to the following questions rely on the assumptions described in the introductory remarks and are specific to each facility and their individual secondary impacts.

XIII. a) No Impact. The construction activities associated with PAR 1135 at the affected facilities are relatively minimal such that they would not be expected to require the relocation of individuals, require new housing or commercial facilities, or change the distribution of the population. On a peak day, the analysis assumes that up to three workers may be needed to perform construction activities at Facility 1, 4, 5, and 6, up to 18 workers may be needed to perform construction activities at Facility 2, and up to 297 workers may be needed to perform construction activities at Facility 3 to comply with PAR 1135, and these workers can be supplied from the existing labor pool in the local Southern California area. Further, the physical modifications expected to take place at electricity generating facilities would not be expected to require new employees to operate and maintain the equipment because each of the affected facilities already have existing electric ~~power~~-generating units in place with personnel trained to maintain the equipment. In the event that new employees are hired, the number of new employees hired at any one facility would likely be relatively small. The human population within the SCAQMD is anticipated to grow regardless of implementing PAR 1135. As a result, PAR 1135 is not anticipated to generate any significant adverse effects, either direct or indirect, on population growth in the SCAQMD or population distribution.

XIII. b) No Impact. PAR 1135 proposed emission limits for electric ~~power~~-generating units to reflect updated BARCT at existing electricity generating facilities as previously explained in Section III – Air Quality, SCAQMD staff is not aware of any new electricity generating facilities planned to be constructed in the immediate future and is unable to predict or forecast, when, if at all, any would be built in the long-term. Thus, PAR 1135 is not expected to result in the creation of any industry that would affect population growth, directly or indirectly or cause the displacement of substantial numbers of people that would induce the construction of replacement housing elsewhere in the SCAQMD.

Conclusion

Based upon these considerations, significant adverse population and housing impacts are not expected from implementing PAR 1135. Since no significant population and housing impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XIV. PUBLIC SERVICES. Would the proposal result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:				
a) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Impacts on public services will be considered significant if the project results in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response time, or other performance objectives.

Discussion

As explained in the introductory remarks to the Environmental Checklist, the proposed amendments to PAR 1135 that pertain to applicability and the proposed emission limits for electric ~~power~~-generating units to reflect updated BARCT are the key elements that would be expected to require some facility operators to make physical modifications to their equipment in order to achieve compliance and these activities may create secondary adverse environmental impacts. For the purpose of the analysis in this Mitigated SEA, activities associated with installing new or modifying existing air pollution control systems, and repowering or replacing electric ~~power~~ generating units are the only activities that have been identified as having potential secondary adverse environmental impacts associated with reducing NOx and other pollutants (e.g., ammonia, CO, VOC, and PM) from electric ~~power~~-generating units. Based on the BARCT assessment described in Chapter 1, only three electricity generating facilities have electric ~~power~~-generating units that would be expected to undergo physical modifications (e.g., installing new or modifying existing air pollution control systems, and repowering or replacing existing electric ~~power~~ generating units) in order to comply with PAR 1135 and three would elect to comply due to business decisions for a total of six facilities that are expected to undergo physical modifications.

Of the ~~three-six~~ affected electricity generating facilities, there are vast differences between the facilities due to the type of electric ~~power~~-generating units, geographic location, and site layout at each individual facility. Further, each of the ~~three-six~~ facilities is very different in how compliance with PAR 1135 may be achieved; Table 2-1 summarizes the potential modifications that may be expected to occur at the ~~three-six~~ affected electricity generating facilities. Therefore, at each of the ~~three-six~~ affected facilities, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, and delivery and haul trips during construction and operation, are expected to occur during the implementation of PAR 1135. Therefore, the responses to the following questions rely on the assumptions described in the introductory remarks and are specific to each facility and their individual secondary impacts.

XIV. a) Less than Significant Impact. Implementation of PAR 1135 is expected to cause electricity generating facility owners or operators to make physical modifications as summarized in Table 2-1 in order to comply with updated BARCT. In the process of conducting physical modifications, Facilities ~~1, and 2,~~ 4, 5, and 6 are expected to continue current operations, while Facility 3 would be expected to halt operations for three of its boilers and ancillary equipment in order to demolish and construct three new turbines. In order to construct the retrofitted, repowered, or replaced electric ~~power~~-generating units the owner or operators at each facility would be required to obtain a building permit from the local city or county with jurisdiction over the construction. As each step in the construction process progresses, a building inspector will periodically check in with each facility to verify that construction is proceeding according the specifications in the building permit. Because applications for building permits typically undergo a thorough “plan check” process before a permit to build is issued, new safety hazards are not expected to occur during construction phase of the affected electric ~~power~~-generating units.

Operation of Facilities ~~1, and 3,~~ 4, 5, and 6 would require periodic delivery of aqueous ammonia to each facility. As discussed in detail in Section VIII, the probability and consequence of an aqueous ammonia release is less than significant with mitigation applied. Therefore, ammonia delivery, storage, and use at Facilities ~~1 and 3,~~ 4, 5, and 6 is not expected to significantly impact the hazardous material (“Haz Mat”) response capabilities of the Los Angeles County Fire Authority. Operation of Facility 2 would require periodic delivery of urea, however no increase in the frequency or amount of urea is already delivered so it is expected to result in no change in order to comply with PAR 1135.

For these reasons, implementation of PAR 1135 is not expected to substantially alter or increase the need or demand for additional public services (e.g., fire and police departments and related emergency services, etc.) above current levels, so no significant impact to these existing services is anticipated.

XIV. b), c), d) No Impact. As noted in Section XIII - Population and Housing, PAR 1135 is not expected to induce population growth in any way because the local labor pool (e.g., workforce) is expected to be sufficient to accommodate three workers at Facility 1, 4, 5, and 6, 18 workers at Facility 2, and 297 workers at Facility 3 to perform any construction activities that may be necessary at affected facilities and operation of new or modified electric ~~power~~-generating units is not expected to require additional employees. In the event that new employees are hired, the number of new employees at any one facility would likely be small. Therefore, with no significant increase in local population, no impacts would be expected to local schools.

XIV. d) No Impact. PAR 1135 is expected to result in the installation and use of new or modified electric ~~power~~-generating units as part of compliance with proposed emission limits to reflect updated BARCT. Besides obtaining building permits from the local agency and SCAQMD permits for retrofitting, repowering, or replacing electric ~~power~~-generating units, there will be no need for other types of government services because the affected facilities will continue their existing operations once physical modifications are completed at each affected facility. Because PAR 1135 would not result in the need for new or physically altered government facilities in order to maintain acceptable service ratios, response times, or other performance objectives. As explained earlier, there will be no substantive increase in population as a result of implementing PAR 1135, and, therefore, no need for physically altered government facilities.

Conclusion

Based upon these considerations, significant adverse public services impacts are not expected from implementing PAR 1135. Since no significant public services impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XV. RECREATION.				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment or recreational services?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Impacts to recreation will be considered significant if:

- The project results in an increased demand for neighborhood or regional parks or other recreational facilities.
- The project adversely affects existing recreational opportunities.

Discussion

As explained in the introductory remarks to the Environmental Checklist, the proposed amendments to PAR 1135 that pertain to applicability and the proposed emission limits for electric ~~power~~-generating units to reflect updated BARCT are the key elements that would be expected to require some facility operators to make physical modifications to their equipment in order to achieve compliance and these activities may create secondary adverse environmental impacts. For the purpose of the analysis in this Mitigated SEA, activities associated with installing new or modifying existing air pollution control systems, and repowering or replacing electric ~~power~~ generating units are the only activities that have been identified as having potential secondary adverse environmental impacts associated with reducing NOx and other pollutants (e.g., ammonia, CO, VOC, and PM) from electric ~~power~~-generating units. Based on the BARCT assessment described in Chapter 1, only three electricity generating facilities have electric ~~power~~-generating units that would be expected to undergo physical modifications (e.g., installing new or modifying existing air pollution control systems, and repowering or replacing existing electric ~~power~~ generating units) in order to comply with PAR 1135 and three would elect to comply due to business decisions for a total of six facilities that are expected to undergo physical modifications.

Of the ~~three-six~~ affected electricity generating facilities, there are vast differences between the facilities due to the type of electric ~~power~~-generating units, geographic location, and site layout at each individual facility. Further, each of the ~~three-six~~ facilities is very different in how compliance with PAR 1135 may be achieved; Table 2-1 summarizes the potential modifications that may be expected to occur at the ~~three-six~~ affected electricity generating facilities. Therefore, at each of the ~~three-six~~ affected facilities, secondary impacts associated with the use of on- and off-road

construction equipment, construction worker vehicle trips, and delivery and haul trips during construction and operation, are expected to occur during the implementation of PAR 1135. Therefore, the responses to the following questions rely on the assumptions described in the introductory remarks and are specific to each facility and their individual secondary impacts.

XV. a) & b) No Impact. As explained previously in Section XIII - Population and Housing, the owners or operators of the affected facilities who need to perform any construction activities to comply with PAR 1135 can draw from the existing labor pool in the local Southern California area. Further, the retrofitting, repowering, or replacement of electric ~~power~~-generating units would not be expected to require new employees to operate and maintain the equipment because the affected facilities already have existing electric ~~power~~-generating units in place with personnel trained to maintain the units. In the event that new employees are hired, the number of new employees hired at any one facility would likely be relatively small, perhaps no more than one or two per facility. The human population within the District is anticipated to grow regardless of implementing PAR 1135 (see the population growth projects in the 2016 AQMP). As a result, PAR 1135 is not anticipated to generate any significant adverse effects, either direct or indirect, on population growth in the District or population distribution. Further, there are no provisions in PAR 1135 that would affect or increase the demand for or use of existing neighborhood and regional parks or other recreational facilities. Further, PAR 1135 would not require the construction of new or the expansion of existing recreational facilities that might, in turn, cause adverse physical effects on the environment because PAR 1135 will not directly or indirectly substantively increase or redistribute population.

Conclusion

Based upon these considerations, significant adverse recreation impacts are not expected from implementing PAR 1135. Since no significant recreation impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XVI. SOLID AND HAZARDOUS WASTE. Would the project:				
a) Be served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Comply with federal, state, and local statutes and regulations related to solid and hazardous waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

The proposed project impacts on solid and hazardous waste will be considered significant if the following occurs:

- The generation and disposal of hazardous and non-hazardous waste exceeds the capacity of designated landfills.

Discussion

As explained in the introductory remarks to the Environmental Checklist, the proposed amendments to PAR 1135 that pertain to applicability and the proposed emission limits for electric ~~power~~-generating units to reflect updated BARCT are the key elements that would be expected to require some facility operators to make physical modifications to their equipment in order to achieve compliance and these activities may create secondary adverse environmental impacts. For the purpose of the analysis in this Mitigated SEA, activities associated with installing new or modifying existing air pollution control systems, and repowering or replacing electric ~~power~~ generating units are the only activities that have been identified as having potential secondary adverse environmental impacts associated with reducing NOx and other pollutants (e.g., ammonia, CO, VOC, and PM) from electric ~~power~~-generating units. Based on the BARCT assessment described in Chapter 1, only three electricity generating facilities have electric ~~power~~-generating units that would be expected to undergo physical modifications (e.g., installing new or modifying existing air pollution control systems, and repowering or replacing existing electric ~~power~~ generating units) in order to comply with PAR 1135 and three would elect to comply due to business decisions for a total of six facilities that are expected to undergo physical modifications.

Of the ~~three-six~~ affected electricity generating facilities, there are vast differences between the facilities due to the type of electric ~~power~~-generating units, geographic location, and site layout at each individual facility. Further, each of the ~~three-six~~ facilities is very different in how compliance with PAR 1135 may be achieved; Table 2-1 summarizes the potential modifications that may be expected to occur at the ~~three-six~~ affected electricity generating facilities. Therefore, at each of the ~~three-six~~ affected facilities, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, and delivery and haul trips during construction and operation, are expected to occur during the implementation of PAR 1135. Therefore, the responses to the following questions rely on the assumptions described in the introductory remarks and are specific to each facility and their individual secondary impacts.

XVI. a) Less than Significant Impact. Landfills are permitted by the local enforcement agencies with concurrence from the California Department of Resources Recycling and Recovery (CalRecycle). Local agencies establish the maximum amount of solid waste which can be received by a landfill each day and for the operational life of a landfill. This analysis of solid waste impacts assumes that safety and disposal procedures required by various agencies in California will provide reasonable precautions against the improper disposal of hazardous wastes in a municipal waste landfill. Because of state and federal requirements, some facilities are attempting to reduce or minimize the generation of solid and hazardous wastes by incorporating source reduction technologies to reduce the volume or toxicity of wastes generated, including improving operating procedures, using less hazardous or nonhazardous substitute materials, and upgrading or replacing inefficient processes.

PAR 1135 would require electricity generating facilities to comply with proposed emission limits for electric ~~power~~-generating units to reflect updated BARCT and thus the affected facilities would be expected to make physical modifications to their equipment in order to achieve compliance.

Facility 1, 4, 5, and 6 assumes that ~~four each affected~~ SCR catalyst modules would be replaced in ~~all four each~~ of the affected existing SCRs. Minimal modifications to the existing catalyst housing are expected to install the replaced catalyst modules. The spent catalyst modules from ~~the four each affected~~ SCR units would need to be disposed of or recycled for their precious metal content. However, because Facility 1, 4, 5, and 6 currently replaces the spent SCR catalyst modules approximately every five years as part of regular maintenance, this analysis assumes that the same maintenance schedule will continue with the upgraded SCR catalyst modules. Thus, disposal of the ~~four each affected~~ spent catalysts would not generate significant waste.

Facility 2 assumes that five diesel combustion engines and SCR units would be replaced with five new diesel combustion engines and SCR units. The replaced diesel engines and SCR units would need to be disposed of. However, because each engine replacement and SCR unit is expected to occur at a frequency of once per year, and since engine replacement requires minimal construction and demolition activities, the replacement of each engine and SCR unit would not generate significant waste. Further, no new waste would be generated during operation of Facility 2 as a result of the replaced engines since there is no change to the amount of urea delivered and stored and the current maintenance schedule to replace spent SCR catalysts is expected to remain the same. Thus, the amount of waste disposal during operations would not change.

Facility 3 assumes that three boilers would need to be removed and replaced with three turbines. Demolition of each boiler and ancillary structures and equipment is expected to occur over a period of 150 days. Facility 3 is also expected to install one new aqueous ammonia tank and three new SCRs which will require spent catalyst to be replaced approximately every five years. Throughout demolition and operation activities, Facility 3 is expected to comply with all applicable local, state, and federal waste disposal regulations. Thus, any waste generated as a result of PAR 1135 would be disposed of as follows: non-hazardous materials would be disposed of at a Class II or III landfill and recycling facility, and hazardous materials including any asbestos containing material would be disposed of at a Class I landfill.

The catalyst in SCR beds generally uses various ceramic materials comprised of precious metals to aid in the capture and conversion of NO_x into N₂ and water in an exhaust stream. SCRs require periodic regeneration or replacement of the catalyst bed. Regeneration of catalyst is preferred, due to the high cost to purchase new catalyst; however, if the catalyst cannot be regenerated, precious

metals contained in the catalyst can be recovered. These metals could then be recycled and the remaining material would most likely need to be disposed of at a landfill.

If the catalyst is not hazardous, jurisdiction for its disposal then shifts to local agencies such as the Regional Water Quality Control Board (RWQCB) or the county environmental agencies. The RWQCB has indicated that if a spent catalyst is not considered a hazardous waste, it would probably be considered a Designated Waste. A Designated Waste is characterized as a non-hazardous waste consisting of, or containing pollutants that, under ambient environmental conditions, could be released at concentrations in excess of applicable water objectives, or which could cause degradation of the waters of the state. The type of landfill that the material is disposed at will depend upon its final waste designation. As explained previously, the use of SCRs to comply with PAR 1135 is expected to be limited to Facilities 1, 2, ~~and 3~~, 4, 5, and 6, so its use is not expected to be wide-spread and the amount needed for disposal or recycling is very small relative to the disposal capacities in the region.

Because the waste disposal needs from implementing PAR 1135 are expected to be served by existing landfills with sufficient permitted capacity to accommodate each affected facility's solid waste disposal needs, potential solid and hazardous waste impacts from implementing PAR 1135 would not be significant.

XVI. b) No Impact. It is assumed that facility operators at the facilities currently comply with all applicable local, state, or federal waste disposal regulations and PAR 1135 does not contain any provisions that would alter current practices. Thus, implementation of PAR 1135 is not expected to interfere with any affected facility's ability to comply with applicable local, state, or federal waste disposal regulations in a manner that would cause a significant adverse solid and hazardous waste impact.

Conclusion

Based upon these considerations, significant adverse solid and hazardous waste impacts are not expected from implementing PAR 1135. Since no significant solid and hazardous waste impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XVII. TRANSPORTATION AND TRAFFIC.				
Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Impacts on transportation and traffic will be considered significant if any of the following criteria apply:

- Peak period levels on major arterials are disrupted to a point where level of service (LOS) is reduced to D, E or F for more than one month.
- An intersection's volume to capacity ratio increase by 0.02 (two percent) or more when the LOS is already D, E or F.
- A major roadway is closed to all through traffic, and no alternate route is available.
- The project conflicts with applicable policies, plans or programs establishing measures of effectiveness, thereby decreasing the performance or safety of any mode of transportation.
- There is an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.
- The demand for parking facilities is substantially increased.
- Water borne, rail car or air traffic is substantially altered.
- Traffic hazards to motor vehicles, bicyclists or pedestrians are substantially increased.
- The need for more than 350 employees.
- An increase in heavy-duty transport truck traffic to and/or from the facility by more than 350 truck round trips per day.
- Increase customer traffic by more than 700 visits per day.

Discussion

As explained in the introductory remarks to the Environmental Checklist, the proposed amendments to PAR 1135 that pertain to applicability and the proposed emission limits for electric ~~power~~-generating units to reflect updated BARCT are the key elements that would be expected to require some facility operators to make physical modifications to their equipment in order to achieve compliance and these activities may create secondary adverse environmental impacts. For the purpose of the analysis in this Mitigated SEA, activities associated with installing new or modifying existing air pollution control systems, and repowering or replacing electric ~~power~~ generating units are the only activities that have been identified as having potential secondary adverse environmental impacts associated with reducing NOx and other pollutants (e.g., ammonia, CO, VOC, and PM) from electric ~~power~~-generating units. Based on the BARCT assessment described in Chapter 1, only three electricity generating facilities have electric ~~power~~-generating units that would be expected to undergo physical modifications (e.g., installing new or modifying existing air pollution control systems, and repowering or replacing existing electric ~~power~~ generating units) in order to comply with PAR 1135 and three would elect to comply due to business decisions for a total of six facilities that are expected to undergo physical modifications.

Of the ~~three-six~~ affected electricity generating facilities, there are vast differences between the facilities due to the type of electric ~~power~~-generating units, geographic location, and site layout at each individual facility. Further, each of the ~~three-six~~ facilities is very different in how compliance with PAR 1135 may be achieved; Table 2-1 summarizes the potential modifications that may be expected to occur at the ~~three-six~~ affected electricity generating facilities. Therefore, at each of the ~~three-six~~ affected facilities, secondary impacts associated with the use of on- and off-road

construction equipment, construction worker vehicle trips, and delivery and haul trips during construction and operation, are expected to occur during the implementation of PAR 1135. Therefore, the responses to the following questions rely on the assumptions described in the introductory remarks and are specific to each facility and their individual secondary impacts.

XVII. a) & b) Less Than Significant Impact

Construction

As previously discussed in Section III - Air Quality and Greenhouse Gas Emissions, compliance with PAR 1135 is expected to require construction activities associated with physical modifications to electric ~~power~~-generating units – replacing, retrofitting, or repowering. Facility 1, 4, 5, and 6 ~~is~~are expected to have approximately three construction worker round trips, one vendor truck round trip, and one haul truck round trip for a total of five construction round trips, which are assumed to be needed on a peak construction day for one SCR catalyst module replacement. Facility 2 is expected to have approximately 28 construction worker round trips, five vendor truck round trips, and 10 haul truck round trips for a total of 43 construction round trips, which are assumed to be needed on a peak construction day for one engine and SCR unit replacement. The estimate of construction round trips for Facility 2 is conservative, as only one engine and SCR unit is expected to be replaced per year and each construction phase is expected to take place on different days. Facility 3 is expected to have approximately 297 construction worker round trips, 14 vendor truck round trips, and 11,120 haul truck round trips for a total of 11,431 round trips, which are assumed for the complete duration of construction activities. Since all of the construction activities at Facility 3 are not expected to occur on the same day, the most conservative trip amount from each phase is used to determine an estimated total amount of construction round trips on a peak day. A Facility 3 peak construction day assumes 200 construction worker trips (round trips), eight vendor truck trips (round trips), and 28 haul truck trips³³ (round trips) for a total of 236 construction round trips needed on a peak construction day.

Thus, construction at each Facility on a peak day is not expected to affect on-site traffic or parking for each affected facility. Further, since the additional five construction round trips at Facility 1, 4, 5, and 6, 43 construction round trips at Facility 2, and 236 construction round trips at Facility 3 that may occur on a peak day are below the significant threshold of 350 round trips, regional traffic and transportation impacts during construction are not expected to cause a significance adverse impact. The estimated vehicle trips from all activities on the peak day during construction are summarized in Table 2-16.

Operation

Of the ~~three-six~~ affected facilities, only Facilities 1, ~~and~~ 3, 4, 5, and 6 are expected to have new trips generated during operations. Facility 2 is assumed to not create any new trips as the proposed modifications would not change the amount of urea that is currently delivered and the current SCR catalyst replacement schedule is expected to remain the same. Facility 1 assumes an increase of six aqueous ammonia deliveries per year, Facility 1 assumes an increase of six aqueous ammonia deliveries per year, Facility 4 assumes an increase of two aqueous ammonia deliveries per year, Facility 5 assumes an increase of 11 aqueous ammonia deliveries per year, and Facility 6 assumes an increase of two aqueous ammonia deliveries per year will be needed to supply the increased ammonia demand and that the existing maintenance schedule for replacing spent SCR catalysts

³³ Haul trips on a peak construction day were estimated by dividing the number of total haul trips in the demolition phase by the number of days of demolition.

would remain the same. Facility 3 assumes an increase of 24 aqueous ammonia deliveries per year will be needed to supply the anticipated ammonia demand for a new ammonia tank. Facility 3 would also require spent catalysts to be replaced every five years and assumes an increase of 6 haul trips per year will be needed.

All of the trips needed to haul new SCR catalysts and waste and deliver ammonia will contribute to operational traffic and transportation impacts.

For a “worst case” analysis, SCAQMD staff assumed that ~~three~~ six facilities on a peak day would generate a maximum of one additional truck trip (round trip) to account for an ammonia or catalyst delivery needed to replace a spent SCR catalyst or to provide aqueous ammonia. On a given day no truck trip overlap is anticipated, the one additional truck trip that may occur is not expected to significantly adversely affect circulation patterns on local roadways or the level of service at intersections near each of the affected facilities. In fact, this low volume of additional daily truck traffic is negligible over the entire SCAQMD. Further, as previously explained in Section XII – Population and Housing, the physical modifications that would result as part of compliance with PAR 1135 would not be expected to require new, additional permanent employees to operate and maintain the equipment because many of the affected facilities already have existing electric power generating units in place with personnel trained to maintain the equipment. In the event that new employees are hired, it is expected that the number of new employees hired at any one facility would be relatively small, perhaps no more than one or two per facility. Thus, even for the trips that would be associated with employing a small amount of new workers at each affected facility, implementation of PAR 1135 is not expected to cause a significant increase in the number of worker trips during operation at any of the affected facilities. The estimated vehicles from all activities is summarized in Table 2-16.

Table 2-16
Estimation of Vehicle Trips (Round Trips)

Phase	Worker Vehicles	Vendor Trucks	Haul Trucks
Facility 1 - Construction ^a	3 per day	1 per day	1 per day
Facility 2 - Construction ^a	28 per day	5 per day	10 per day
Facility 3 - Construction ^a	200 per day	8 per day	28 per day
Facility 4 - Construction ^a	<u>3 per day</u>	<u>1 per day</u>	<u>1 per day</u>
Facility 5 - Construction ^a	<u>3 per day</u>	<u>1 per day</u>	<u>1 per day</u>
Facility 6 - Construction ^a	<u>3 per day</u>	<u>1 per day</u>	<u>1 per day</u>
Operation (Facility 1, and 3, 4, 5, and 6)	Up to 1 additional truck trip (T6 instate construction heavy) for delivery of aqueous ammonia or for replacement of an SCR catalyst from all the affected facilities per day ^b		

^a The worst case analysis for construction is based on a maximum of ~~231-240~~ worker vehicles plus ~~44-17~~ vendor trucks and ~~39-42~~ haul trucks per day for all affected facilities during a peak day to account for overlapping construction.

^b The worst case analysis during operation is based on a maximum of 1 additional delivery truck to deliver ammonia or SCR catalyst replacement at all of the affected facilities.

XVII. c) No Impact. As explained previously in Section VIII – Hazards and Hazardous Materials, ~~four~~ three of the ~~34~~ 31 affected facilities are located within two miles of an airport. However, the physical modifications to retrofit, repower, or replace electric ~~power~~-generating units are expected to be conducted in accordance with all appropriate building, land use and fire codes and any new installations or structures are expected to be well below the height relative to the elevation of existing flight patterns so as to not interfere with plane flight paths consistent with Federal Aviation Regulation, Title 14 Part 77. Thus, compliance with PAR 1135 would not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risk.

XVII. d) & e) No Impact. PAR 1135 does not involve or require the construction of new roadways because the focus of PAR 1135 is reducing NOx emissions and other pollutants from electric power generating unit at electricity generating facilities. Thus, there will no change to current public roadway designs that could increase traffic hazards. Further, PAR 1135 is not expected to substantially increase traffic hazards or create incompatible uses at or adjacent to the facilities. Emergency access at each of the affected facilities is not expected to be impacted because PAR 1135 does not contain any requirements specific to emergency access points and each affected facility is expected to continue to maintain their existing emergency access. PAR 1135 does not include provisions which would conflict with emergency access. Since PAR 1135 is expected to involve construction activities that would create new, delivery/haul truck trips that would be expected to cease after construction is completed, the proposed project is not expected to alter the existing long-term circulation patterns within the areas of each affected facility during construction. Similarly, during operation, the projected increase of additional truck trips that may be needed at each affected facility would be at less than significant levels individually and cumulatively such that implementation of the proposed project is not expected to require a modification to circulation. Thus, no long-term impacts on the traffic circulation system are expected to occur during construction or operation.

XVII. f) No Impact. PAR 1135 does not contain any requirements that would affect or alter adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. Further, the facilities would still be expected to comply with, and not interfere with adopted policies, plans, or programs supporting alternative transportation (e.g., bicycles or buses) that exist in their respective cities. Since all of the requirements and compliance activities associated with implementing PAR 1135 would be expected to occur on-site, PAR 1135 would have no impact on each facility's ability to comply with any applicable alternative transportation plans or policies.

Conclusion

Based upon these considerations, significant adverse transportation and traffic impacts are not expected from implementing PAR 1135. Since no significant transportation and traffic impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE.				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion

XVIII. a) No Impact. As explained in Section IV - Biological Resources, PAR 1135 is not expected to significantly adversely affect plant or animal species or the habitat on which they rely because any construction and operational activities associated with the facilities are expected to occur entirely within the boundaries of existing developed facilities in areas that have been greatly disturbed and that currently do not support any species of concern or the habitat on which they rely. For these reasons, PAR 1135 is not expected to reduce or eliminate any plant or animal species or destroy prehistoric records of the past.

XVIII. b) Less Than Significant Impact. Based on the foregoing analyses, PAR 1135 would not result in significant adverse project-specific environmental impacts due to mitigation measures set forth in this Mitigated SEA. Potential adverse impacts from implementing PAR 1135 would be rendered “less than cumulatively considerable” as defined by CEQA Guidelines Section 15064(h)(2) for any environmental topic because mitigation measures set forth within this

Mitigated SEA render any potentially significant impacts to be less than significant. Per CEQA Guidelines Section 15064(h)(4), the mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable. SCAQMD cumulative significant thresholds are the same as project-specific significance thresholds.

This approach was upheld by the court in *Citizens for Responsible Equitable Environmental Development v. City of Chula Vista* (2011) 197 Cal. App. 4th 327, 334. The Court determined that where it can be found that a project did not exceed the South Coast Air Quality Management District's established air quality significance thresholds, the City of Chula Vista properly concluded that the project would not cause a significant environmental effect, nor result in a cumulatively considerable increase in these pollutants. The court found this determination to be consistent with CEQA Guidelines Section 15064.7, stating: "The lead agency may rely on a threshold of significance standard to determine whether a project will cause a significant environmental effect." The court found that, "[a]lthough the project will contribute additional air pollutants to an existing nonattainment area, these increases are below the significance criteria." "Thus, we conclude that no fair argument exists that the Project will cause a significant unavoidable cumulative contribution to an air quality impact." In *Rialto Citizens for Responsible Growth*, the court upheld the SCAQMD's approach to utilizing the established air quality significance thresholds to determine whether the impacts of a project would be cumulatively considerable. *Rialto Citizens for Responsible Growth v. City of Rialto* (2012) 208 Cal. App. 4th 899. As in *Chula Vista* and *Rialto Citizens for Responsible Growth*, here the SCAQMD has demonstrated, when using accurate and appropriate data and assumptions, that the project will not exceed the established SCAQMD significance thresholds. Thus, it may be concluded that the proposed project will not contribute to a significant unavoidable cumulative air quality impact.

Therefore, there is no potential for significant adverse cumulative or cumulatively considerable impacts to be generated by PAR 1135 for any environmental topic.

XVIII. c) Less Than Significant Impact. Based on the foregoing analyses, PAR 1135 is not expected to cause adverse effects on human beings for any environmental topic, either directly or indirectly because: 1) the air quality and GHG impacts were determined to be less than the significance thresholds as analyzed in Section III – Air Quality and Greenhouse Gases; 2) the increased demand for energy, water, and solid waste disposal can be met by utilizing existing services as analyzed in Section VI – Energy, Section IX – Hydrology and Water Quality, and Section XVI – Solid and Hazardous Waste; 3) the hazards and hazardous materials impacts were determined to be less than significant, after mitigation, as analyzed in Section VIII – Hazards and Hazardous Materials; 4) the noise impacts were determined to be less than significant as analyzed in Section XII – Noise; and 5) the transportation and traffic impacts were determined to be less than the significance thresholds as analyzed in Section XVI – Transportation and Traffic. In addition, the analysis concluded that there would be no significant environmental impacts for the remaining environmental impact topic areas: aesthetics, agriculture and forestry resources, biological resources, cultural resources, geology and soils, land use and planning, mineral resources, public services, population and housing, and recreation.

Conclusion

As previously discussed in environmental topics I through XVIII, after mitigation, the proposed project has no potential to cause significant adverse environmental effects.

APPENDICES

Appendix A: Proposed Amended Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities

Appendix B: CalEEMod Files and Assumptions

B-1: Facility 1

B-2: Facility 2

B-3: Facility 3

Appendix C: CEQA Impact Evaluations – Assumptions and Calculations

C-1: Construction Summary

C-2: Operations Summary

C-3: Construction (Facility 1)

C-4: Operation (Facility 1)

C-5: Construction (Facility 2)

C-6: Construction (Facility 3)

C-7: Operation (Facility 3)

C-8: Construction (Facility 4)

C-9: Operation (Facility 4)

C-10: Construction (Facility 5)

C-11: Operation (Facility 5)

C-12: Construction (Facility 6)

C-13: Operation (Facility 6)

Appendix D: PAR 1135 List of Affected Facilities

Appendix E: Hazards Analysis

Appendix F: Comment Letters Received on the Draft Mitigated SEA and Response to Comments

APPENDIX A

Proposed Amended Rule 1135 – Emissions of Oxides of Nitrogen from Electricity Generating Facilities

In order to save space and avoid repetition, please refer to the latest version of Proposed Amended Rule 1135 located elsewhere in the Governing Board Package (meeting date November 2, 2018). The version of Proposed Amended Rule 1135 that was circulated with the Draft Mitigated SEA and released on September 18, 2018 for a 30-day public review and comment period ending on October 18, 2018 was identified as “PAR 1135 Preliminary Draft Rule July 2018.” Original hard copies of the Draft Mitigated SEA, which include the draft version of the proposed amended rule listed above, can be obtained by visiting the Public Information Center at SCAQMD Headquarters located at 21865 Copley Drive, Diamond Bar, CA 91765, by contacting Fabian Wesson, Public Advisor by phone at (909) 396-2039 or by email at PICrequests@aqmd.gov.

APPENDIX B

CalEEMod Files And Assumptions

APPENDIX B-1

CalEEMod Files And Assumptions

Replace Catalyst Modules in One SCR Unit at Facility 1

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD

Air District, Annual

**PAR 1135 - SCR Catalyst Module Replacement
(1) South Coast AQMD Air District, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	9			Operational Year	2018
Utility Company	Pasadena Water & Power				
CO2 Intensity (lb/MW hr)	1664.14	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD

Project Characteristics -

Air District, Annual

Land Use -

Construction Phase - No demolition, site preparation, grading, paving, or architectural coating is expected as part of the proposed project.

Off-road Equipment - Off-Road Equipment - No Architectural Coating

Off-road Equipment - Off-Road Equipment - Building Construction - Cranes (1): 4 Hours Per Day; Forklifts (1): 4 Hours Per Day; Aerial Lifts (1): 4 Hours Per Day

Off-road Equipment - Off-Road Equipment - No Demolition

Off-road Equipment - Off-Road Equipment - No Grading

Off-road Equipment - Off-Road Equipment - No Paving

Off-road Equipment - Off-Road Equipment - No Site Preparation

Trips and VMT - Trips and VMT - Building Construction - 3 Workers, 1 Vendor, 1 Haul

Architectural Coating - Architectural Coatings - No Architectural Coatings

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	0.00
tblArchitecturalCoating	EF_Parking	100.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	50.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	50.00	0.00
tblConstructionPhase	NumDays	0.00	5.00
tblConstructionPhase	PhaseEndDate	11/30/2018	12/1/2018
tblConstructionPhase	PhaseEndDate	11/30/2018	12/1/2018
tblConstructionPhase	PhaseEndDate	11/30/2018	12/1/2018
tblConstructionPhase	PhaseEndDate	11/30/2018	12/7/2018
tblConstructionPhase	PhaseEndDate	11/30/2018	12/1/2018
tblConstructionPhase	PhaseEndDate	11/30/2018	12/1/2018
tblOffRoadEquipment	HorsePower	63.00	97.00
tblOffRoadEquipment	LoadFactor	0.31	0.37

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD

tbloffroadequipment	OffRoadEquipmentUnitAmount	OffRoadEquipmentUnitAmount	1.00	0.00
tbloffroadequipment	OffRoadEquipmentUnitAmount	OffRoadEquipmentUnitAmount	4.00	0.00
tbloffroadequipment	OffRoadEquipmentUnitAmount	OffRoadEquipmentUnitAmount	1.00	0.00
tbloffroadequipment	OffRoadEquipmentUnitAmount	OffRoadEquipmentUnitAmount	1.00	0.00
tbloffroadequipment	OffRoadEquipmentUnitAmount	OffRoadEquipmentUnitAmount	2.00	1.00
tbloffroadequipment	OffRoadEquipmentUnitAmount	OffRoadEquipmentUnitAmount	1.00	0.00
tbloffroadequipment	OffRoadEquipmentUnitAmount	OffRoadEquipmentUnitAmount	1.00	0.00
tbloffroadequipment	OffRoadEquipmentUnitAmount	OffRoadEquipmentUnitAmount	1.00	0.00
tbloffroadequipment	OffRoadEquipmentUnitAmount	OffRoadEquipmentUnitAmount	1.00	0.00
tbloffroadequipment	OffRoadEquipmentUnitAmount	OffRoadEquipmentUnitAmount	1.00	0.00
tbloffroadequipment	OffRoadEquipmentUnitAmount	OffRoadEquipmentUnitAmount	2.00	0.00
tbloffroadequipment	OffRoadEquipmentUnitAmount	OffRoadEquipmentUnitAmount	2.00	0.00
tbloffroadequipment	OffRoadEquipmentUnitAmount	OffRoadEquipmentUnitAmount	2.00	0.00
tbloffroadequipment	OffRoadEquipmentUnitAmount	OffRoadEquipmentUnitAmount	1.00	0.00
tbloffroadequipment	OffRoadEquipmentUnitAmount	OffRoadEquipmentUnitAmount	1.00	0.00
tbloffroadequipment	UsageHours	UsageHours	6.00	0.00
tbloffroadequipment	UsageHours	UsageHours	6.00	0.00
tbloffroadequipment	UsageHours	UsageHours	8.00	0.00
tbloffroadequipment	UsageHours	UsageHours	8.00	0.00
tbloffroadequipment	UsageHours	UsageHours	6.00	4.00
tbloffroadequipment	UsageHours	UsageHours	8.00	0.00
tbloffroadequipment	UsageHours	UsageHours	7.00	0.00
tbloffroadequipment	UsageHours	UsageHours	7.00	0.00
tbloffroadequipment	UsageHours	UsageHours	1.00	0.00
tbloffroadequipment	UsageHours	UsageHours	1.00	0.00
tbloffroadequipment	UsageHours	UsageHours	8.00	0.00
tbloffroadequipment	UsageHours	UsageHours	6.00	0.00

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD

tblOffRoadEquipment	Air District, Annual	6.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	0.00	3.00

2.0 Emissions Summary

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD

Air District, Annual

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	1.0900e-003	0.0126	7.6300e-003	1.0000e-005	1.1000e-004	5.7000e-004	6.8000e-004	3.0000e-005	5.3000e-004	5.6000e-004	0.0000	1.3648	1.3648	3.8000e-004	0.0000	1.3743
Maximum	1.0900e-003	0.0126	7.6300e-003	1.0000e-005	1.1000e-004	5.7000e-004	6.8000e-004	3.0000e-005	5.3000e-004	5.6000e-004	0.0000	1.3648	1.3648	3.8000e-004	0.0000	1.3743

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	1.0900e-003	0.0126	7.6300e-003	1.0000e-005	1.1000e-004	5.7000e-004	6.8000e-004	3.0000e-005	5.3000e-004	5.6000e-004	0.0000	1.3648	1.3648	3.8000e-004	0.0000	1.3743
Maximum	1.0900e-003	0.0126	7.6300e-003	1.0000e-005	1.1000e-004	5.7000e-004	6.8000e-004	3.0000e-005	5.3000e-004	5.6000e-004	0.0000	1.3648	1.3648	3.8000e-004	0.0000	1.3743

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD

Quarter	Start Date	End Date	Air District	Annual Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest			

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD

Air District, Annual

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD

Phase Number	Phase Name	Annual	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	12/1/2018	12/1/2018	5	0	
2	Grading	Grading	12/1/2018	12/1/2018	5	0	
3	Building Construction	Building Construction	12/1/2018	12/7/2018	5	5	
4	Paving	Paving	12/1/2018	12/1/2018	5	0	
5	Architectural Coating	Architectural Coating	12/1/2018	12/1/2018	5	0	
6	Demolition	Demolition	12/2/2018	12/1/2018	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

PAR 1135 - SCR Replacement (1) - South Coast AQMD Air District, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	0.00	81	0.73
Demolition	Rubber Tired Dozers	0	0.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Site Preparation	Graders	0	0.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Grading	Concrete/Industrial Saws	0	0.00	81	0.73
Grading	Rubber Tired Dozers	0	0.00	247	0.40
Grading	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Building Construction	Aerial Lifts	1	4.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	1	4.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Paving	Cement and Mortar Mixers	0	0.00	9	0.56
Paving	Pavers	0	0.00	130	0.42
Paving	Rollers	0	0.00	80	0.38
Paving	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Architectural Coating	Air Compressors	0	0.00	78	0.48

Trips and VMT

PAR 1135 - SCR Replacement (1) - South Coast AQMD Air District, Annual

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	3	3.00	1.00	1.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD

Air District, Annual

3.2 Site Preparation - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD

Air District, Annual

3.2 Site Preparation - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

3.3 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD

Air District, Annual

3.3 Grading - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD

Air District, Annual

3.3 Grading - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

3.4 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.0300e-003	0.0121	7.1700e-003	1.0000e-005		5.7000e-004	5.7000e-004		5.3000e-004	5.3000e-004	0.0000	1.1848	1.1848	3.7000e-004	0.0000	1.1941
Total	1.0300e-003	0.0121	7.1700e-003	1.0000e-005		5.7000e-004	5.7000e-004		5.3000e-004	5.3000e-004	0.0000	1.1848	1.1848	3.7000e-004	0.0000	1.1941

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD

Air District, Annual

3.4 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	1.6000e-004	3.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0386	0.0386	0.0000	0.0000	0.0386
Vendor	1.0000e-005	3.1000e-004	8.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0625	0.0625	0.0000	0.0000	0.0626
Worker	4.0000e-005	3.0000e-005	3.5000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0789	0.0789	0.0000	0.0000	0.0790
Total	5.0000e-005	5.0000e-004	4.6000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	2.0000e-005	0.0000	3.0000e-005	0.0000	0.1800	0.1800	0.0000	0.0000	0.1802

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.0300e-003	0.0121	7.1700e-003	1.0000e-005		5.7000e-004	5.7000e-004		5.3000e-004	5.3000e-004	0.0000	1.1848	1.1848	3.7000e-004	0.0000	1.1941
Total	1.0300e-003	0.0121	7.1700e-003	1.0000e-005		5.7000e-004	5.7000e-004		5.3000e-004	5.3000e-004	0.0000	1.1848	1.1848	3.7000e-004	0.0000	1.1941

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD

Air District, Annual

3.4 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	1.6000e-004	3.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0386	0.0386	0.0000	0.0000	0.0386
Vendor	1.0000e-005	3.1000e-004	8.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0625	0.0625	0.0000	0.0000	0.0626
Worker	4.0000e-005	3.0000e-005	3.5000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0789	0.0789	0.0000	0.0000	0.0790
Total	5.0000e-005	5.0000e-004	4.6000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	2.0000e-005	0.0000	3.0000e-005	0.0000	0.1800	0.1800	0.0000	0.0000	0.1802

3.5 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD

Air District, Annual

3.5 Paving - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD

Air District, Annual

3.5 Paving - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

3.6 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD

Air District, Annual

3.6 Architectural Coating - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD

Air District, Annual

3.6 Architectural Coating - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

3.7 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD

Air District, Annual

3.7 Demolition - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD

Air District, Annual

3.7 Demolition - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD

Air District, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.544547	0.044708	0.198656	0.126890	0.018261	0.005879	0.019662	0.030939	0.001958	0.002113	0.004656	0.000702	0.001029

5.0 Energy Detail

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD

Air District, Annual

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000							

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD

Air District, Annual

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000							

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD

Air District, Annual

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD

Air District, Annual

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

7.0 Water Detail

PAR 1135

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD

Air District, Annual

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD

Air District, Annual

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD

Air District, Annual

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD

Air District, Annual

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Summer

PAR 1135 - SCR Catalyst Module Replacement (1) South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	9			Operational Year	2018
Utility Company	Pasadena Water & Power				
CO2 Intensity (lb/MW hr)	1664.14	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Summer

Project Characteristics -

Land Use -

Construction Phase - No demolition, site preparation, grading, paving, or architectural coating is expected as part of the proposed project.

Off-road Equipment - Off-Road Equipment - No Architectural Coating

Off-road Equipment - Off-Road Equipment - Building Construction - Cranes (1): 4 Hours Per Day; Forklifts (1): 4 Hours Per Day; Aerial Lifts (1): 4 Hours Per Day

Off-road Equipment - Off-Road Equipment - No Demolition

Off-road Equipment - Off-Road Equipment - No Grading

Off-road Equipment - Off-Road Equipment - No Paving

Off-road Equipment - Off-Road Equipment - No Site Preparation

Trips and VMT - Trips and VMT - Building Construction - 3 Workers, 1 Vendor, 1 Haul

Architectural Coating - Architectural Coatings - No Architectural Coatings

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	0.00
tblArchitecturalCoating	EF_Parking	100.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	50.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	50.00	0.00
tblConstructionPhase	NumDays	0.00	5.00
tblConstructionPhase	PhaseEndDate	11/30/2018	12/1/2018
tblConstructionPhase	PhaseEndDate	11/30/2018	12/1/2018
tblConstructionPhase	PhaseEndDate	11/30/2018	12/1/2018
tblConstructionPhase	PhaseEndDate	11/30/2018	12/7/2018
tblConstructionPhase	PhaseEndDate	11/30/2018	12/1/2018
tblConstructionPhase	PhaseEndDate	11/30/2018	12/1/2018
tblOffRoadEquipment	HorsePower	63.00	97.00
tblOffRoadEquipment	LoadFactor	0.31	0.37

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Summer

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	1.00	0.00
tblOffRoadEquipment	UsageHours	1.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Summer

tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	0.00	3.00

2.0 Emissions Summary

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Summer

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	0.4352	5.0451	3.0610	5.9800e-003	0.0434	0.2299	0.2733	0.0117	0.2115	0.2232	0.0000	604.0078	604.0078	0.1670	0.0000	608.1816
Maximum	0.4352	5.0451	3.0610	5.9800e-003	0.0434	0.2299	0.2733	0.0117	0.2115	0.2232	0.0000	604.0078	604.0078	0.1670	0.0000	608.1816

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	0.4352	5.0451	3.0610	5.9800e-003	0.0434	0.2299	0.2733	0.0117	0.2115	0.2232	0.0000	604.0078	604.0078	0.1670	0.0000	608.1816
Maximum	0.4352	5.0451	3.0610	5.9800e-003	0.0434	0.2299	0.2733	0.0117	0.2115	0.2232	0.0000	604.0078	604.0078	0.1670	0.0000	608.1816

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Summer

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	1.0000e-005	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000	0.0000	2.3000e-004

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	1.0000e-005	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000	0.0000	2.3000e-004

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	12/1/2018	12/1/2018	5	0	
2	Grading	Grading	12/1/2018	12/1/2018	5	0	
3	Building Construction	Building Construction	12/1/2018	12/7/2018	5	5	
4	Paving	Paving	12/1/2018	12/1/2018	5	0	
5	Architectural Coating	Architectural Coating	12/1/2018	12/1/2018	5	0	
6	Demolition	Demolition	12/2/2018	12/1/2018	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	0.00	81	0.73
Demolition	Rubber Tired Dozers	0	0.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Site Preparation	Graders	0	0.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Grading	Concrete/Industrial Saws	0	0.00	81	0.73
Grading	Rubber Tired Dozers	0	0.00	247	0.40
Grading	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Building Construction	Aerial Lifts	1	4.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	1	4.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Paving	Cement and Mortar Mixers	0	0.00	9	0.56
Paving	Pavers	0	0.00	130	0.42
Paving	Rollers	0	0.00	80	0.38
Paving	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Architectural Coating	Air Compressors	0	0.00	78	0.48

Trips and VMT

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Summer

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	3	3.00	1.00	1.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Summer

3.2 Site Preparation - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Summer

3.2 Site Preparation - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

3.3 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Summer

3.3 Grading - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Summer

3.3 Grading - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

3.4 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4130	4.8508	2.8688	5.1900e-003		0.2285	0.2285		0.2102	0.2102		522.4257	522.4257	0.1626		526.4917
Total	0.4130	4.8508	2.8688	5.1900e-003		0.2285	0.2285		0.2102	0.2102		522.4257	522.4257	0.1626		526.4917

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Summer

3.4 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.7300e-003	0.0616	0.0114	1.6000e-004	3.4900e-003	2.4000e-004	3.7300e-003	9.6000e-004	2.3000e-004	1.1800e-003		17.1357	17.1357	1.1700e-003		17.1650
Vendor	4.2600e-003	0.1212	0.0302	2.6000e-004	6.4000e-003	8.9000e-004	7.2900e-003	1.8400e-003	8.5000e-004	2.6900e-003		27.8658	27.8658	1.9000e-003		27.9132
Worker	0.0162	0.0116	0.1505	3.7000e-004	0.0335	2.7000e-004	0.0338	8.8900e-003	2.5000e-004	9.1400e-003		36.5806	36.5806	1.2500e-003		36.6117
Total	0.0222	0.1944	0.1921	7.9000e-004	0.0434	1.4000e-003	0.0448	0.0117	1.3300e-003	0.0130		81.5821	81.5821	4.3200e-003		81.6900

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4130	4.8508	2.8688	5.1900e-003		0.2285	0.2285		0.2102	0.2102	0.0000	522.4257	522.4257	0.1626		526.4916
Total	0.4130	4.8508	2.8688	5.1900e-003		0.2285	0.2285		0.2102	0.2102	0.0000	522.4257	522.4257	0.1626		526.4916

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Summer

3.4 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.7300e-003	0.0616	0.0114	1.6000e-004	3.4900e-003	2.4000e-004	3.7300e-003	9.6000e-004	2.3000e-004	1.1800e-003		17.1357	17.1357	1.1700e-003		17.1650
Vendor	4.2600e-003	0.1212	0.0302	2.6000e-004	6.4000e-003	8.9000e-004	7.2900e-003	1.8400e-003	8.5000e-004	2.6900e-003		27.8658	27.8658	1.9000e-003		27.9132
Worker	0.0162	0.0116	0.1505	3.7000e-004	0.0335	2.7000e-004	0.0338	8.8900e-003	2.5000e-004	9.1400e-003		36.5806	36.5806	1.2500e-003		36.6117
Total	0.0222	0.1944	0.1921	7.9000e-004	0.0434	1.4000e-003	0.0448	0.0117	1.3300e-003	0.0130		81.5821	81.5821	4.3200e-003		81.6900

3.5 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Summer

3.5 Paving - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Summer

3.5 Paving - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

3.6 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Summer

3.6 Architectural Coating - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Summer

3.6 Architectural Coating - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

3.7 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Summer

3.7 Demolition - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Summer

3.7 Demolition - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.544547	0.044708	0.198656	0.126890	0.018261	0.005879	0.019662	0.030939	0.001958	0.002113	0.004656	0.000702	0.001029

5.0 Energy Detail

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Summer

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Summer

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Summer

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

7.0 Water Detail

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Summer

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Winter

PAR 1135 - SCR Catalyst Module Replacement (1) South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	9			Operational Year	2018
Utility Company	Pasadena Water & Power				
CO2 Intensity (lb/MW hr)	1664.14	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Winter

Project Characteristics -

Land Use -

Construction Phase - No demolition, site preparation, grading, paving, or architectural coating is expected as part of the proposed project.

Off-road Equipment - Off-Road Equipment - No Architectural Coating

Off-road Equipment - Off-Road Equipment - Building Construction - Cranes (1): 4 Hours Per Day; Forklifts (1): 4 Hours Per Day; Aerial Lifts (1): 4 Hours Per Day

Off-road Equipment - Off-Road Equipment - No Demolition

Off-road Equipment - Off-Road Equipment - No Grading

Off-road Equipment - Off-Road Equipment - No Paving

Off-road Equipment - Off-Road Equipment - No Site Preparation

Trips and VMT - Trips and VMT - Building Construction - 3 Workers, 1 Vendor, 1 Haul

Architectural Coating - Architectural Coatings - No Architectural Coatings

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	0.00
tblArchitecturalCoating	EF_Parking	100.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	50.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	50.00	0.00
tblConstructionPhase	NumDays	0.00	5.00
tblConstructionPhase	PhaseEndDate	11/30/2018	12/1/2018
tblConstructionPhase	PhaseEndDate	11/30/2018	12/1/2018
tblConstructionPhase	PhaseEndDate	11/30/2018	12/1/2018
tblConstructionPhase	PhaseEndDate	11/30/2018	12/7/2018
tblConstructionPhase	PhaseEndDate	11/30/2018	12/1/2018
tblConstructionPhase	PhaseEndDate	11/30/2018	12/1/2018
tblOffRoadEquipment	HorsePower	63.00	97.00
tblOffRoadEquipment	LoadFactor	0.31	0.37

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Winter

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	1.00	0.00
tblOffRoadEquipment	UsageHours	1.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Winter

tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	0.00	3.00

2.0 Emissions Summary

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Winter

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	0.4368	5.0473	3.0509	5.9400e-003	0.0434	0.2299	0.2733	0.0117	0.2116	0.2232	0.0000	600.5501	600.5501	0.1671	0.0000	604.7268
Maximum	0.4368	5.0473	3.0509	5.9400e-003	0.0434	0.2299	0.2733	0.0117	0.2116	0.2232	0.0000	600.5501	600.5501	0.1671	0.0000	604.7268

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	0.4368	5.0473	3.0509	5.9400e-003	0.0434	0.2299	0.2733	0.0117	0.2116	0.2232	0.0000	600.5501	600.5501	0.1671	0.0000	604.7268
Maximum	0.4368	5.0473	3.0509	5.9400e-003	0.0434	0.2299	0.2733	0.0117	0.2116	0.2232	0.0000	600.5501	600.5501	0.1671	0.0000	604.7268

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Winter

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	1.0000e-005	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000	0.0000	2.3000e-004

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	1.0000e-005	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000	0.0000	2.3000e-004

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	12/1/2018	12/1/2018	5	0	
2	Grading	Grading	12/1/2018	12/1/2018	5	0	
3	Building Construction	Building Construction	12/1/2018	12/7/2018	5	5	
4	Paving	Paving	12/1/2018	12/1/2018	5	0	
5	Architectural Coating	Architectural Coating	12/1/2018	12/1/2018	5	0	
6	Demolition	Demolition	12/2/2018	12/1/2018	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	0.00	81	0.73
Demolition	Rubber Tired Dozers	0	0.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Site Preparation	Graders	0	0.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Grading	Concrete/Industrial Saws	0	0.00	81	0.73
Grading	Rubber Tired Dozers	0	0.00	247	0.40
Grading	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Building Construction	Aerial Lifts	1	4.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	1	4.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Paving	Cement and Mortar Mixers	0	0.00	9	0.56
Paving	Pavers	0	0.00	130	0.42
Paving	Rollers	0	0.00	80	0.38
Paving	Tractors/Loaders/Backhoes	0	0.00	97	0.37
Architectural Coating	Air Compressors	0	0.00	78	0.48

Trips and VMT

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Winter

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	3	3.00	1.00	1.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District,
Winter

3.2 Site Preparation - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Winter

3.2 Site Preparation - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

3.3 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Winter

3.3 Grading - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Winter

3.3 Grading - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

3.4 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4130	4.8508	2.8688	5.1900e-003		0.2285	0.2285		0.2102	0.2102		522.4257	522.4257	0.1626		526.4917
Total	0.4130	4.8508	2.8688	5.1900e-003		0.2285	0.2285		0.2102	0.2102		522.4257	522.4257	0.1626		526.4917

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Winter

3.4 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.7900e-003	0.0624	0.0124	1.6000e-004	3.4900e-003	2.4000e-004	3.7400e-003	9.6000e-004	2.3000e-004	1.1900e-003		16.8284	16.8284	1.2300e-003		16.8590
Vendor	4.4400e-003	0.1214	0.0335	2.5000e-004	6.4000e-003	9.0000e-004	7.3000e-003	1.8400e-003	8.6000e-004	2.7000e-003		27.0756	27.0756	2.0400e-003		27.1266
Worker	0.0176	0.0127	0.1362	3.4000e-004	0.0335	2.7000e-004	0.0338	8.8900e-003	2.5000e-004	9.1400e-003		34.2204	34.2204	1.1700e-003		34.2496
Total	0.0238	0.1965	0.1821	7.5000e-004	0.0434	1.4100e-003	0.0448	0.0117	1.3400e-003	0.0130		78.1244	78.1244	4.4400e-003		78.2352

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4130	4.8508	2.8688	5.1900e-003		0.2285	0.2285		0.2102	0.2102	0.0000	522.4257	522.4257	0.1626		526.4916
Total	0.4130	4.8508	2.8688	5.1900e-003		0.2285	0.2285		0.2102	0.2102	0.0000	522.4257	522.4257	0.1626		526.4916

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Winter

3.4 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.7900e-003	0.0624	0.0124	1.6000e-004	3.4900e-003	2.4000e-004	3.7400e-003	9.6000e-004	2.3000e-004	1.1900e-003		16.8284	16.8284	1.2300e-003		16.8590
Vendor	4.4400e-003	0.1214	0.0335	2.5000e-004	6.4000e-003	9.0000e-004	7.3000e-003	1.8400e-003	8.6000e-004	2.7000e-003		27.0756	27.0756	2.0400e-003		27.1266
Worker	0.0176	0.0127	0.1362	3.4000e-004	0.0335	2.7000e-004	0.0338	8.8900e-003	2.5000e-004	9.1400e-003		34.2204	34.2204	1.1700e-003		34.2496
Total	0.0238	0.1965	0.1821	7.5000e-004	0.0434	1.4100e-003	0.0448	0.0117	1.3400e-003	0.0130		78.1244	78.1244	4.4400e-003		78.2352

3.5 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Winter

3.5 Paving - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Winter

3.5 Paving - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

3.6 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Winter

3.6 Architectural Coating - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Winter

3.6 Architectural Coating - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

3.7 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Winter

3.7 Demolition - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Winter

3.7 Demolition - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.544547	0.044708	0.198656	0.126890	0.018261	0.005879	0.019662	0.030939	0.001958	0.002113	0.004656	0.000702	0.001029

5.0 Energy Detail

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Winter

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Winter

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Winter

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

7.0 Water Detail

PAR 1135 - SCR Catalyst Module Replacement (1) - South Coast AQMD Air District, Winter

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

APPENDIX B-2

CalEEMod Files And Assumptions

Remove One Engine and Install One New Engine at Facility 2

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Annual

PAR 1135 - Diesel Internal Combustion Engine (1)
South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	9			Operational Year	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	702.44	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Annual

Project Characteristics -

Land Use - User Defined Industrial

Construction Phase - Construction Phase - Diesel Internal Combustion Engine: 4 Days; Demolition: 1 Day; Paving 2 Days; Building Construction 2 Days

Off-road Equipment - Off-Road Equipment - Cranes (1): 7 Hours Per Day; Rubber Tired Loaders (2): 7 Hours Per Day; Forklifts (3): 7 Hours Per Day; Welders (1): 7 Hours Per Day; Generator Sets (1): 7 Hours Per Day

Off-road Equipment - Off-Road Equipment - No Site Preparation

Off-road Equipment - Off-Road Equipment - No Grading

Off-road Equipment - Off-Road Equipment - Cranes (1): 7 Hours Per Day; Rubber Tired Loaders (2): 7 Hours Per Day; Forklifts (3): 7 Hours Per Day; Welders (1): 7 Hours Per Day; Generator Sets (1): 7 Hours Per Day

Off-road Equipment - Off-Road Equipment - Paver (1): 4 Hours Per Day; Paving Equipment (1): 4 Hours Per Day; Rollers (1): 2 Hours Per Day; Cement and Mortar Mixers (1): 3 Hours Per Day; Tractors/Loaders/Backhoes (1) 4 Hours Per Day

Off-road Equipment - Off-Road Equipment - No Architectural Coating

Demolition - Demolition - 1,000 square feet

Trips and VMT - Trips And VMT - Demolition: 10 Worker Trips, 0 Vendor Trips, 5 Hauling Trips

Building Construction: 10 Worker Trips, 0 Vendor Trips, 5 Hauling Trips

Paving: 8 Worker Trips, 5 Vendor Trips, 0 Hauling Trips

Architectural Coating - Architectural Coating - No Architectural Coating

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	500.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	1,500.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	0.00
tblArchitecturalCoating	EF_Parking	100.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	50.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	50.00	0.00
tblConstructionPhase	NumDays	0.00	2.00
tblConstructionPhase	NumDays	0.00	1.00
tblConstructionPhase	NumDays	0.00	1.00

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Annual

tblConstructionPhase	PhaseEndDate	7/31/2018	8/2/2018
tblConstructionPhase	PhaseEndDate	7/31/2018	8/1/2019
tblConstructionPhase	PhaseEndDate	7/31/2018	8/1/2018
tblConstructionPhase	PhaseStartDate	8/1/2018	8/1/2019
tblLandUse	LandUseSquareFeet	0.00	1,000.00
tblOffRoadEquipment	HorsePower	231.00	81.00
tblOffRoadEquipment	HorsePower	203.00	89.00
tblOffRoadEquipment	HorsePower	203.00	247.00
tblOffRoadEquipment	HorsePower	89.00	97.00
tblOffRoadEquipment	HorsePower	89.00	97.00
tblOffRoadEquipment	LoadFactor	0.29	0.73
tblOffRoadEquipment	LoadFactor	0.36	0.20
tblOffRoadEquipment	LoadFactor	0.36	0.40
tblOffRoadEquipment	LoadFactor	0.20	0.37
tblOffRoadEquipment	LoadFactor	0.20	0.37
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	OffRoadEquipmentType	Concrete/Industrial Saws	Cranes
tblOffRoadEquipment	OffRoadEquipmentType	Forklifts	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Paving Equipment
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Annual

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	3.00
tblOffRoadEquipment	UsageHours	4.00	7.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	7.00	2.00
tblOffRoadEquipment	UsageHours	6.00	7.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	5.00
tblTripsAndVMT	VendorTripNumber	0.00	5.00
tblTripsAndVMT	WorkerTripNumber	30.00	10.00
tblTripsAndVMT	WorkerTripNumber	0.00	10.00
tblTripsAndVMT	WorkerTripNumber	13.00	8.00

2.0 Emissions Summary

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Annual

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	3.5200e-003	0.0314	0.0235	4.0000e-005	2.1000e-004	2.0300e-003	2.2400e-003	6.0000e-005	1.8900e-003	1.9500e-003	0.0000	3.3784	3.3784	8.1000e-004	0.0000	3.3987
2019	2.1500e-003	0.0201	0.0137	3.0000e-005	5.9000e-004	1.1300e-003	1.7200e-003	1.0000e-004	1.0600e-003	1.1600e-003	0.0000	2.3234	2.3234	5.3000e-004	0.0000	2.3367
Maximum	3.5200e-003	0.0314	0.0235	4.0000e-005	5.9000e-004	2.0300e-003	2.2400e-003	1.0000e-004	1.8900e-003	1.9500e-003	0.0000	3.3784	3.3784	8.1000e-004	0.0000	3.3987

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	3.5200e-003	0.0314	0.0235	4.0000e-005	2.1000e-004	2.0300e-003	2.2400e-003	6.0000e-005	1.8900e-003	1.9500e-003	0.0000	3.3784	3.3784	8.1000e-004	0.0000	3.3987
2019	2.1500e-003	0.0201	0.0137	3.0000e-005	5.9000e-004	1.1300e-003	1.7200e-003	1.0000e-004	1.0600e-003	1.1600e-003	0.0000	2.3234	2.3234	5.3000e-004	0.0000	2.3367
Maximum	3.5200e-003	0.0314	0.0235	4.0000e-005	5.9000e-004	2.0300e-003	2.2400e-003	1.0000e-004	1.8900e-003	1.9500e-003	0.0000	3.3784	3.3784	8.1000e-004	0.0000	3.3987

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	8-1-2018	10-31-2018	0.0249	0.0249
5	8-1-2019	9-30-2019	0.0159	0.0159
		Highest	0.0249	0.0249

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.0800e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	4.0800e-003	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Annual

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.0800e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	4.0800e-003	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	8/1/2019	8/1/2019	5	1	
2	Site Preparation	Site Preparation	8/1/2018	7/31/2018	5	0	
3	Grading	Grading	8/1/2018	7/31/2018	5	0	
4	Building Construction	Building Construction	8/1/2018	8/2/2018	5	2	
5	Paving	Paving	8/1/2018	8/1/2018	5	1	
6	Architectural Coating	Architectural Coating	8/1/2018	7/31/2018	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	0.00	78	0.48
Paving	Cement and Mortar Mixers	1	3.00	9	0.56
Demolition	Cranes	1	7.00	81	0.73
Grading	Concrete/Industrial Saws	0	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Rubber Tired Loaders	2	7.00	89	0.20
Site Preparation	Graders	0	8.00	187	0.41
Paving	Pavers	1	4.00	130	0.42
Paving	Rollers	1	2.00	80	0.38
Demolition	Rubber Tired Loaders	2	7.00	247	0.40
Grading	Rubber Tired Dozers	0	1.00	247	0.40
Building Construction	Forklifts	3	7.00	97	0.37
Demolition	Forklifts	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Demolition	Welders	1	7.00	46	0.45
Demolition	Generator Sets	1	7.00	84	0.74
Building Construction	Welders	1	7.00	46	0.45
Building Construction	Generator Sets	1	7.00	84	0.74
Paving	Paving Equipment	1	4.00	132	0.36
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Annual

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	12	10.00	0.00	5.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	10	10.00	0.00	5.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	8.00	5.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.9000e-004	0.0000	4.9000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1000e-003	0.0193	0.0134	2.0000e-005		1.1200e-003	1.1200e-003		1.0500e-003	1.0500e-003	0.0000	2.0818	2.0818	5.2000e-004	0.0000	2.0948
Total	2.1000e-003	0.0193	0.0134	2.0000e-005	4.9000e-004	1.1200e-003	1.6100e-003	7.0000e-005	1.0500e-003	1.1200e-003	0.0000	2.0818	2.0818	5.2000e-004	0.0000	2.0948

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Annual

3.2 Demolition - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	7.5000e-004	1.4000e-004	0.0000	4.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1906	0.1906	1.0000e-005	0.0000	0.1909
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	2.1000e-004	0.0000	5.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0510	0.0510	0.0000	0.0000	0.0510
Total	4.0000e-005	7.7000e-004	3.5000e-004	0.0000	9.0000e-005	0.0000	1.1000e-004	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2416	0.2416	1.0000e-005	0.0000	0.2419

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.9000e-004	0.0000	4.9000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1000e-003	0.0193	0.0134	2.0000e-005		1.1200e-003	1.1200e-003		1.0500e-003	1.0500e-003	0.0000	2.0818	2.0818	5.2000e-004	0.0000	2.0947
Total	2.1000e-003	0.0193	0.0134	2.0000e-005	4.9000e-004	1.1200e-003	1.6100e-003	7.0000e-005	1.0500e-003	1.1200e-003	0.0000	2.0818	2.0818	5.2000e-004	0.0000	2.0947

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Annual

3.2 Demolition - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	7.5000e-004	1.4000e-004	0.0000	4.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1906	0.1906	1.0000e-005	0.0000	0.1909
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	2.1000e-004	0.0000	5.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0510	0.0510	0.0000	0.0000	0.0510
Total	4.0000e-005	7.7000e-004	3.5000e-004	0.0000	9.0000e-005	0.0000	1.1000e-004	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2416	0.2416	1.0000e-005	0.0000	0.2419

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Annual

3.3 Site Preparation - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Annual

3.3 Site Preparation - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Annual

3.4 Grading - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Annual

3.4 Grading - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.1600e-003	0.0276	0.0204	3.0000e-005		1.8700e-003	1.8700e-003		1.7500e-003	1.7500e-003	0.0000	2.6673	2.6673	6.9000e-004	0.0000	2.6846
Total	3.1600e-003	0.0276	0.0204	3.0000e-005		1.8700e-003	1.8700e-003		1.7500e-003	1.7500e-003	0.0000	2.6673	2.6673	6.9000e-004	0.0000	2.6846

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Annual

3.5 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	7.9000e-004	1.5000e-004	0.0000	4.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1929	0.1929	1.0000e-005	0.0000	0.1932
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	4.0000e-005	4.7000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1053	0.1053	0.0000	0.0000	0.1053
Total	7.0000e-005	8.3000e-004	6.2000e-004	0.0000	1.5000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.2981	0.2981	1.0000e-005	0.0000	0.2985

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.1600e-003	0.0276	0.0204	3.0000e-005		1.8700e-003	1.8700e-003		1.7500e-003	1.7500e-003	0.0000	2.6673	2.6673	6.9000e-004	0.0000	2.6846
Total	3.1600e-003	0.0276	0.0204	3.0000e-005		1.8700e-003	1.8700e-003		1.7500e-003	1.7500e-003	0.0000	2.6673	2.6673	6.9000e-004	0.0000	2.6846

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Annual

3.5 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	7.9000e-004	1.5000e-004	0.0000	4.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1929	0.1929	1.0000e-005	0.0000	0.1932
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	4.0000e-005	4.7000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1053	0.1053	0.0000	0.0000	0.1053
Total	7.0000e-005	8.3000e-004	6.2000e-004	0.0000	1.5000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.2981	0.2981	1.0000e-005	0.0000	0.2985

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.5000e-004	2.6000e-003	2.2400e-003	0.0000		1.5000e-004	1.5000e-004		1.4000e-004	1.4000e-004	0.0000	0.3085	0.3085	9.0000e-005	0.0000	0.3108
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	2.5000e-004	2.6000e-003	2.2400e-003	0.0000		1.5000e-004	1.5000e-004		1.4000e-004	1.4000e-004	0.0000	0.3085	0.3085	9.0000e-005	0.0000	0.3108

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Annual

3.6 Paving - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	3.1000e-004	8.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0625	0.0625	0.0000	0.0000	0.0626
Worker	2.0000e-005	2.0000e-005	1.9000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0421	0.0421	0.0000	0.0000	0.0421
Total	3.0000e-005	3.3000e-004	2.7000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.1046	0.1046	0.0000	0.0000	0.1047

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.5000e-004	2.6000e-003	2.2400e-003	0.0000		1.5000e-004	1.5000e-004		1.4000e-004	1.4000e-004	0.0000	0.3085	0.3085	9.0000e-005	0.0000	0.3108
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	2.5000e-004	2.6000e-003	2.2400e-003	0.0000		1.5000e-004	1.5000e-004		1.4000e-004	1.4000e-004	0.0000	0.3085	0.3085	9.0000e-005	0.0000	0.3108

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Annual

3.6 Paving - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	3.1000e-004	8.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0625	0.0625	0.0000	0.0000	0.0626
Worker	2.0000e-005	2.0000e-005	1.9000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0421	0.0421	0.0000	0.0000	0.0421
Total	3.0000e-005	3.3000e-004	2.7000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.1046	0.1046	0.0000	0.0000	0.1047

3.7 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Annual

3.7 Architectural Coating - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Annual

3.7 Architectural Coating - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.547828	0.043645	0.199892	0.122290	0.016774	0.005862	0.020637	0.032653	0.002037	0.001944	0.004777	0.000705	0.000956

5.0 Energy Detail

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Annual

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000							

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Annual

5.2 Energy by Land Use - Natural Gas

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000							

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Annual

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.0800e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	4.0800e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Annual

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.6100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	4.0700e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.6100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	4.0700e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

7.0 Water Detail

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Annual

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Annual

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Annual

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Annual

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Summer

PAR 1135 - Diesel Internal Combustion Engine (1)
South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	9			Operational Year	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	702.44	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Summer

Project Characteristics -

Land Use - User Defined Industrial

Construction Phase - Construction Phase - Diesel Internal Combustion Engine: 4 Days; Demolition: 1 Day; Paving 2 Days; Building Construction 2 Days

Off-road Equipment - Off-Road Equipment - Cranes (1): 7 Hours Per Day; Rubber Tired Loaders (2): 7 Hours Per Day; Forklifts (3): 7 Hours Per Day; Welders (1): 7 Hours Per Day; Generator Sets (1): 7 Hours Per Day

Off-road Equipment - Off-Road Equipment - No Site Preparation

Off-road Equipment - Off-Road Equipment - No Grading

Off-road Equipment - Off-Road Equipment - Cranes (1): 7 Hours Per Day; Rubber Tired Loaders (2): 7 Hours Per Day; Forklifts (3): 7 Hours Per Day; Welders (1): 7 Hours Per Day; Generator Sets (1): 7 Hours Per Day

Off-road Equipment - Off-Road Equipment - Paver (1): 4 Hours Per Day; Paving Equipment (1): 4 Hours Per Day; Rollers (1): 2 Hours Per Day; Cement and Mortar Mixers (1): 3 Hours Per Day; Tractors/Loaders/Backhoes (1) 4 Hours Per Day

Off-road Equipment - Off-Road Equipment - No Architectural Coating

Demolition - Demolition - 1,000 square feet

Trips and VMT - Trips And VMT - Demolition: 10 Worker Trips, 0 Vendor Trips, 5 Hauling Trips

Building Construction: 10 Worker Trips, 0 Vendor Trips, 5 Hauling Trips

Paving: 8 Worker Trips, 5 Vendor Trips, 0 Hauling Trips

Architectural Coating - Architectural Coating - No Architectural Coating

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	500.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	1,500.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	0.00
tblArchitecturalCoating	EF_Parking	100.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	50.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	50.00	0.00
tblConstructionPhase	NumDays	0.00	2.00
tblConstructionPhase	NumDays	0.00	1.00
tblConstructionPhase	NumDays	0.00	1.00

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Summer

tblConstructionPhase	PhaseEndDate	7/31/2018	8/2/2018
tblConstructionPhase	PhaseEndDate	7/31/2018	8/1/2019
tblConstructionPhase	PhaseEndDate	7/31/2018	8/1/2018
tblConstructionPhase	PhaseStartDate	8/1/2018	8/1/2019
tblLandUse	LandUseSquareFeet	0.00	1,000.00
tblOffRoadEquipment	HorsePower	231.00	81.00
tblOffRoadEquipment	HorsePower	203.00	89.00
tblOffRoadEquipment	HorsePower	203.00	247.00
tblOffRoadEquipment	HorsePower	89.00	97.00
tblOffRoadEquipment	HorsePower	89.00	97.00
tblOffRoadEquipment	LoadFactor	0.29	0.73
tblOffRoadEquipment	LoadFactor	0.36	0.20
tblOffRoadEquipment	LoadFactor	0.36	0.40
tblOffRoadEquipment	LoadFactor	0.20	0.37
tblOffRoadEquipment	LoadFactor	0.20	0.37
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	OffRoadEquipmentType	Concrete/Industrial Saws	Cranes
tblOffRoadEquipment	OffRoadEquipmentType	Forklifts	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Paving Equipment
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Summer

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	3.00
tblOffRoadEquipment	UsageHours	4.00	7.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	7.00	2.00
tblOffRoadEquipment	UsageHours	6.00	7.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	5.00
tblTripsAndVMT	VendorTripNumber	0.00	5.00
tblTripsAndVMT	WorkerTripNumber	30.00	10.00
tblTripsAndVMT	WorkerTripNumber	0.00	10.00
tblTripsAndVMT	WorkerTripNumber	13.00	8.00

2.0 Emissions Summary

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Summer

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	3.8031	34.2743	26.0985	0.0423	0.2769	2.1756	2.4525	0.0745	2.0285	2.1031	0.0000	4,193.2878	4,193.2878	1.0027	0.0000	4,218.3540
2019	4.2916	40.1480	27.4429	0.0524	1.1835	2.2534	3.4369	0.2026	2.1144	2.3171	0.0000	5,131.1027	5,131.1027	1.1738	0.0000	5,160.4488
Maximum	4.2916	40.1480	27.4429	0.0524	1.1835	2.2534	3.4369	0.2026	2.1144	2.3171	0.0000	5,131.1027	5,131.1027	1.1738	0.0000	5,160.4488

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	3.8031	34.2743	26.0985	0.0423	0.2769	2.1756	2.4525	0.0745	2.0285	2.1031	0.0000	4,193.2878	4,193.2878	1.0027	0.0000	4,218.3539
2019	4.2916	40.1480	27.4429	0.0524	1.1835	2.2534	3.4369	0.2026	2.1144	2.3171	0.0000	5,131.1027	5,131.1027	1.1738	0.0000	5,160.4488
Maximum	4.2916	40.1480	27.4429	0.0524	1.1835	2.2534	3.4369	0.2026	2.1144	2.3171	0.0000	5,131.1027	5,131.1027	1.1738	0.0000	5,160.4488

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Summer

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0224	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000	0.0000	2.3000e-004

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0224	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000	0.0000	2.3000e-004

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	8/1/2019	8/1/2019	5	1	
2	Site Preparation	Site Preparation	8/1/2018	7/31/2018	5	0	
3	Grading	Grading	8/1/2018	7/31/2018	5	0	
4	Building Construction	Building Construction	8/1/2018	8/2/2018	5	2	
5	Paving	Paving	8/1/2018	8/1/2018	5	1	
6	Architectural Coating	Architectural Coating	8/1/2018	7/31/2018	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	0.00	78	0.48
Paving	Cement and Mortar Mixers	1	3.00	9	0.56
Demolition	Cranes	1	7.00	81	0.73
Grading	Concrete/Industrial Saws	0	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Rubber Tired Loaders	2	7.00	89	0.20
Site Preparation	Graders	0	8.00	187	0.41
Paving	Pavers	1	4.00	130	0.42
Paving	Rollers	1	2.00	80	0.38
Demolition	Rubber Tired Loaders	2	7.00	247	0.40
Grading	Rubber Tired Dozers	0	1.00	247	0.40
Building Construction	Forklifts	3	7.00	97	0.37
Demolition	Forklifts	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Demolition	Welders	1	7.00	46	0.45
Demolition	Generator Sets	1	7.00	84	0.74
Building Construction	Welders	1	7.00	46	0.45
Building Construction	Generator Sets	1	7.00	84	0.74
Paving	Paving Equipment	1	4.00	132	0.36
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Summer

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	12	10.00	0.00	5.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	10	10.00	0.00	5.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	8.00	5.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.9844	0.0000	0.9844	0.1490	0.0000	0.1490			0.0000			0.0000
Off-Road	4.2015	38.6583	26.7149	0.0473		2.2471	2.2471		2.1085	2.1085		4,589.5953	4,589.5953	1.1413		4,618.1268
Total	4.2015	38.6583	26.7149	0.0473	0.9844	2.2471	3.2314	0.1490	2.1085	2.2575		4,589.5953	4,589.5953	1.1413		4,618.1268

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Summer

3.2 Demolition - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0411	1.4556	0.2786	3.9200e-003	0.0874	5.4000e-003	0.0928	0.0239	5.1700e-003	0.0291		423.4086	423.4086	0.0289		424.1307
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0490	0.0341	0.4493	1.1900e-003	0.1118	8.7000e-004	0.1127	0.0296	8.0000e-004	0.0305		118.0989	118.0989	3.6900e-003		118.1912
Total	0.0901	1.4897	0.7280	5.1100e-003	0.1992	6.2700e-003	0.2054	0.0536	5.9700e-003	0.0596		541.5075	541.5075	0.0326		542.3219

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.9844	0.0000	0.9844	0.1490	0.0000	0.1490			0.0000			0.0000
Off-Road	4.2015	38.6583	26.7149	0.0473		2.2471	2.2471		2.1085	2.1085	0.0000	4,589.5953	4,589.5953	1.1413		4,618.1268
Total	4.2015	38.6583	26.7149	0.0473	0.9844	2.2471	3.2314	0.1490	2.1085	2.2575	0.0000	4,589.5953	4,589.5953	1.1413		4,618.1268

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Summer

3.2 Demolition - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0411	1.4556	0.2786	3.9200e-003	0.0874	5.4000e-003	0.0928	0.0239	5.1700e-003	0.0291		423.4086	423.4086	0.0289		424.1307
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0490	0.0341	0.4493	1.1900e-003	0.1118	8.7000e-004	0.1127	0.0296	8.0000e-004	0.0305		118.0989	118.0989	3.6900e-003		118.1912
Total	0.0901	1.4897	0.7280	5.1100e-003	0.1992	6.2700e-003	0.2054	0.0536	5.9700e-003	0.0596		541.5075	541.5075	0.0326		542.3219

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Summer

3.3 Site Preparation - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Summer

3.3 Site Preparation - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Summer

3.4 Grading - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Summer

3.4 Grading - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1632	27.6373	20.4199	0.0300		1.8728	1.8728		1.7492	1.7492		2,940.1920	2,940.1920	0.7632		2,959.2731
Total	3.1632	27.6373	20.4199	0.0300		1.8728	1.8728		1.7492	1.7492		2,940.1920	2,940.1920	0.7632		2,959.2731

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Summer

3.5 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0217	0.7698	0.1425	1.9900e-003	0.0437	2.9600e-003	0.0467	0.0120	2.8300e-003	0.0148		214.1966	214.1966	0.0147		214.5628
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0539	0.0386	0.5018	1.2300e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		121.9352	121.9352	4.1600e-003		122.0391
Total	0.0756	0.8084	0.6443	3.2200e-003	0.1555	3.8500e-003	0.1593	0.0416	3.6500e-003	0.0453		336.1317	336.1317	0.0188		336.6019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1632	27.6373	20.4199	0.0300		1.8728	1.8728		1.7492	1.7492	0.0000	2,940.1920	2,940.1920	0.7632		2,959.2731
Total	3.1632	27.6373	20.4199	0.0300		1.8728	1.8728		1.7492	1.7492	0.0000	2,940.1920	2,940.1920	0.7632		2,959.2731

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Summer

3.5 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0217	0.7698	0.1425	1.9900e-003	0.0437	2.9600e-003	0.0467	0.0120	2.8300e-003	0.0148		214.1966	214.1966	0.0147		214.5628
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0539	0.0386	0.5018	1.2300e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		121.9352	121.9352	4.1600e-003		122.0391
Total	0.0756	0.8084	0.6443	3.2200e-003	0.1555	3.8500e-003	0.1593	0.0416	3.6500e-003	0.0453		336.1317	336.1317	0.0188		336.6019

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4999	5.1917	4.4820	6.8400e-003		0.2938	0.2938		0.2708	0.2708		680.0869	680.0869	0.2078		685.2816
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.4999	5.1917	4.4820	6.8400e-003		0.2938	0.2938		0.2708	0.2708		680.0869	680.0869	0.2078		685.2816

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Summer

3.6 Paving - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0213	0.6059	0.1509	1.3100e-003	0.0320	4.4300e-003	0.0364	9.2100e-003	4.2400e-003	0.0135		139.3290	139.3290	9.4800e-003		139.5661
Worker	0.0431	0.0309	0.4014	9.8000e-004	0.0894	7.1000e-004	0.0901	0.0237	6.6000e-004	0.0244		97.5481	97.5481	3.3300e-003		97.6313
Total	0.0644	0.6368	0.5523	2.2900e-003	0.1214	5.1400e-003	0.1266	0.0329	4.9000e-003	0.0378		236.8772	236.8772	0.0128		237.1974

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4999	5.1917	4.4820	6.8400e-003		0.2938	0.2938		0.2708	0.2708	0.0000	680.0869	680.0869	0.2078		685.2816
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.4999	5.1917	4.4820	6.8400e-003		0.2938	0.2938		0.2708	0.2708	0.0000	680.0869	680.0869	0.2078		685.2816

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Summer

3.6 Paving - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0213	0.6059	0.1509	1.3100e-003	0.0320	4.4300e-003	0.0364	9.2100e-003	4.2400e-003	0.0135		139.3290	139.3290	9.4800e-003		139.5661
Worker	0.0431	0.0309	0.4014	9.8000e-004	0.0894	7.1000e-004	0.0901	0.0237	6.6000e-004	0.0244		97.5481	97.5481	3.3300e-003		97.6313
Total	0.0644	0.6368	0.5523	2.2900e-003	0.1214	5.1400e-003	0.1266	0.0329	4.9000e-003	0.0378		236.8772	236.8772	0.0128		237.1974

3.7 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Summer

3.7 Architectural Coating - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Summer

3.7 Architectural Coating - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.547828	0.043645	0.199892	0.122290	0.016774	0.005862	0.020637	0.032653	0.002037	0.001944	0.004777	0.000705	0.000956

5.0 Energy Detail

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Summer

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Summer

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Summer

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.5400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0198					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.5400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0198					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

7.0 Water Detail

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Summer

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Winter

PAR 1135 - Diesel Internal Combustion Engine (1)
South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	9			Operational Year	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MW hr)	702.44	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Winter

Project Characteristics -

Land Use - User Defined Industrial

Construction Phase - Construction Phase - Diesel Internal Combustion Engine: 4 Days; Demolition: 1 Day; Paving 2 Days; Building Construction 2 Days

Off-road Equipment - Off-Road Equipment - Cranes (1): 7 Hours Per Day; Rubber Tired Loaders (2): 7 Hours Per Day; Forklifts (3): 7 Hours Per Day; Welders (1): 7 Hours Per Day; Generator Sets (1): 7 Hours Per Day

Off-road Equipment - Off-Road Equipment - No Site Preparation

Off-road Equipment - Off-Road Equipment - No Grading

Off-road Equipment - Off-Road Equipment - Cranes (1): 7 Hours Per Day; Rubber Tired Loaders (2): 7 Hours Per Day; Forklifts (3): 7 Hours Per Day; Welders (1): 7 Hours Per Day; Generator Sets (1): 7 Hours Per Day

Off-road Equipment - Off-Road Equipment - Paver (1): 4 Hours Per Day; Paving Equipment (1): 4 Hours Per Day; Rollers (1): 2 Hours Per Day; Cement and Mortar Mixers (1): 3 Hours Per Day; Tractors/Loaders/Backhoes (1) 4 Hours Per Day

Off-road Equipment - Off-Road Equipment - No Architectural Coating

Demolition - Demolition - 1,000 square feet

Trips and VMT - Trips And VMT - Demolition: 10 Worker Trips, 0 Vendor Trips, 5 Hauling Trips

Building Construction: 10 Worker Trips, 0 Vendor Trips, 5 Hauling Trips

Paving: 8 Worker Trips, 5 Vendor Trips, 0 Hauling Trips

Architectural Coating - Architectural Coating - No Architectural Coating

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	500.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	1,500.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	100.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	0.00
tblArchitecturalCoating	EF_Parking	100.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	50.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	50.00	0.00
tblConstructionPhase	NumDays	0.00	2.00
tblConstructionPhase	NumDays	0.00	1.00
tblConstructionPhase	NumDays	0.00	1.00

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Winter

tblConstructionPhase	PhaseEndDate	7/31/2018	8/2/2018
tblConstructionPhase	PhaseEndDate	7/31/2018	8/1/2019
tblConstructionPhase	PhaseEndDate	7/31/2018	8/1/2018
tblConstructionPhase	PhaseStartDate	8/1/2018	8/1/2019
tblLandUse	LandUseSquareFeet	0.00	1,000.00
tblOffRoadEquipment	HorsePower	231.00	81.00
tblOffRoadEquipment	HorsePower	203.00	89.00
tblOffRoadEquipment	HorsePower	203.00	247.00
tblOffRoadEquipment	HorsePower	89.00	97.00
tblOffRoadEquipment	HorsePower	89.00	97.00
tblOffRoadEquipment	LoadFactor	0.29	0.73
tblOffRoadEquipment	LoadFactor	0.36	0.20
tblOffRoadEquipment	LoadFactor	0.36	0.40
tblOffRoadEquipment	LoadFactor	0.20	0.37
tblOffRoadEquipment	LoadFactor	0.20	0.37
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	OffRoadEquipmentType	Concrete/Industrial Saws	Cranes
tblOffRoadEquipment	OffRoadEquipmentType	Forklifts	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Paving Equipment
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Winter

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	3.00
tblOffRoadEquipment	UsageHours	4.00	7.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	7.00	2.00
tblOffRoadEquipment	UsageHours	6.00	7.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	5.00
tblTripsAndVMT	VendorTripNumber	0.00	5.00
tblTripsAndVMT	WorkerTripNumber	30.00	10.00
tblTripsAndVMT	WorkerTripNumber	0.00	10.00
tblTripsAndVMT	WorkerTripNumber	13.00	8.00

2.0 Emissions Summary

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Winter

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	3.8131	34.2927	26.0413	0.0421	0.2769	2.1757	2.4526	0.0745	2.0287	2.1032	0.0000	4,171.3337	4,171.3337	1.0036	0.0000	4,196.4225
2019	4.2971	40.1709	27.4217	0.0522	1.1835	2.2535	3.4370	0.2026	2.1145	2.3172	0.0000	5,115.7858	5,115.7858	1.1749	0.0000	5,145.1585
Maximum	4.2971	40.1709	27.4217	0.0522	1.1835	2.2535	3.4370	0.2026	2.1145	2.3172	0.0000	5,115.7858	5,115.7858	1.1749	0.0000	5,145.1585

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	3.8131	34.2927	26.0413	0.0421	0.2769	2.1757	2.4526	0.0745	2.0287	2.1032	0.0000	4,171.3337	4,171.3337	1.0036	0.0000	4,196.4225
2019	4.2971	40.1709	27.4217	0.0522	1.1835	2.2535	3.4370	0.2026	2.1145	2.3172	0.0000	5,115.7858	5,115.7858	1.1749	0.0000	5,145.1585
Maximum	4.2971	40.1709	27.4217	0.0522	1.1835	2.2535	3.4370	0.2026	2.1145	2.3172	0.0000	5,115.7858	5,115.7858	1.1749	0.0000	5,145.1585

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Winter

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0224	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000	0.0000	2.3000e-004

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	0.0224	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000	0.0000	2.3000e-004

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	8/1/2019	8/1/2019	5	1	
2	Site Preparation	Site Preparation	8/1/2018	7/31/2018	5	0	
3	Grading	Grading	8/1/2018	7/31/2018	5	0	
4	Building Construction	Building Construction	8/1/2018	8/2/2018	5	2	
5	Paving	Paving	8/1/2018	8/1/2018	5	1	
6	Architectural Coating	Architectural Coating	8/1/2018	7/31/2018	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	0.00	78	0.48
Paving	Cement and Mortar Mixers	1	3.00	9	0.56
Demolition	Cranes	1	7.00	81	0.73
Grading	Concrete/Industrial Saws	0	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Rubber Tired Loaders	2	7.00	89	0.20
Site Preparation	Graders	0	8.00	187	0.41
Paving	Pavers	1	4.00	130	0.42
Paving	Rollers	1	2.00	80	0.38
Demolition	Rubber Tired Loaders	2	7.00	247	0.40
Grading	Rubber Tired Dozers	0	1.00	247	0.40
Building Construction	Forklifts	3	7.00	97	0.37
Demolition	Forklifts	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Demolition	Welders	1	7.00	46	0.45
Demolition	Generator Sets	1	7.00	84	0.74
Building Construction	Welders	1	7.00	46	0.45
Building Construction	Generator Sets	1	7.00	84	0.74
Paving	Paving Equipment	1	4.00	132	0.36
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Winter

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	12	10.00	0.00	5.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	10	10.00	0.00	5.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	8.00	5.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.9844	0.0000	0.9844	0.1490	0.0000	0.1490			0.0000			0.0000
Off-Road	4.2015	38.6583	26.7149	0.0473		2.2471	2.2471		2.1085	2.1085		4,589.5953	4,589.5953	1.1413		4,618.1268
Total	4.2015	38.6583	26.7149	0.0473	0.9844	2.2471	3.2314	0.1490	2.1085	2.2575		4,589.5953	4,589.5953	1.1413		4,618.1268

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Winter

3.2 Demolition - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0423	1.4752	0.3014	3.8500e-003	0.0874	5.5000e-003	0.0929	0.0239	5.2600e-003	0.0292		415.7250	415.7250	0.0302		416.4798
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0533	0.0373	0.4054	1.1100e-003	0.1118	8.7000e-004	0.1127	0.0296	8.0000e-004	0.0305		110.4656	110.4656	3.4500e-003		110.5519
Total	0.0956	1.5125	0.7068	4.9600e-003	0.1992	6.3700e-003	0.2055	0.0536	6.0600e-003	0.0597		526.1906	526.1906	0.0336		527.0316

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.9844	0.0000	0.9844	0.1490	0.0000	0.1490			0.0000			0.0000
Off-Road	4.2015	38.6583	26.7149	0.0473		2.2471	2.2471		2.1085	2.1085	0.0000	4,589.5953	4,589.5953	1.1413		4,618.1268
Total	4.2015	38.6583	26.7149	0.0473	0.9844	2.2471	3.2314	0.1490	2.1085	2.2575	0.0000	4,589.5953	4,589.5953	1.1413		4,618.1268

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Winter

3.2 Demolition - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0423	1.4752	0.3014	3.8500e-003	0.0874	5.5000e-003	0.0929	0.0239	5.2600e-003	0.0292		415.7250	415.7250	0.0302		416.4798
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0533	0.0373	0.4054	1.1100e-003	0.1118	8.7000e-004	0.1127	0.0296	8.0000e-004	0.0305		110.4656	110.4656	3.4500e-003		110.5519
Total	0.0956	1.5125	0.7068	4.9600e-003	0.1992	6.3700e-003	0.2055	0.0536	6.0600e-003	0.0597		526.1906	526.1906	0.0336		527.0316

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Winter

3.3 Site Preparation - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Winter

3.3 Site Preparation - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Winter

3.4 Grading - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Winter

3.4 Grading - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1632	27.6373	20.4199	0.0300		1.8728	1.8728		1.7492	1.7492		2,940.1920	2,940.1920	0.7632		2,959.2731
Total	3.1632	27.6373	20.4199	0.0300		1.8728	1.8728		1.7492	1.7492		2,940.1920	2,940.1920	0.7632		2,959.2731

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Winter

3.5 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0223	0.7805	0.1546	1.9500e-003	0.0437	3.0200e-003	0.0467	0.0120	2.8900e-003	0.0149		210.3543	210.3543	0.0153		210.7375
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0586	0.0423	0.4541	1.1500e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		114.0679	114.0679	3.8900e-003		114.1652
Total	0.0809	0.8228	0.6087	3.1000e-003	0.1555	3.9100e-003	0.1594	0.0416	3.7100e-003	0.0453		324.4222	324.4222	0.0192		324.9027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1632	27.6373	20.4199	0.0300		1.8728	1.8728		1.7492	1.7492	0.0000	2,940.1920	2,940.1920	0.7632		2,959.2731
Total	3.1632	27.6373	20.4199	0.0300		1.8728	1.8728		1.7492	1.7492	0.0000	2,940.1920	2,940.1920	0.7632		2,959.2731

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Winter

3.5 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0223	0.7805	0.1546	1.9500e-003	0.0437	3.0200e-003	0.0467	0.0120	2.8900e-003	0.0149		210.3543	210.3543	0.0153		210.7375
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0586	0.0423	0.4541	1.1500e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		114.0679	114.0679	3.8900e-003		114.1652
Total	0.0809	0.8228	0.6087	3.1000e-003	0.1555	3.9100e-003	0.1594	0.0416	3.7100e-003	0.0453		324.4222	324.4222	0.0192		324.9027

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4999	5.1917	4.4820	6.8400e-003		0.2938	0.2938		0.2708	0.2708		680.0869	680.0869	0.2078		685.2816
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.4999	5.1917	4.4820	6.8400e-003		0.2938	0.2938		0.2708	0.2708		680.0869	680.0869	0.2078		685.2816

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Winter

3.6 Paving - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0222	0.6069	0.1675	1.2700e-003	0.0320	4.5000e-003	0.0365	9.2100e-003	4.3000e-003	0.0135		135.3782	135.3782	0.0102		135.6329
Worker	0.0469	0.0339	0.3633	9.2000e-004	0.0894	7.1000e-004	0.0901	0.0237	6.6000e-004	0.0244		91.2543	91.2543	3.1100e-003		91.3322
Total	0.0691	0.6408	0.5308	2.1900e-003	0.1214	5.2100e-003	0.1266	0.0329	4.9600e-003	0.0379		226.6326	226.6326	0.0133		226.9651

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4999	5.1917	4.4820	6.8400e-003		0.2938	0.2938		0.2708	0.2708	0.0000	680.0869	680.0869	0.2078		685.2816
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.4999	5.1917	4.4820	6.8400e-003		0.2938	0.2938		0.2708	0.2708	0.0000	680.0869	680.0869	0.2078		685.2816

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Winter

3.6 Paving - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0222	0.6069	0.1675	1.2700e-003	0.0320	4.5000e-003	0.0365	9.2100e-003	4.3000e-003	0.0135		135.3782	135.3782	0.0102		135.6329
Worker	0.0469	0.0339	0.3633	9.2000e-004	0.0894	7.1000e-004	0.0901	0.0237	6.6000e-004	0.0244		91.2543	91.2543	3.1100e-003		91.3322
Total	0.0691	0.6408	0.5308	2.1900e-003	0.1214	5.2100e-003	0.1266	0.0329	4.9600e-003	0.0379		226.6326	226.6326	0.0133		226.9651

3.7 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Winter

3.7 Architectural Coating - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Winter

3.7 Architectural Coating - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.547828	0.043645	0.199892	0.122290	0.016774	0.005862	0.020637	0.032653	0.002037	0.001944	0.004777	0.000705	0.000956

5.0 Energy Detail

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Winter

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Winter

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Winter

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.5400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0198					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.5400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0198					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	0.0224	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

7.0 Water Detail

PAR 1135 - Diesel Internal Combustion Engine (1) - South Coast AQMD Air District, Winter

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

APPENDIX B-3

CalEEMod Files And Assumptions

Remove Three Boilers and Install Three New Turbines, Three New SCR Units, and One New Aqueous Ammonia Storage Tank at Facility 3

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

PAR 1135 - Boiler (3) to Turbine (3) Repower
South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1.00	1000sqft	0.02	15,000.00	0
Other Asphalt Surfaces	1.00	1000sqft	0.02	85,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	12			Operational Year	2021
Utility Company	Glendale Water & Power				
CO2 Intensity (lb/MW hr)	1115.33	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

Project Characteristics -

Land Use - Land Use - Most building footprints are occupied by non-populated structures, such as turbines, ammonia tanks, etc.

Construction Phase - Estimated Construction Schedule.

Off-road Equipment - Off-Road Equipment - Air Compressors (1): 4 Hours Per Day

Off-road Equipment - Off-Road Equipment - Demolition: Cranes (1): 3 Hours Per Day; Excavators (2): 3 Hours Per Day; Forklifts (2): 2 Hours Per Day; Other General Industrial Equipment (2): 2 Hour Per Day; Graders (1): 1 Hour Per Day; Rollers (1): 1 Hour Per Day; Rubber Tired Dozers (2): 2 Hours Per Day; Tractors/Loaders/Backhoes (2): 4 Hours Per Day; Tractors/Loaders/Backhoes (2): 2 Hours Per Day

Off-road Equipment - Off-Road Equipment - No Site Preparation

Off-road Equipment - Off-Road Equipment - Grading: Excavators (2): 3 Hours Per Day; Graders (1): 4 Hours Per Day; Rollers (1): 4 Hours Per Day; Tractors/Loaders/Backhoes (1): 4 Hours Per Day; Tractors/Loaders/Backhoes (2): 3 Hours Per Day; Rubber Tired Dozers (1): 4 Hours Per Day

Off-road Equipment - Off-Road Equipment - Const.: Welders (1): 4 Hours/Day; Tract/Load/Back (1): 1 Hour/Day; Rubber Tired Loaders (2): 2 Hours/Day; Cranes (2): 3 Hours/Day; Cranes (2): 1 Hour/Day; Welders (1): 4 Hours/Day; Tract/Load/Back (2): 1 Hours/Day; Rubber Tired Loaders (1): 2 Hours/Day; Rollers (1): 1 Hour/Day; Excavators (2): 1 Hour/Day; Cranes (2): 1 Hour/Day; Rollers (1): 1 Hour/Day

Off-road Equipment - Off-Road Equipment - Paving: Aerial Lifts (1): 1 Hour Per Day; Cranes (1): 4 Hours Per Day; Forklifts (1): 3 Hours Per Day; Pavers (2): 5 Hours Per Day; Paving Equipment (2): 5 Hours Per Day; Rollers (2): 5 Hours Per Day

Grading - No Site Preparation, Acres of Grading (4)

Demolition -

Trips and VMT - Worker, Vendor, Haul Trips Estimated Based on FIER Grayson Repowering Project and modified for compliance with PAR 1135.

Architectural Coating - Architectural Coating Estimated.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	7,500.00	36,000.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	22,500.00	12,000.00
tblArchitecturalCoating	ConstArea_Parking	5,100.00	0.00
tblArchitecturalCoating	EF_Parking	100.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	50.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	50.00	0.00
tblConstructionPhase	NumDays	10.00	150.00
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	NumDays	2.00	30.00

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

tblConstructionPhase	NumDays	100.00	300.00
tblConstructionPhase	NumDays	5.00	14.00
tblConstructionPhase	NumDays	5.00	14.00
tblConstructionPhase	PhaseEndDate	12/14/2018	6/28/2019
tblConstructionPhase	PhaseEndDate	12/17/2018	12/1/2018
tblConstructionPhase	PhaseEndDate	12/19/2018	8/9/2019
tblConstructionPhase	PhaseEndDate	5/8/2019	10/23/2020
tblConstructionPhase	PhaseEndDate	5/15/2019	12/18/2020
tblConstructionPhase	PhaseEndDate	5/22/2019	11/19/2020
tblConstructionPhase	PhaseStartDate	12/15/2018	12/1/2018
tblConstructionPhase	PhaseStartDate	12/18/2018	7/1/2019
tblConstructionPhase	PhaseStartDate	12/20/2018	9/1/2019
tblConstructionPhase	PhaseStartDate	5/9/2019	12/1/2020
tblConstructionPhase	PhaseStartDate	5/16/2019	11/1/2020
tblGrading	AcresOfGrading	7.50	4.00
tblGrading	MaterialMoistureContentBulldozing	7.90	0.00
tblGrading	MaterialMoistureContentTruckLoading	12.00	0.00
tblGrading	MaterialSiltContent	6.90	0.00
tblGrading	MeanVehicleSpeed	7.10	0.00
tblLandUse	LandUseSquareFeet	1,000.00	15,000.00
tblLandUse	LandUseSquareFeet	1,000.00	85,000.00
tblOffRoadEquipment	HorsePower	63.00	9.00
tblOffRoadEquipment	HorsePower	158.00	81.00
tblOffRoadEquipment	HorsePower	46.00	35.00
tblOffRoadEquipment	HorsePower	97.00	79.00
tblOffRoadEquipment	HorsePower	78.00	0.00
tblOffRoadEquipment	HorsePower	203.00	147.00

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

tbloffRoadEquipment	HorsePower	187.00	0.00
tbloffRoadEquipment	HorsePower	231.00	130.00
tbloffRoadEquipment	HorsePower	89.00	80.00
tbloffRoadEquipment	HorsePower	158.00	247.00
tbloffRoadEquipment	HorsePower	187.00	247.00
tbloffRoadEquipment	HorsePower	231.00	97.00
tbloffRoadEquipment	HorsePower	231.00	250.00
tbloffRoadEquipment	HorsePower	89.00	97.00
tbloffRoadEquipment	HorsePower	88.00	97.00
tbloffRoadEquipment	HorsePower	80.00	97.00
tbloffRoadEquipment	HorsePower	97.00	200.00
tbloffRoadEquipment	HorsePower	130.00	97.00
tbloffRoadEquipment	HorsePower	97.00	0.00
tbloffRoadEquipment	HorsePower	97.00	200.00
tbloffRoadEquipment	HorsePower	46.00	38.00
tbloffRoadEquipment	HorsePower	78.00	0.00
tbloffRoadEquipment	HorsePower	203.00	140.00
tbloffRoadEquipment	HorsePower	158.00	99.00
tbloffRoadEquipment	HorsePower	231.00	500.00
tbloffRoadEquipment	HorsePower	80.00	65.00
tbloffRoadEquipment	HorsePower	172.00	350.00
tbloffRoadEquipment	LoadFactor	0.31	0.56
tbloffRoadEquipment	LoadFactor	0.29	0.73
tbloffRoadEquipment	LoadFactor	0.38	0.73
tbloffRoadEquipment	LoadFactor	0.45	0.29
tbloffRoadEquipment	LoadFactor	0.37	0.29
tbloffRoadEquipment	LoadFactor	0.48	0.00

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

tbloffRoadEquipment	LoadFactor	0.36	0.20
tbloffRoadEquipment	LoadFactor	0.41	0.00
tbloffRoadEquipment	LoadFactor	0.29	0.42
tbloffRoadEquipment	LoadFactor	0.20	0.38
tbloffRoadEquipment	LoadFactor	0.38	0.40
tbloffRoadEquipment	LoadFactor	0.41	0.40
tbloffRoadEquipment	LoadFactor	0.29	0.37
tbloffRoadEquipment	LoadFactor	0.29	0.37
tbloffRoadEquipment	LoadFactor	0.20	0.37
tbloffRoadEquipment	LoadFactor	0.34	0.37
tbloffRoadEquipment	LoadFactor	0.38	0.37
tbloffRoadEquipment	LoadFactor	0.42	0.37
tbloffRoadEquipment	LoadFactor	0.37	0.00
tbloffRoadEquipment	LoadFactor	0.37	0.37
tbloffRoadEquipment	LoadFactor	0.40	0.40
tbloffRoadEquipment	LoadFactor	0.48	0.00
tbloffRoadEquipment	LoadFactor	0.36	0.36
tbloffRoadEquipment	LoadFactor	0.38	0.38
tbloffRoadEquipment	OffRoadEquipmentType	Concrete/Industrial Saws	Cranes
tbloffRoadEquipment	OffRoadEquipmentType		Graders
tbloffRoadEquipment	OffRoadEquipmentType		Rollers
tbloffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tbloffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tbloffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Excavators
tbloffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Forklifts
tbloffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Other General Industrial Equipment
tbloffRoadEquipment	OffRoadEquipmentType	Concrete/Industrial Saws	Excavators

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

tbloffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tbloffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tbloffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Graders
tbloffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Rollers
tbloffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tbloffRoadEquipment	OffRoadEquipmentType	Cranes	Welders
tbloffRoadEquipment	OffRoadEquipmentType	Cranes	Air Compressors
tbloffRoadEquipment	OffRoadEquipmentType		Welders
tbloffRoadEquipment	OffRoadEquipmentType	Forklifts	Rubber Tired Loaders
tbloffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tbloffRoadEquipment	OffRoadEquipmentType		Air Compressors
tbloffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tbloffRoadEquipment	OffRoadEquipmentType		Rollers
tbloffRoadEquipment	OffRoadEquipmentType		Excavators
tbloffRoadEquipment	OffRoadEquipmentType	Cement and Mortar Mixers	Aerial Lifts
tbloffRoadEquipment	OffRoadEquipmentType		Cranes
tbloffRoadEquipment	OffRoadEquipmentType		Rollers
tbloffRoadEquipment	OffRoadEquipmentType	Pavers	Cranes
tbloffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tbloffRoadEquipment	OffRoadEquipmentType	Rollers	Forklifts
tbloffRoadEquipment	OffRoadEquipmentType		Paving Equipment
tbloffRoadEquipment	OffRoadEquipmentType		Rollers
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	4.00	3.00
tblOffRoadEquipment	UsageHours	4.00	1.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	7.00	5.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	1.00	3.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	6.00	3.00
tblOffRoadEquipment	UsageHours	6.00	3.00
tblOffRoadEquipment	UsageHours	1.00	4.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblOffRoadEquipment	UsageHours	4.00	1.00
tblOffRoadEquipment	UsageHours	7.00	5.00
tblTripsAndVMT	HaulingTripNumber	318.00	4,200.00
tblTripsAndVMT	HaulingTripNumber	0.00	3,000.00
tblTripsAndVMT	HaulingTripNumber	0.00	3,700.00
tblTripsAndVMT	HaulingTripNumber	0.00	220.00
tblTripsAndVMT	VendorTripNumber	0.00	3.00
tblTripsAndVMT	VendorTripNumber	16.00	8.00

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

tblTripsAndVMT	VendorTripNumber	0.00	3.00
tblTripsAndVMT	WorkerTripNumber	40.00	68.00
tblTripsAndVMT	WorkerTripNumber	23.00	15.00
tblTripsAndVMT	WorkerTripNumber	42.00	200.00
tblTripsAndVMT	WorkerTripNumber	35.00	10.00
tblTripsAndVMT	WorkerTripNumber	8.00	4.00

2.0 Emissions Summary

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.0398	0.4526	0.2341	7.1000e-004	0.0413	0.0183	0.0596	9.9900e-003	0.0171	0.0271	0.0000	65.6991	65.6991	0.0114	0.0000	65.9839
2019	0.3954	4.3015	2.6155	8.2100e-003	0.3132	0.1618	0.4751	0.0926	0.1508	0.2433	0.0000	760.7670	760.7670	0.1152	0.0000	763.6478
2020	0.4080	2.3225	2.2733	5.8700e-003	0.2717	0.1013	0.3730	0.0724	0.0938	0.1662	0.0000	531.9443	531.9443	0.0741	0.0000	533.7958
Maximum	0.4080	4.3015	2.6155	8.2100e-003	0.3132	0.1618	0.4751	0.0926	0.1508	0.2433	0.0000	760.7670	760.7670	0.1152	0.0000	763.6478

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.0398	0.4526	0.2341	7.1000e-004	0.0413	0.0183	0.0596	9.9900e-003	0.0171	0.0271	0.0000	65.6990	65.6990	0.0114	0.0000	65.9839
2019	0.3954	4.3015	2.6155	8.2100e-003	0.3132	0.1618	0.4751	0.0926	0.1508	0.2433	0.0000	760.7666	760.7666	0.1152	0.0000	763.6474
2020	0.4080	2.3225	2.2733	5.8700e-003	0.2717	0.1013	0.3730	0.0724	0.0938	0.1662	0.0000	531.9441	531.9441	0.0741	0.0000	533.7955
Maximum	0.4080	4.3015	2.6155	8.2100e-003	0.3132	0.1618	0.4751	0.0926	0.1508	0.2433	0.0000	760.7666	760.7666	0.1152	0.0000	763.6474

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	12-1-2018	2-28-2019	1.4240	1.4240
2	3-1-2019	5-31-2019	1.4095	1.4095
3	6-1-2019	8-31-2019	1.1951	1.1951
4	9-1-2019	11-30-2019	0.8164	0.8164
5	12-1-2019	2-29-2020	0.7734	0.7734
6	3-1-2020	5-31-2020	0.7543	0.7543
7	6-1-2020	8-31-2020	0.7522	0.7522
8	9-1-2020	9-30-2020	0.2453	0.2453
		Highest	1.4240	1.4240

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0678	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005
Energy	1.4600e-003	0.0133	0.0112	8.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003	0.0000	98.7215	98.7215	2.4700e-003	7.2000e-004	98.9974
Mobile	1.8900e-003	0.0111	0.0285	1.1000e-004	8.8600e-003	9.0000e-005	8.9400e-003	2.3700e-003	8.0000e-005	2.4500e-003	0.0000	9.8824	9.8824	4.7000e-004	0.0000	9.8941
Waste						0.0000	0.0000		0.0000	0.0000	0.2517	0.0000	0.2517	0.0149	0.0000	0.6236
Water						0.0000	0.0000		0.0000	0.0000	0.0734	1.5233	1.5967	7.5700e-003	1.9000e-004	1.8415
Total	0.0712	0.0244	0.0397	1.9000e-004	8.8600e-003	1.1000e-003	9.9500e-003	2.3700e-003	1.0900e-003	3.4600e-003	0.3251	110.1272	110.4523	0.0254	9.1000e-004	111.3567

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0678	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005
Energy	1.4600e-003	0.0133	0.0112	8.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003	0.0000	98.7215	98.7215	2.4700e-003	7.2000e-004	98.9974
Mobile	1.8900e-003	0.0111	0.0285	1.1000e-004	8.8600e-003	9.0000e-005	8.9400e-003	2.3700e-003	8.0000e-005	2.4500e-003	0.0000	9.8824	9.8824	4.7000e-004	0.0000	9.8941
Waste						0.0000	0.0000		0.0000	0.0000	0.2517	0.0000	0.2517	0.0149	0.0000	0.6236
Water						0.0000	0.0000		0.0000	0.0000	0.0734	1.5233	1.5967	7.5700e-003	1.9000e-004	1.8415
Total	0.0712	0.0244	0.0397	1.9000e-004	8.8600e-003	1.1000e-003	9.9500e-003	2.3700e-003	1.0900e-003	3.4600e-003	0.3251	110.1272	110.4523	0.0254	9.1000e-004	111.3567

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	12/1/2018	6/28/2019	5	150	Demolition of affected existing power generating units
2	Site Preparation	Site Preparation	12/1/2018	12/1/2018	5	0	No site preparation activity
3	Grading	Grading	7/1/2019	8/9/2019	5	30	Grading Activity
4	Building Construction	Building Construction	9/1/2019	10/23/2020	5	300	Include site mobilization, equipment, electric conduit, cable
5	Paving	Paving	12/1/2020	12/18/2020	5	14	Paving activity occurs during the commissioning period
6	Architectural Coating	Architectural Coating	11/1/2020	11/19/2020	5	14	Coating Activity is estimated

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0.02

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 12,000; Non-Residential Outdoor: 36,000; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Cranes	1	3.00	231	0.73
Demolition	Graders	1	1.00	187	0.41
Demolition	Rollers	1	1.00	80	0.38
Demolition	Rubber Tired Dozers	2	3.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	4.00	97	0.37
Demolition	Excavators	2	3.00	247	0.40
Demolition	Forklifts	2	2.00	97	0.37
Demolition	Other General Industrial Equipment	2	2.00	97	0.37
Site Preparation	Graders	0	0.00	0	0.00
Site Preparation	Tractors/Loaders/Backhoes	0	0.00	0	0.00

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

Grading	Excavators	2	3.00	81	0.73
Demolition	Tractors/Loaders/Backhoes	2	3.00	200	0.37
Grading	Tractors/Loaders/Backhoes	2	3.00	97	0.37
Grading	Graders	1	4.00	247	0.40
Grading	Rollers	1	4.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	4.00	200	0.37
Grading	Rubber Tired Dozers	1	4.00	247	0.40
Building Construction	Welders	1	4.00	35	0.29
Building Construction	Tractors/Loaders/Backhoes	1	1.00	79	0.29
Building Construction	Air Compressors	0	0.00	0	0.00
Building Construction	Welders	1	4.00	38	0.45
Building Construction	Rubber Tired Loaders	2	2.00	147	0.20
Building Construction	Tractors/Loaders/Backhoes	2	1.00	97	0.37
Building Construction	Air Compressors	0	0.00	0	0.00
Building Construction	Rubber Tired Loaders	1	2.00	140	0.36
Building Construction	Rollers	1	1.00	80	0.38
Building Construction	Cranes	2	3.00	97	0.37
Building Construction	Cranes	2	1.00	250	0.37
Building Construction	Excavators	2	1.00	99	0.38
Paving	Aerial Lifts	1	1.00	9	0.56
Building Construction	Cranes	2	1.00	500	0.29
Building Construction	Rollers	1	1.00	65	0.38
Paving	Cranes	1	4.00	130	0.42
Building Construction	Other Construction Equipment	2	1.00	350	0.42
Paving	Forklifts	1	3.00	80	0.38
Paving	Pavers	2	5.00	97	0.37
Architectural Coating	Air Compressors	1	4.00	78	0.48

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

Paving	Paving Equipment	2	5.00	132	0.36
Paving	Rollers	2	5.00	80	0.38
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Forklifts	2	6.00	89	0.20
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	16	68.00	3.00	4,200.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	9	15.00	0.00	3,000.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	22	200.00	8.00	3,700.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	14	10.00	3.00	220.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.8200e-003	0.0000	4.8200e-003	7.3000e-004	0.0000	7.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0333	0.3521	0.1824	3.8000e-004		0.0179	0.0179		0.0167	0.0167	0.0000	34.7180	34.7180	9.4900e-003	0.0000	34.9552
Total	0.0333	0.3521	0.1824	3.8000e-004	4.8200e-003	0.0179	0.0227	7.3000e-004	0.0167	0.0174	0.0000	34.7180	34.7180	9.4900e-003	0.0000	34.9552

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.5800e-003	0.0935	0.0174	2.3000e-004	0.0284	3.5000e-004	0.0288	7.1200e-003	3.4000e-004	7.4600e-003	0.0000	22.6794	22.6794	1.5900e-003	0.0000	22.7193
Vendor	1.4000e-004	3.8900e-003	1.0000e-003	1.0000e-005	2.0000e-004	3.0000e-005	2.3000e-004	6.0000e-005	3.0000e-005	8.0000e-005	0.0000	0.7868	0.7868	6.0000e-005	0.0000	0.7882
Worker	3.7900e-003	3.1000e-003	0.0333	8.0000e-005	7.8300e-003	6.0000e-005	7.9000e-003	2.0800e-003	6.0000e-005	2.1400e-003	0.0000	7.5149	7.5149	2.6000e-004	0.0000	7.5213
Total	6.5100e-003	0.1004	0.0517	3.2000e-004	0.0365	4.4000e-004	0.0369	9.2600e-003	4.3000e-004	9.6800e-003	0.0000	30.9811	30.9811	1.9100e-003	0.0000	31.0288

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

3.2 Demolition - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.8200e-003	0.0000	4.8200e-003	7.3000e-004	0.0000	7.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0333	0.3521	0.1824	3.8000e-004		0.0179	0.0179		0.0167	0.0167	0.0000	34.7180	34.7180	9.4900e-003	0.0000	34.9552
Total	0.0333	0.3521	0.1824	3.8000e-004	4.8200e-003	0.0179	0.0227	7.3000e-004	0.0167	0.0174	0.0000	34.7180	34.7180	9.4900e-003	0.0000	34.9552

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.5800e-003	0.0935	0.0174	2.3000e-004	0.0284	3.5000e-004	0.0288	7.1200e-003	3.4000e-004	7.4600e-003	0.0000	22.6794	22.6794	1.5900e-003	0.0000	22.7193
Vendor	1.4000e-004	3.8900e-003	1.0000e-003	1.0000e-005	2.0000e-004	3.0000e-005	2.3000e-004	6.0000e-005	3.0000e-005	8.0000e-005	0.0000	0.7868	0.7868	6.0000e-005	0.0000	0.7882
Worker	3.7900e-003	3.1000e-003	0.0333	8.0000e-005	7.8300e-003	6.0000e-005	7.9000e-003	2.0800e-003	6.0000e-005	2.1400e-003	0.0000	7.5149	7.5149	2.6000e-004	0.0000	7.5213
Total	6.5100e-003	0.1004	0.0517	3.2000e-004	0.0365	4.4000e-004	0.0369	9.2600e-003	4.3000e-004	9.6800e-003	0.0000	30.9811	30.9811	1.9100e-003	0.0000	31.0288

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

3.2 Demolition - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0296	0.0000	0.0296	4.4900e-003	0.0000	4.4900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1879	1.9755	1.0921	2.3600e-003		0.0981	0.0981		0.0914	0.0914	0.0000	210.3119	210.3119	0.0580	0.0000	211.7621
Total	0.1879	1.9755	1.0921	2.3600e-003	0.0296	0.0981	0.1277	4.4900e-003	0.0914	0.0959	0.0000	210.3119	210.3119	0.0580	0.0000	211.7621

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0150	0.5425	0.1042	1.4100e-003	0.0349	1.9700e-003	0.0368	9.4600e-003	1.8800e-003	0.0113	0.0000	137.6830	137.6830	9.6500e-003	0.0000	137.9243
Vendor	7.6000e-004	0.0226	5.6600e-003	5.0000e-005	1.2200e-003	1.5000e-004	1.3700e-003	3.5000e-004	1.4000e-004	4.9000e-004	0.0000	4.7905	4.7905	3.3000e-004	0.0000	4.7988
Worker	0.0212	0.0168	0.1829	4.9000e-004	0.0481	3.8000e-004	0.0485	0.0128	3.5000e-004	0.0131	0.0000	44.7062	44.7062	1.4000e-003	0.0000	44.7411
Total	0.0370	0.5819	0.2928	1.9500e-003	0.0842	2.5000e-003	0.0867	0.0226	2.3700e-003	0.0250	0.0000	187.1797	187.1797	0.0114	0.0000	187.4642

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

3.2 Demolition - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0296	0.0000	0.0296	4.4900e-003	0.0000	4.4900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1879	1.9755	1.0921	2.3600e-003		0.0981	0.0981		0.0914	0.0914	0.0000	210.3116	210.3116	0.0580	0.0000	211.7618
Total	0.1879	1.9755	1.0921	2.3600e-003	0.0296	0.0981	0.1277	4.4900e-003	0.0914	0.0959	0.0000	210.3116	210.3116	0.0580	0.0000	211.7618

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0150	0.5425	0.1042	1.4100e-003	0.0349	1.9700e-003	0.0368	9.4600e-003	1.8800e-003	0.0113	0.0000	137.6830	137.6830	9.6500e-003	0.0000	137.9243
Vendor	7.6000e-004	0.0226	5.6600e-003	5.0000e-005	1.2200e-003	1.5000e-004	1.3700e-003	3.5000e-004	1.4000e-004	4.9000e-004	0.0000	4.7905	4.7905	3.3000e-004	0.0000	4.7988
Worker	0.0212	0.0168	0.1829	4.9000e-004	0.0481	3.8000e-004	0.0485	0.0128	3.5000e-004	0.0131	0.0000	44.7062	44.7062	1.4000e-003	0.0000	44.7411
Total	0.0370	0.5819	0.2928	1.9500e-003	0.0842	2.5000e-003	0.0867	0.0226	2.3700e-003	0.0250	0.0000	187.1797	187.1797	0.0114	0.0000	187.4642

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

3.3 Site Preparation - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

3.4 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0473	0.0000	0.0473	0.0251	0.0000	0.0251	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0309	0.3233	0.2010	3.8000e-004		0.0164	0.0164		0.0153	0.0153	0.0000	34.0925	34.0925	8.8000e-003	0.0000	34.3126
Total	0.0309	0.3233	0.2010	3.8000e-004	0.0473	0.0164	0.0637	0.0251	0.0153	0.0404	0.0000	34.0925	34.0925	8.8000e-003	0.0000	34.3126

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0125	0.4506	0.0866	1.1700e-003	0.0258	1.6300e-003	0.0274	7.0800e-003	1.5600e-003	8.6400e-003	0.0000	114.3547	114.3547	8.0200e-003	0.0000	114.5551
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0900e-003	8.6000e-004	9.3800e-003	3.0000e-005	2.4700e-003	2.0000e-005	2.4900e-003	6.6000e-004	2.0000e-005	6.7000e-004	0.0000	2.2934	2.2934	7.0000e-005	0.0000	2.2952
Total	0.0136	0.4514	0.0960	1.2000e-003	0.0283	1.6500e-003	0.0299	7.7400e-003	1.5800e-003	9.3100e-003	0.0000	116.6481	116.6481	8.0900e-003	0.0000	116.8503

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

3.4 Grading - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0473	0.0000	0.0473	0.0251	0.0000	0.0251	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0309	0.3233	0.2010	3.8000e-004		0.0164	0.0164		0.0153	0.0153	0.0000	34.0925	34.0925	8.8000e-003	0.0000	34.3125
Total	0.0309	0.3233	0.2010	3.8000e-004	0.0473	0.0164	0.0637	0.0251	0.0153	0.0404	0.0000	34.0925	34.0925	8.8000e-003	0.0000	34.3125

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0125	0.4506	0.0866	1.1700e-003	0.0258	1.6300e-003	0.0274	7.0800e-003	1.5600e-003	8.6400e-003	0.0000	114.3547	114.3547	8.0200e-003	0.0000	114.5551
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0900e-003	8.6000e-004	9.3800e-003	3.0000e-005	2.4700e-003	2.0000e-005	2.4900e-003	6.6000e-004	2.0000e-005	6.7000e-004	0.0000	2.2934	2.2934	7.0000e-005	0.0000	2.2952
Total	0.0136	0.4514	0.0960	1.2000e-003	0.0283	1.6500e-003	0.0299	7.7400e-003	1.5800e-003	9.3100e-003	0.0000	116.6481	116.6481	8.0900e-003	0.0000	116.8503

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0783	0.7344	0.5298	8.4000e-004		0.0416	0.0416		0.0385	0.0385	0.0000	74.3401	74.3401	0.0227	0.0000	74.9080
Total	0.0783	0.7344	0.5298	8.4000e-004		0.0416	0.0416		0.0385	0.0385	0.0000	74.3401	74.3401	0.0227	0.0000	74.9080

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.4600e-003	0.1612	0.0310	4.2000e-004	0.0262	5.8000e-004	0.0268	6.7000e-003	5.6000e-004	7.2600e-003	0.0000	40.9009	40.9009	2.8700e-003	0.0000	40.9725
Vendor	1.3700e-003	0.0406	0.0102	9.0000e-005	2.1900e-003	2.7000e-004	2.4600e-003	6.3000e-004	2.5000e-004	8.9000e-004	0.0000	8.6155	8.6155	6.0000e-004	0.0000	8.6304
Worker	0.0420	0.0334	0.3627	9.8000e-004	0.0955	7.6000e-004	0.0962	0.0254	7.0000e-004	0.0261	0.0000	88.6784	88.6784	2.7700e-003	0.0000	88.7477
Total	0.0479	0.2351	0.4039	1.4900e-003	0.1239	1.6100e-003	0.1255	0.0327	1.5100e-003	0.0342	0.0000	138.1947	138.1947	6.2400e-003	0.0000	138.3506

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

3.5 Building Construction - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0783	0.7344	0.5298	8.4000e-004		0.0416	0.0416		0.0385	0.0385	0.0000	74.3401	74.3401	0.0227	0.0000	74.9080
Total	0.0783	0.7344	0.5298	8.4000e-004		0.0416	0.0416		0.0385	0.0385	0.0000	74.3401	74.3401	0.0227	0.0000	74.9080

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.4600e-003	0.1612	0.0310	4.2000e-004	0.0262	5.8000e-004	0.0268	6.7000e-003	5.6000e-004	7.2600e-003	0.0000	40.9009	40.9009	2.8700e-003	0.0000	40.9725
Vendor	1.3700e-003	0.0406	0.0102	9.0000e-005	2.1900e-003	2.7000e-004	2.4600e-003	6.3000e-004	2.5000e-004	8.9000e-004	0.0000	8.6155	8.6155	6.0000e-004	0.0000	8.6304
Worker	0.0420	0.0334	0.3627	9.8000e-004	0.0955	7.6000e-004	0.0962	0.0254	7.0000e-004	0.0261	0.0000	88.6784	88.6784	2.7700e-003	0.0000	88.7477
Total	0.0479	0.2351	0.4039	1.4900e-003	0.1239	1.6100e-003	0.1255	0.0327	1.5100e-003	0.0342	0.0000	138.1947	138.1947	6.2400e-003	0.0000	138.3506

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1751	1.6424	1.2554	2.0600e-003		0.0908	0.0908		0.0841	0.0841	0.0000	178.3523	178.3523	0.0554	0.0000	179.7364
Total	0.1751	1.6424	1.2554	2.0600e-003		0.0908	0.0908		0.0841	0.0841	0.0000	178.3523	178.3523	0.0554	0.0000	179.7364

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0101	0.3686	0.0735	1.0100e-003	0.0295	1.1600e-003	0.0307	7.9000e-003	1.1100e-003	9.0100e-003	0.0000	99.1220	99.1220	6.8300e-003	0.0000	99.2927
Vendor	2.8500e-003	0.0909	0.0225	2.2000e-004	5.3700e-003	4.5000e-004	5.8200e-003	1.5500e-003	4.3000e-004	1.9800e-003	0.0000	20.9551	20.9551	1.3800e-003	0.0000	20.9895
Worker	0.0951	0.0729	0.8067	2.3300e-003	0.2337	1.8100e-003	0.2355	0.0621	1.6600e-003	0.0637	0.0000	210.3729	210.3729	6.0400e-003	0.0000	210.5238
Total	0.1080	0.5324	0.9027	3.5600e-003	0.2686	3.4200e-003	0.2720	0.0715	3.2000e-003	0.0747	0.0000	330.4499	330.4499	0.0143	0.0000	330.8060

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

3.5 Building Construction - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1751	1.6424	1.2554	2.0600e-003		0.0908	0.0908		0.0841	0.0841	0.0000	178.3521	178.3521	0.0554	0.0000	179.7362
Total	0.1751	1.6424	1.2554	2.0600e-003		0.0908	0.0908		0.0841	0.0841	0.0000	178.3521	178.3521	0.0554	0.0000	179.7362

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0101	0.3686	0.0735	1.0100e-003	0.0295	1.1600e-003	0.0307	7.9000e-003	1.1100e-003	9.0100e-003	0.0000	99.1220	99.1220	6.8300e-003	0.0000	99.2927
Vendor	2.8500e-003	0.0909	0.0225	2.2000e-004	5.3700e-003	4.5000e-004	5.8200e-003	1.5500e-003	4.3000e-004	1.9800e-003	0.0000	20.9551	20.9551	1.3800e-003	0.0000	20.9895
Worker	0.0951	0.0729	0.8067	2.3300e-003	0.2337	1.8100e-003	0.2355	0.0621	1.6600e-003	0.0637	0.0000	210.3729	210.3729	6.0400e-003	0.0000	210.5238
Total	0.1080	0.5324	0.9027	3.5600e-003	0.2686	3.4200e-003	0.2720	0.0715	3.2000e-003	0.0747	0.0000	330.4499	330.4499	0.0143	0.0000	330.8060

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

3.6 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0112	0.1064	0.0962	1.4000e-004		6.4300e-003	6.4300e-003		5.9400e-003	5.9400e-003	0.0000	12.1651	12.1651	3.7200e-003	0.0000	12.2582
Paving	3.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0112	0.1064	0.0962	1.4000e-004		6.4300e-003	6.4300e-003		5.9400e-003	5.9400e-003	0.0000	12.1651	12.1651	3.7200e-003	0.0000	12.2582

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.5000e-004	0.0309	6.1600e-003	8.0000e-005	1.8900e-003	1.0000e-004	1.9900e-003	5.2000e-004	9.0000e-005	6.1000e-004	0.0000	8.3010	8.3010	5.7000e-004	0.0000	8.3153
Vendor	7.0000e-005	2.2400e-003	5.6000e-004	1.0000e-005	1.3000e-004	1.0000e-005	1.4000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.5165	0.5165	3.0000e-005	0.0000	0.5174
Worker	3.1000e-004	2.4000e-004	2.6500e-003	1.0000e-005	7.7000e-004	1.0000e-005	7.7000e-004	2.0000e-004	1.0000e-005	2.1000e-004	0.0000	0.6914	0.6914	2.0000e-005	0.0000	0.6919
Total	1.2300e-003	0.0334	9.3700e-003	1.0000e-004	2.7900e-003	1.2000e-004	2.9000e-003	7.6000e-004	1.1000e-004	8.7000e-004	0.0000	9.5089	9.5089	6.2000e-004	0.0000	9.5246

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

3.6 Paving - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0112	0.1064	0.0962	1.4000e-004		6.4300e-003	6.4300e-003		5.9400e-003	5.9400e-003	0.0000	12.1651	12.1651	3.7200e-003	0.0000	12.2582
Paving	3.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0112	0.1064	0.0962	1.4000e-004		6.4300e-003	6.4300e-003		5.9400e-003	5.9400e-003	0.0000	12.1651	12.1651	3.7200e-003	0.0000	12.2582

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.5000e-004	0.0309	6.1600e-003	8.0000e-005	1.8900e-003	1.0000e-004	1.9900e-003	5.2000e-004	9.0000e-005	6.1000e-004	0.0000	8.3010	8.3010	5.7000e-004	0.0000	8.3153
Vendor	7.0000e-005	2.2400e-003	5.6000e-004	1.0000e-005	1.3000e-004	1.0000e-005	1.4000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.5165	0.5165	3.0000e-005	0.0000	0.5174
Worker	3.1000e-004	2.4000e-004	2.6500e-003	1.0000e-005	7.7000e-004	1.0000e-005	7.7000e-004	2.0000e-004	1.0000e-005	2.1000e-004	0.0000	0.6914	0.6914	2.0000e-005	0.0000	0.6919
Total	1.2300e-003	0.0334	9.3700e-003	1.0000e-004	2.7900e-003	1.2000e-004	2.9000e-003	7.6000e-004	1.1000e-004	8.7000e-004	0.0000	9.5089	9.5089	6.2000e-004	0.0000	9.5246

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1112					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1300e-003	7.8600e-003	8.5500e-003	1.0000e-005		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004	0.0000	1.1915	1.1915	9.0000e-005	0.0000	1.1938
Total	0.1124	7.8600e-003	8.5500e-003	1.0000e-005		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004	0.0000	1.1915	1.1915	9.0000e-005	0.0000	1.1938

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-004	1.0000e-004	1.0600e-003	0.0000	3.1000e-004	0.0000	3.1000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2766	0.2766	1.0000e-005	0.0000	0.2767
Total	1.2000e-004	1.0000e-004	1.0600e-003	0.0000	3.1000e-004	0.0000	3.1000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2766	0.2766	1.0000e-005	0.0000	0.2767

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

3.7 Architectural Coating - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1112					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1300e-003	7.8600e-003	8.5500e-003	1.0000e-005		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004	0.0000	1.1915	1.1915	9.0000e-005	0.0000	1.1938
Total	0.1124	7.8600e-003	8.5500e-003	1.0000e-005		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004	0.0000	1.1915	1.1915	9.0000e-005	0.0000	1.1938

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-004	1.0000e-004	1.0600e-003	0.0000	3.1000e-004	0.0000	3.1000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2766	0.2766	1.0000e-005	0.0000	0.2767
Total	1.2000e-004	1.0000e-004	1.0600e-003	0.0000	3.1000e-004	0.0000	3.1000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2766	0.2766	1.0000e-005	0.0000	0.2767

4.0 Operational Detail - Mobile

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.8900e-003	0.0111	0.0285	1.1000e-004	8.8600e-003	9.0000e-005	8.9400e-003	2.3700e-003	8.0000e-005	2.4500e-003	0.0000	9.8824	9.8824	4.7000e-004	0.0000	9.8941
Unmitigated	1.8900e-003	0.0111	0.0285	1.1000e-004	8.8600e-003	9.0000e-005	8.9400e-003	2.3700e-003	8.0000e-005	2.4500e-003	0.0000	9.8824	9.8824	4.7000e-004	0.0000	9.8941

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	6.97	1.32	0.68	23,312	23,312
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	6.97	1.32	0.68	23,312	23,312

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.548858	0.043235	0.200706	0.120309	0.016131	0.005851	0.021034	0.033479	0.002070	0.001877	0.004817	0.000707	0.000925
Other Asphalt Surfaces	0.548858	0.043235	0.200706	0.120309	0.016131	0.005851	0.021034	0.033479	0.002070	0.001877	0.004817	0.000707	0.000925

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	84.2332	84.2332	2.1900e-003	4.5000e-004	84.4230
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	84.2332	84.2332	2.1900e-003	4.5000e-004	84.4230
NaturalGas Mitigated	1.4600e-003	0.0133	0.0112	8.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003	0.0000	14.4883	14.4883	2.8000e-004	2.7000e-004	14.5744
NaturalGas Unmitigated	1.4600e-003	0.0133	0.0112	8.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003	0.0000	14.4883	14.4883	2.8000e-004	2.7000e-004	14.5744

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	271500	1.4600e-003	0.0133	0.0112	8.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003	0.0000	14.4883	14.4883	2.8000e-004	2.7000e-004	14.5744
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		1.4600e-003	0.0133	0.0112	8.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003	0.0000	14.4883	14.4883	2.8000e-004	2.7000e-004	14.5744

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	271500	1.4600e-003	0.0133	0.0112	8.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003	0.0000	14.4883	14.4883	2.8000e-004	2.7000e-004	14.5744
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		1.4600e-003	0.0133	0.0112	8.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003	0.0000	14.4883	14.4883	2.8000e-004	2.7000e-004	14.5744

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	166500	84.2332	2.1900e-003	4.5000e-004	84.4230
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		84.2332	2.1900e-003	4.5000e-004	84.4230

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	166500	84.2332	2.1900e-003	4.5000e-004	84.4230
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		84.2332	2.1900e-003	4.5000e-004	84.4230

6.0 Area Detail

6.1 Mitigation Measures Area

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0678	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005
Unmitigated	0.0678	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	8.1300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0597					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005
Total	0.0678	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	8.1300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0597					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005
Total	0.0678	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.0000e-005	5.0000e-005	0.0000	0.0000	5.0000e-005

7.0 Water Detail

7.1 Mitigation Measures Water

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.5967	7.5700e-003	1.9000e-004	1.8415
Unmitigated	1.5967	7.5700e-003	1.9000e-004	1.8415

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0.23125 / 0	1.5967	7.5700e-003	1.9000e-004	1.8415
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		1.5967	7.5700e-003	1.9000e-004	1.8415

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0.23125 / 0	1.5967	7.5700e-003	1.9000e-004	1.8415
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		1.5967	7.5700e-003	1.9000e-004	1.8415

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.2517	0.0149	0.0000	0.6236
Unmitigated	0.2517	0.0149	0.0000	0.6236

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	1.24	0.2517	0.0149	0.0000	0.6236
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.2517	0.0149	0.0000	0.6236

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	1.24	0.2517	0.0149	0.0000	0.6236
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.2517	0.0149	0.0000	0.6236

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Annual

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

PAR 1135 - Boiler (3) to Turbine (3) Repower
South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1.00	1000sqft	0.02	15,000.00	0
Other Asphalt Surfaces	1.00	1000sqft	0.02	85,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	12			Operational Year	2021
Utility Company	Glendale Water & Power				
CO2 Intensity (lb/MW hr)	1115.33	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

Project Characteristics -

Land Use - Land Use - Most building footprints are occupied by non-populated structures, such as turbines, ammonia tanks, etc.

Construction Phase - Estimated Construction Schedule.

Off-road Equipment - Off-Road Equipment - Air Compressors (1): 4 Hours Per Day

Off-road Equipment - Off-Road Equipment - Demolition: Cranes (1): 3 Hours Per Day; Excavators (2): 3 Hours Per Day; Forklifts (2): 2 Hours Per Day; Other General Industrial Equipment (2): 2 Hour Per Day; Graders (1): 1 Hour Per Day; Rollers (1): 1 Hour Per Day; Rubber Tired Dozers (2): 2 Hours Per Day; Tractors/Loaders/Backhoes (2): 4 Hours Per Day; Tractors/Loaders/Backhoes (2): 2 Hours Per Day

Off-road Equipment - Off-Road Equipment - No Site Preparation

Off-road Equipment - Off-Road Equipment - Grading: Excavators (2): 3 Hours Per Day; Graders (1): 4 Hours Per Day; Rollers (1): 4 Hours Per Day; Tractors/Loaders/Backhoes (1): 4 Hours Per Day; Tractors/Loaders/Backhoes (2): 3 Hours Per Day; Rubber Tired Dozers (1): 4 Hours Per Day

Off-road Equipment - Off-Road Equipment - Const.: Welders (1): 4 Hours/Day; Tract/Load/Back (1): 1 Hour/Day; Rubber Tired Loaders (2): 2 Hours/Day; Cranes (2): 3 Hours/Day; Cranes (2): 1 Hour/Day; Welders (1): 4 Hours/Day; Tract/Load/Back (2): 1 Hours/Day; Rubber Tired Loaders (1): 2 Hours/Day; Rollers (1): 1 Hour/Day; Excavators (2): 1 Hour/Day; Cranes (2): 1 Hour/Day; Rollers (1): 1 Hour/Day

Off-road Equipment - Off-Road Equipment - Paving: Aerial Lifts (1): 1 Hour Per Day; Cranes (1): 4 Hours Per Day; Forklifts (1): 3 Hours Per Day; Pavers (2): 5 Hours Per Day; Paving Equipment (2): 5 Hours Per Day; Rollers (2): 5 Hours Per Day

Grading - No Site Preparation, Acres of Grading (4)

Demolition -

Trips and VMT - Worker, Vendor, Haul Trips Estimated Based on FIER Grayson Repowering Project and modified for compliance with PAR 1135.

Architectural Coating - Architectural Coating Estimated.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	7,500.00	36,000.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	22,500.00	12,000.00
tblArchitecturalCoating	ConstArea_Parking	5,100.00	0.00
tblArchitecturalCoating	EF_Parking	100.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	50.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	50.00	0.00
tblConstructionPhase	NumDays	10.00	150.00
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	NumDays	2.00	30.00

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

tblConstructionPhase	NumDays	100.00	300.00
tblConstructionPhase	NumDays	5.00	14.00
tblConstructionPhase	NumDays	5.00	14.00
tblConstructionPhase	PhaseEndDate	12/14/2018	6/28/2019
tblConstructionPhase	PhaseEndDate	12/17/2018	12/1/2018
tblConstructionPhase	PhaseEndDate	12/19/2018	8/9/2019
tblConstructionPhase	PhaseEndDate	5/8/2019	10/23/2020
tblConstructionPhase	PhaseEndDate	5/15/2019	12/18/2020
tblConstructionPhase	PhaseEndDate	5/22/2019	11/19/2020
tblConstructionPhase	PhaseStartDate	12/15/2018	12/1/2018
tblConstructionPhase	PhaseStartDate	12/18/2018	7/1/2019
tblConstructionPhase	PhaseStartDate	12/20/2018	9/1/2019
tblConstructionPhase	PhaseStartDate	5/9/2019	12/1/2020
tblConstructionPhase	PhaseStartDate	5/16/2019	11/1/2020
tblGrading	AcresOfGrading	7.50	4.00
tblGrading	MaterialMoistureContentBulldozing	7.90	0.00
tblGrading	MaterialMoistureContentTruckLoading	12.00	0.00
tblGrading	MaterialSiltContent	6.90	0.00
tblGrading	MeanVehicleSpeed	7.10	0.00
tblLandUse	LandUseSquareFeet	1,000.00	15,000.00
tblLandUse	LandUseSquareFeet	1,000.00	85,000.00
tblOffRoadEquipment	HorsePower	63.00	9.00
tblOffRoadEquipment	HorsePower	158.00	81.00
tblOffRoadEquipment	HorsePower	46.00	35.00
tblOffRoadEquipment	HorsePower	97.00	79.00
tblOffRoadEquipment	HorsePower	78.00	0.00
tblOffRoadEquipment	HorsePower	203.00	147.00

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

tbloffRoadEquipment	HorsePower	187.00	0.00
tbloffRoadEquipment	HorsePower	231.00	130.00
tbloffRoadEquipment	HorsePower	89.00	80.00
tbloffRoadEquipment	HorsePower	158.00	247.00
tbloffRoadEquipment	HorsePower	187.00	247.00
tbloffRoadEquipment	HorsePower	231.00	97.00
tbloffRoadEquipment	HorsePower	231.00	250.00
tbloffRoadEquipment	HorsePower	89.00	97.00
tbloffRoadEquipment	HorsePower	88.00	97.00
tbloffRoadEquipment	HorsePower	80.00	97.00
tbloffRoadEquipment	HorsePower	97.00	200.00
tbloffRoadEquipment	HorsePower	130.00	97.00
tbloffRoadEquipment	HorsePower	97.00	0.00
tbloffRoadEquipment	HorsePower	97.00	200.00
tbloffRoadEquipment	HorsePower	46.00	38.00
tbloffRoadEquipment	HorsePower	78.00	0.00
tbloffRoadEquipment	HorsePower	203.00	140.00
tbloffRoadEquipment	HorsePower	158.00	99.00
tbloffRoadEquipment	HorsePower	231.00	500.00
tbloffRoadEquipment	HorsePower	80.00	65.00
tbloffRoadEquipment	HorsePower	172.00	350.00
tbloffRoadEquipment	LoadFactor	0.31	0.56
tbloffRoadEquipment	LoadFactor	0.29	0.73
tbloffRoadEquipment	LoadFactor	0.38	0.73
tbloffRoadEquipment	LoadFactor	0.45	0.29
tbloffRoadEquipment	LoadFactor	0.37	0.29
tbloffRoadEquipment	LoadFactor	0.48	0.00

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

tbloffRoadEquipment	LoadFactor	0.36	0.20
tbloffRoadEquipment	LoadFactor	0.41	0.00
tbloffRoadEquipment	LoadFactor	0.29	0.42
tbloffRoadEquipment	LoadFactor	0.20	0.38
tbloffRoadEquipment	LoadFactor	0.38	0.40
tbloffRoadEquipment	LoadFactor	0.41	0.40
tbloffRoadEquipment	LoadFactor	0.29	0.37
tbloffRoadEquipment	LoadFactor	0.29	0.37
tbloffRoadEquipment	LoadFactor	0.20	0.37
tbloffRoadEquipment	LoadFactor	0.34	0.37
tbloffRoadEquipment	LoadFactor	0.38	0.37
tbloffRoadEquipment	LoadFactor	0.42	0.37
tbloffRoadEquipment	LoadFactor	0.37	0.00
tbloffRoadEquipment	LoadFactor	0.37	0.37
tbloffRoadEquipment	LoadFactor	0.40	0.40
tbloffRoadEquipment	LoadFactor	0.48	0.00
tbloffRoadEquipment	LoadFactor	0.36	0.36
tbloffRoadEquipment	LoadFactor	0.38	0.38
tbloffRoadEquipment	OffRoadEquipmentType	Concrete/Industrial Saws	Cranes
tbloffRoadEquipment	OffRoadEquipmentType		Graders
tbloffRoadEquipment	OffRoadEquipmentType		Rollers
tbloffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tbloffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tbloffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Excavators
tbloffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Forklifts
tbloffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Other General Industrial Equipment
tbloffRoadEquipment	OffRoadEquipmentType	Concrete/Industrial Saws	Excavators

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

tbloffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tbloffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tbloffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Graders
tbloffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Rollers
tbloffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tbloffRoadEquipment	OffRoadEquipmentType	Cranes	Welders
tbloffRoadEquipment	OffRoadEquipmentType	Cranes	Air Compressors
tbloffRoadEquipment	OffRoadEquipmentType		Welders
tbloffRoadEquipment	OffRoadEquipmentType	Forklifts	Rubber Tired Loaders
tbloffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tbloffRoadEquipment	OffRoadEquipmentType		Air Compressors
tbloffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tbloffRoadEquipment	OffRoadEquipmentType		Rollers
tbloffRoadEquipment	OffRoadEquipmentType		Excavators
tbloffRoadEquipment	OffRoadEquipmentType	Cement and Mortar Mixers	Aerial Lifts
tbloffRoadEquipment	OffRoadEquipmentType		Cranes
tbloffRoadEquipment	OffRoadEquipmentType		Rollers
tbloffRoadEquipment	OffRoadEquipmentType	Pavers	Cranes
tbloffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tbloffRoadEquipment	OffRoadEquipmentType	Rollers	Forklifts
tbloffRoadEquipment	OffRoadEquipmentType		Paving Equipment
tbloffRoadEquipment	OffRoadEquipmentType		Rollers
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	4.00	3.00
tblOffRoadEquipment	UsageHours	4.00	1.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	7.00	5.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	1.00	3.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	6.00	3.00
tblOffRoadEquipment	UsageHours	6.00	3.00
tblOffRoadEquipment	UsageHours	1.00	4.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblOffRoadEquipment	UsageHours	4.00	1.00
tblOffRoadEquipment	UsageHours	7.00	5.00
tblTripsAndVMT	HaulingTripNumber	318.00	4,200.00
tblTripsAndVMT	HaulingTripNumber	0.00	3,000.00
tblTripsAndVMT	HaulingTripNumber	0.00	3,700.00
tblTripsAndVMT	HaulingTripNumber	0.00	220.00
tblTripsAndVMT	VendorTripNumber	0.00	3.00
tblTripsAndVMT	VendorTripNumber	16.00	8.00

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

tblTripsAndVMT	VendorTripNumber	0.00	3.00
tblTripsAndVMT	WorkerTripNumber	40.00	68.00
tblTripsAndVMT	WorkerTripNumber	23.00	15.00
tblTripsAndVMT	WorkerTripNumber	42.00	200.00
tblTripsAndVMT	WorkerTripNumber	35.00	10.00
tblTripsAndVMT	WorkerTripNumber	8.00	4.00

2.0 Emissions Summary

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	3.7912	42.7850	22.4733	0.0679	4.0020	1.7451	5.7471	0.9689	1.6282	2.5971	0.0000	6,956.5235	6,956.5235	1.1941	0.0000	6,986.3756
2019	3.4871	50.7148	22.0752	0.1058	5.0676	1.5593	6.2681	2.1938	1.4542	3.3206	0.0000	11,150.6892	11,150.6892	1.2301	0.0000	11,181.4415
2020	16.0710	20.2255	20.8319	0.0539	2.5689	0.9341	3.4537	0.6830	0.8634	1.5023	0.0000	5,388.3400	5,388.3400	0.7220	0.0000	5,406.3907
Maximum	16.0710	50.7148	22.4733	0.1058	5.0676	1.7451	6.2681	2.1938	1.6282	3.3206	0.0000	11,150.6892	11,150.6892	1.2301	0.0000	11,181.4415

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	3.7912	42.7850	22.4733	0.0679	4.0020	1.7451	5.7471	0.9689	1.6282	2.5971	0.0000	6,956.5235	6,956.5235	1.1941	0.0000	6,986.3756
2019	3.4871	50.7148	22.0752	0.1058	5.0676	1.5593	6.2681	2.1938	1.4542	3.3206	0.0000	11,150.6892	11,150.6892	1.2301	0.0000	11,181.4415
2020	16.0710	20.2255	20.8319	0.0539	2.5689	0.9341	3.4537	0.6830	0.8634	1.5023	0.0000	5,388.3400	5,388.3400	0.7220	0.0000	5,406.3907
Maximum	16.0710	50.7148	22.4733	0.1058	5.0676	1.7451	6.2681	2.1938	1.6282	3.3206	0.0000	11,150.6892	11,150.6892	1.2301	0.0000	11,181.4415

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.3717	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Energy	8.0200e-003	0.0729	0.0613	4.4000e-004		5.5400e-003	5.5400e-003		5.5400e-003	5.5400e-003		87.5101	87.5101	1.6800e-003	1.6000e-003	88.0301
Mobile	0.0147	0.0770	0.2196	8.1000e-004	0.0656	6.3000e-004	0.0663	0.0176	5.9000e-004	0.0182		82.4797	82.4797	3.8100e-003		82.5749
Total	0.3944	0.1499	0.2811	1.2500e-003	0.0656	6.1700e-003	0.0718	0.0176	6.1300e-003	0.0237		169.9902	169.9902	5.4900e-003	1.6000e-003	170.6055

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.3717	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Energy	8.0200e-003	0.0729	0.0613	4.4000e-004		5.5400e-003	5.5400e-003		5.5400e-003	5.5400e-003		87.5101	87.5101	1.6800e-003	1.6000e-003	88.0301
Mobile	0.0147	0.0770	0.2196	8.1000e-004	0.0656	6.3000e-004	0.0663	0.0176	5.9000e-004	0.0182		82.4797	82.4797	3.8100e-003		82.5749
Total	0.3944	0.1499	0.2811	1.2500e-003	0.0656	6.1700e-003	0.0718	0.0176	6.1300e-003	0.0237		169.9902	169.9902	5.4900e-003	1.6000e-003	170.6055

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	12/1/2018	6/28/2019	5	150	Demolition of affected existing power generating units
2	Site Preparation	Site Preparation	12/1/2018	12/1/2018	5	0	No site preparation activity
3	Grading	Grading	7/1/2019	8/9/2019	5	30	Grading Activity
4	Building Construction	Building Construction	9/1/2019	10/23/2020	5	300	Include site mobilization, equipment, electric conduit, cable
5	Paving	Paving	12/1/2020	12/18/2020	5	14	Paving activity occurs during the commissioning period
6	Architectural Coating	Architectural Coating	11/1/2020	11/19/2020	5	14	Coating Activity is estimated

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0.02

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 12,000; Non-Residential Outdoor: 36,000; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Cranes	1	3.00	231	0.73
Demolition	Graders	1	1.00	187	0.41
Demolition	Rollers	1	1.00	80	0.38

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

Demolition	Rubber Tired Dozers	2	3.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	4.00	97	0.37
Demolition	Excavators	2	3.00	247	0.40
Demolition	Forklifts	2	2.00	97	0.37
Demolition	Other General Industrial Equipment	2	2.00	97	0.37
Site Preparation	Graders	0	0.00	0	0.00
Site Preparation	Tractors/Loaders/Backhoes	0	0.00	0	0.00
Grading	Excavators	2	3.00	81	0.73
Demolition	Tractors/Loaders/Backhoes	2	3.00	200	0.37
Grading	Tractors/Loaders/Backhoes	2	3.00	97	0.37
Grading	Graders	1	4.00	247	0.40
Grading	Rollers	1	4.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	4.00	200	0.37
Grading	Rubber Tired Dozers	1	4.00	247	0.40
Building Construction	Welders	1	4.00	35	0.29
Building Construction	Tractors/Loaders/Backhoes	1	1.00	79	0.29
Building Construction	Air Compressors	0	0.00	0	0.00
Building Construction	Welders	1	4.00	38	0.45
Building Construction	Rubber Tired Loaders	2	2.00	147	0.20
Building Construction	Tractors/Loaders/Backhoes	2	1.00	97	0.37
Building Construction	Air Compressors	0	0.00	0	0.00
Building Construction	Rubber Tired Loaders	1	2.00	140	0.36
Building Construction	Rollers	1	1.00	80	0.38
Building Construction	Cranes	2	3.00	97	0.37
Building Construction	Cranes	2	1.00	250	0.37
Building Construction	Excavators	2	1.00	99	0.38
Paving	Aerial Lifts	1	1.00	9	0.56

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

Building Construction	Cranes	2	1.00	500	0.29
Building Construction	Rollers	1	1.00	65	0.38
Paving	Cranes	1	4.00	130	0.42
Building Construction	Other Construction Equipment	2	1.00	350	0.42
Paving	Forklifts	1	3.00	80	0.38
Paving	Pavers	2	5.00	97	0.37
Architectural Coating	Air Compressors	1	4.00	78	0.48
Paving	Paving Equipment	2	5.00	132	0.36
Paving	Rollers	2	5.00	80	0.38
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Forklifts	2	6.00	89	0.20
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	16	68.00	3.00	4,200.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	9	15.00	0.00	3,000.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	22	200.00	8.00	3,700.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	14	10.00	3.00	220.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.4594	0.0000	0.4594	0.0696	0.0000	0.0696			0.0000			0.0000
Off-Road	3.1693	33.5375	17.3743	0.0366		1.7032	1.7032		1.5883	1.5883		3,644.7656	3,644.7656	0.9961		3,669.6668
Total	3.1693	33.5375	17.3743	0.0366	0.4594	1.7032	2.1626	0.0696	1.5883	1.6579		3,644.7656	3,644.7656	0.9961		3,669.6668

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2428	8.6212	1.5965	0.0223	2.7633	0.0332	2.7965	0.6923	0.0317	0.7240		2,399.0013	2,399.0013	0.1641		2,403.1033
Vendor	0.0128	0.3636	0.0905	7.9000e-004	0.0192	2.6600e-003	0.0219	5.5300e-003	2.5400e-003	8.0700e-003		83.5974	83.5974	5.6900e-003		83.7397
Worker	0.3664	0.2627	3.4120	8.3300e-003	0.7601	6.0600e-003	0.7661	0.2016	5.5800e-003	0.2072		829.1591	829.1591	0.0283		829.8659
Total	0.6219	9.2474	5.0990	0.0314	3.5426	0.0419	3.5845	0.8994	0.0398	0.9392		3,311.7579	3,311.7579	0.1980		3,316.7089

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

3.2 Demolition - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.4594	0.0000	0.4594	0.0696	0.0000	0.0696			0.0000			0.0000
Off-Road	3.1693	33.5375	17.3743	0.0366		1.7032	1.7032		1.5883	1.5883	0.0000	3,644.7656	3,644.7656	0.9961		3,669.6668
Total	3.1693	33.5375	17.3743	0.0366	0.4594	1.7032	2.1626	0.0696	1.5883	1.6579	0.0000	3,644.7656	3,644.7656	0.9961		3,669.6668

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2428	8.6212	1.5965	0.0223	2.7633	0.0332	2.7965	0.6923	0.0317	0.7240		2,399.0013	2,399.0013	0.1641		2,403.1033
Vendor	0.0128	0.3636	0.0905	7.9000e-004	0.0192	2.6600e-003	0.0219	5.5300e-003	2.5400e-003	8.0700e-003		83.5974	83.5974	5.6900e-003		83.7397
Worker	0.3664	0.2627	3.4120	8.3300e-003	0.7601	6.0600e-003	0.7661	0.2016	5.5800e-003	0.2072		829.1591	829.1591	0.0283		829.8659
Total	0.6219	9.2474	5.0990	0.0314	3.5426	0.0419	3.5845	0.8994	0.0398	0.9392		3,311.7579	3,311.7579	0.1980		3,316.7089

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

3.2 Demolition - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.4594	0.0000	0.4594	0.0696	0.0000	0.0696			0.0000			0.0000
Off-Road	2.9124	30.6280	16.9310	0.0366		1.5209	1.5209		1.4176	1.4176		3,594.2503	3,594.2503	0.9914		3,619.0349
Total	2.9124	30.6280	16.9310	0.0366	0.4594	1.5209	1.9803	0.0696	1.4176	1.4871		3,594.2503	3,594.2503	0.9914		3,619.0349

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2301	8.1515	1.5602	0.0220	0.5496	0.0302	0.5798	0.1489	0.0289	0.1778		2,371.0881	2,371.0881	0.1618		2,375.1319
Vendor	0.0116	0.3433	0.0830	7.8000e-004	0.0192	2.2700e-003	0.0215	5.5300e-003	2.1800e-003	7.7000e-003		82.8659	82.8659	5.4800e-003		83.0030
Worker	0.3330	0.2318	3.0555	8.0700e-003	0.7601	5.9200e-003	0.7660	0.2016	5.4500e-003	0.2070		803.0725	803.0725	0.0251		803.7004
Total	0.5747	8.7265	4.6987	0.0308	1.3288	0.0384	1.3673	0.3560	0.0366	0.3926		3,257.0266	3,257.0266	0.1924		3,261.8353

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

3.2 Demolition - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.4594	0.0000	0.4594	0.0696	0.0000	0.0696			0.0000			0.0000
Off-Road	2.9124	30.6280	16.9310	0.0366		1.5209	1.5209		1.4176	1.4176	0.0000	3,594.2503	3,594.2503	0.9914		3,619.0349
Total	2.9124	30.6280	16.9310	0.0366	0.4594	1.5209	1.9803	0.0696	1.4176	1.4871	0.0000	3,594.2503	3,594.2503	0.9914		3,619.0349

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2301	8.1515	1.5602	0.0220	0.5496	0.0302	0.5798	0.1489	0.0289	0.1778		2,371.0881	2,371.0881	0.1618		2,375.1319
Vendor	0.0116	0.3433	0.0830	7.8000e-004	0.0192	2.2700e-003	0.0215	5.5300e-003	2.1800e-003	7.7000e-003		82.8659	82.8659	5.4800e-003		83.0030
Worker	0.3330	0.2318	3.0555	8.0700e-003	0.7601	5.9200e-003	0.7660	0.2016	5.4500e-003	0.2070		803.0725	803.0725	0.0251		803.7004
Total	0.5747	8.7265	4.6987	0.0308	1.3288	0.0384	1.3673	0.3560	0.0366	0.3926		3,257.0266	3,257.0266	0.1924		3,261.8353

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

3.3 Site Preparation - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

3.4 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1524	0.0000	3.1524	1.6704	0.0000	1.6704			0.0000			0.0000
Off-Road	2.0578	21.5513	13.4020	0.0256		1.0913	1.0913		1.0223	1.0223		2,505.3690	2,505.3690	0.6469		2,521.5408
Total	2.0578	21.5513	13.4020	0.0256	3.1524	1.0913	4.2437	1.6704	1.0223	2.6927		2,505.3690	2,505.3690	0.6469		2,521.5408

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.8217	29.1124	5.5721	0.0784	1.7475	0.1080	1.8555	0.4789	0.1033	0.5822		8,468.1719	8,468.1719	0.5777		8,482.6138
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0735	0.0511	0.6740	1.7800e-003	0.1677	1.3000e-003	0.1690	0.0445	1.2000e-003	0.0457		177.1484	177.1484	5.5400e-003		177.2869
Total	0.8952	29.1635	6.2461	0.0802	1.9151	0.1093	2.0244	0.5234	0.1045	0.6279		8,645.3203	8,645.3203	0.5832		8,659.9007

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

3.4 Grading - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1524	0.0000	3.1524	1.6704	0.0000	1.6704			0.0000			0.0000
Off-Road	2.0578	21.5513	13.4020	0.0256		1.0913	1.0913		1.0223	1.0223	0.0000	2,505.3690	2,505.3690	0.6469		2,521.5408
Total	2.0578	21.5513	13.4020	0.0256	3.1524	1.0913	4.2437	1.6704	1.0223	2.6927	0.0000	2,505.3690	2,505.3690	0.6469		2,521.5408

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.8217	29.1124	5.5721	0.0784	1.7475	0.1080	1.8555	0.4789	0.1033	0.5822		8,468.1719	8,468.1719	0.5777		8,482.6138
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0735	0.0511	0.6740	1.7800e-003	0.1677	1.3000e-003	0.1690	0.0445	1.2000e-003	0.0457		177.1484	177.1484	5.5400e-003		177.2869
Total	0.8952	29.1635	6.2461	0.0802	1.9151	0.1093	2.0244	0.5234	0.1045	0.6279		8,645.3203	8,645.3203	0.5832		8,659.9007

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8003	16.8816	12.1799	0.0193		0.9567	0.9567		0.8854	0.8854		1,883.8155	1,883.8155	0.5756		1,898.2065
Total	1.8003	16.8816	12.1799	0.0193		0.9567	0.9567		0.8854	0.8854		1,883.8155	1,883.8155	0.5756		1,898.2065

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1013	3.5905	0.6872	9.6700e-003	0.6147	0.0133	0.6281	0.1571	0.0127	0.1698		1,044.4079	1,044.4079	0.0713		1,046.1890
Vendor	0.0308	0.9154	0.2213	2.0700e-003	0.0512	6.0600e-003	0.0573	0.0147	5.8000e-003	0.0205		220.9758	220.9758	0.0146		221.3413
Worker	0.9795	0.6816	8.9867	0.0237	2.2355	0.0174	2.2529	0.5929	0.0160	0.6089		2,361.9781	2,361.9781	0.0739		2,363.8248
Total	1.1117	5.1875	9.8952	0.0355	2.9015	0.0368	2.9383	0.7647	0.0346	0.7992		3,627.3617	3,627.3617	0.1597		3,631.3552

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

3.5 Building Construction - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8003	16.8816	12.1799	0.0193		0.9567	0.9567		0.8854	0.8854	0.0000	1,883.8155	1,883.8155	0.5756		1,898.2065
Total	1.8003	16.8816	12.1799	0.0193		0.9567	0.9567		0.8854	0.8854	0.0000	1,883.8155	1,883.8155	0.5756		1,898.2065

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1013	3.5905	0.6872	9.6700e-003	0.6147	0.0133	0.6281	0.1571	0.0127	0.1698		1,044.4079	1,044.4079	0.0713		1,046.1890
Vendor	0.0308	0.9154	0.2213	2.0700e-003	0.0512	6.0600e-003	0.0573	0.0147	5.8000e-003	0.0205		220.9758	220.9758	0.0146		221.3413
Worker	0.9795	0.6816	8.9867	0.0237	2.2355	0.0174	2.2529	0.5929	0.0160	0.6089		2,361.9781	2,361.9781	0.0739		2,363.8248
Total	1.1117	5.1875	9.8952	0.0355	2.9015	0.0368	2.9383	0.7647	0.0346	0.7992		3,627.3617	3,627.3617	0.1597		3,631.3552

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6437	15.4214	11.7878	0.0193		0.8529	0.8529		0.7893	0.7893		1,846.0070	1,846.0070	0.5731		1,860.3333
Total	1.6437	15.4214	11.7878	0.0193		0.8529	0.8529		0.7893	0.7893		1,846.0070	1,846.0070	0.5731		1,860.3333

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0937	3.3564	0.6678	9.5600e-003	0.2821	0.0108	0.2929	0.0754	0.0104	0.0858		1,033.9394	1,033.9394	0.0694		1,035.6739
Vendor	0.0263	0.8395	0.1999	2.0600e-003	0.0512	4.1600e-003	0.0554	0.0147	3.9800e-003	0.0187		219.5588	219.5588	0.0138		219.9034
Worker	0.9049	0.6083	8.1764	0.0230	2.2355	0.0170	2.2525	0.5929	0.0156	0.6085		2,288.8349	2,288.8349	0.0658		2,290.4801
Total	1.0248	4.8042	9.0441	0.0346	2.5689	0.0319	2.6008	0.6830	0.0300	0.7130		3,542.3330	3,542.3330	0.1490		3,546.0574

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

3.5 Building Construction - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6437	15.4214	11.7878	0.0193		0.8529	0.8529		0.7893	0.7893	0.0000	1,846.0070	1,846.0070	0.5731		1,860.3333
Total	1.6437	15.4214	11.7878	0.0193		0.8529	0.8529		0.7893	0.7893	0.0000	1,846.0070	1,846.0070	0.5731		1,860.3333

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0937	3.3564	0.6678	9.5600e-003	0.2821	0.0108	0.2929	0.0754	0.0104	0.0858		1,033.9394	1,033.9394	0.0694		1,035.6739
Vendor	0.0263	0.8395	0.1999	2.0600e-003	0.0512	4.1600e-003	0.0554	0.0147	3.9800e-003	0.0187		219.5588	219.5588	0.0138		219.9034
Worker	0.9049	0.6083	8.1764	0.0230	2.2355	0.0170	2.2525	0.5929	0.0156	0.6085		2,288.8349	2,288.8349	0.0658		2,290.4801
Total	1.0248	4.8042	9.0441	0.0346	2.5689	0.0319	2.6008	0.6830	0.0300	0.7130		3,542.3330	3,542.3330	0.1490		3,546.0574

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

3.6 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5965	15.2039	13.7390	0.0203		0.9179	0.9179		0.8479	0.8479		1,915.6818	1,915.6818	0.5863		1,930.3390
Paving	3.7400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.6002	15.2039	13.7390	0.0203		0.9179	0.9179		0.8479	0.8479		1,915.6818	1,915.6818	0.5863		1,930.3390

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1194	4.2765	0.8509	0.0122	0.2746	0.0138	0.2884	0.0753	0.0132	0.0884		1,317.3745	1,317.3745	0.0884		1,319.5845
Vendor	9.8500e-003	0.3148	0.0750	7.7000e-004	0.0192	1.5600e-003	0.0208	5.5300e-003	1.4900e-003	7.0200e-003		82.3345	82.3345	5.1700e-003		82.4638
Worker	0.0452	0.0304	0.4088	1.1500e-003	0.1118	8.5000e-004	0.1126	0.0296	7.8000e-004	0.0304		114.4418	114.4418	3.2900e-003		114.5240
Total	0.1744	4.6217	1.3347	0.0141	0.4056	0.0162	0.4218	0.1104	0.0155	0.1259		1,514.1508	1,514.1508	0.0969		1,516.5723

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

3.6 Paving - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5965	15.2039	13.7390	0.0203		0.9179	0.9179		0.8479	0.8479	0.0000	1,915.6818	1,915.6818	0.5863		1,930.3390
Paving	3.7400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.6002	15.2039	13.7390	0.0203		0.9179	0.9179		0.8479	0.8479	0.0000	1,915.6818	1,915.6818	0.5863		1,930.3390

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1194	4.2765	0.8509	0.0122	0.2746	0.0138	0.2884	0.0753	0.0132	0.0884		1,317.3745	1,317.3745	0.0884		1,319.5845
Vendor	9.8500e-003	0.3148	0.0750	7.7000e-004	0.0192	1.5600e-003	0.0208	5.5300e-003	1.4900e-003	7.0200e-003		82.3345	82.3345	5.1700e-003		82.4638
Worker	0.0452	0.0304	0.4088	1.1500e-003	0.1118	8.5000e-004	0.1126	0.0296	7.8000e-004	0.0304		114.4418	114.4418	3.2900e-003		114.5240
Total	0.1744	4.6217	1.3347	0.0141	0.4056	0.0162	0.4218	0.1104	0.0155	0.1259		1,514.1508	1,514.1508	0.0969		1,516.5723

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	15.8914					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1615	1.1226	1.2210	1.9800e-003		0.0740	0.0740		0.0740	0.0740		187.6320	187.6320	0.0145		187.9952
Total	16.0529	1.1226	1.2210	1.9800e-003		0.0740	0.0740		0.0740	0.0740		187.6320	187.6320	0.0145		187.9952

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0181	0.0122	0.1635	4.6000e-004	0.0447	3.4000e-004	0.0451	0.0119	3.1000e-004	0.0122		45.7767	45.7767	1.3200e-003		45.8096
Total	0.0181	0.0122	0.1635	4.6000e-004	0.0447	3.4000e-004	0.0451	0.0119	3.1000e-004	0.0122		45.7767	45.7767	1.3200e-003		45.8096

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

3.7 Architectural Coating - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	15.8914					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1615	1.1226	1.2210	1.9800e-003		0.0740	0.0740		0.0740	0.0740	0.0000	187.6320	187.6320	0.0145		187.9952
Total	16.0529	1.1226	1.2210	1.9800e-003		0.0740	0.0740		0.0740	0.0740	0.0000	187.6320	187.6320	0.0145		187.9952

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0181	0.0122	0.1635	4.6000e-004	0.0447	3.4000e-004	0.0451	0.0119	3.1000e-004	0.0122		45.7767	45.7767	1.3200e-003		45.8096
Total	0.0181	0.0122	0.1635	4.6000e-004	0.0447	3.4000e-004	0.0451	0.0119	3.1000e-004	0.0122		45.7767	45.7767	1.3200e-003		45.8096

4.0 Operational Detail - Mobile

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0147	0.0770	0.2196	8.1000e-004	0.0656	6.3000e-004	0.0663	0.0176	5.9000e-004	0.0182		82.4797	82.4797	3.8100e-003		82.5749
Unmitigated	0.0147	0.0770	0.2196	8.1000e-004	0.0656	6.3000e-004	0.0663	0.0176	5.9000e-004	0.0182		82.4797	82.4797	3.8100e-003		82.5749

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	6.97	1.32	0.68	23,312	23,312
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	6.97	1.32	0.68	23,312	23,312

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.548858	0.043235	0.200706	0.120309	0.016131	0.005851	0.021034	0.033479	0.002070	0.001877	0.004817	0.000707	0.000925
Other Asphalt Surfaces	0.548858	0.043235	0.200706	0.120309	0.016131	0.005851	0.021034	0.033479	0.002070	0.001877	0.004817	0.000707	0.000925

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	8.0200e-003	0.0729	0.0613	4.4000e-004		5.5400e-003	5.5400e-003		5.5400e-003	5.5400e-003		87.5101	87.5101	1.6800e-003	1.6000e-003	88.0301
NaturalGas Unmitigated	8.0200e-003	0.0729	0.0613	4.4000e-004		5.5400e-003	5.5400e-003		5.5400e-003	5.5400e-003		87.5101	87.5101	1.6800e-003	1.6000e-003	88.0301

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	743.836	8.0200e-003	0.0729	0.0613	4.4000e-004		5.5400e-003	5.5400e-003		5.5400e-003	5.5400e-003		87.5101	87.5101	1.6800e-003	1.6000e-003	88.0301
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		8.0200e-003	0.0729	0.0613	4.4000e-004		5.5400e-003	5.5400e-003		5.5400e-003	5.5400e-003		87.5101	87.5101	1.6800e-003	1.6000e-003	88.0301

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0.743836	8.0200e-003	0.0729	0.0613	4.4000e-004		5.5400e-003	5.5400e-003		5.5400e-003	5.5400e-003		87.5101	87.5101	1.6800e-003	1.6000e-003	88.0301
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		8.0200e-003	0.0729	0.0613	4.4000e-004		5.5400e-003	5.5400e-003		5.5400e-003	5.5400e-003		87.5101	87.5101	1.6800e-003	1.6000e-003	88.0301

6.0 Area Detail

6.1 Mitigation Measures Area

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.3717	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Unmitigated	0.3717	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0446					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3271					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Total	0.3717	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0446					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3271					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Total	0.3717	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Summer

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

PAR 1135 - Boiler (3) to Turbine (3) Repower
South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1.00	1000sqft	0.02	15,000.00	0
Other Asphalt Surfaces	1.00	1000sqft	0.02	85,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	12			Operational Year	2021
Utility Company	Glendale Water & Power				
CO2 Intensity (lb/MW hr)	1115.33	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

Project Characteristics -

Land Use - Land Use - Most building footprints are occupied by non-populated structures, such as turbines, ammonia tanks, etc.

Construction Phase - Estimated Construction Schedule.

Off-road Equipment - Off-Road Equipment - Air Compressors (1): 4 Hours Per Day

Off-road Equipment - Off-Road Equipment - Demolition: Cranes (1): 3 Hours Per Day; Excavators (2): 3 Hours Per Day; Forklifts (2): 2 Hours Per Day; Other General Industrial Equipment (2): 2 Hour Per Day; Graders (1): 1 Hour Per Day; Rollers (1): 1 Hour Per Day; Rubber Tired Dozers (2): 2 Hours Per Day; Tractors/Loaders/Backhoes (2): 4 Hours Per Day; Tractors/Loaders/Backhoes (2): 2 Hours Per Day

Off-road Equipment - Off-Road Equipment - No Site Preparation

Off-road Equipment - Off-Road Equipment - Grading: Excavators (2): 3 Hours Per Day; Graders (1): 4 Hours Per Day; Rollers (1): 4 Hours Per Day; Tractors/Loaders/Backhoes (1): 4 Hours Per Day; Tractors/Loaders/Backhoes (2): 3 Hours Per Day; Rubber Tired Dozers (1): 4 Hours Per Day

Off-road Equipment - Off-Road Equipment - Const.: Welders (1): 4 Hours/Day; Tract/Load/Back (1): 1 Hour/Day; Rubber Tired Loaders (2): 2 Hours/Day; Cranes (2): 3 Hours/Day; Cranes (2): 1 Hour/Day; Welders (1): 4 Hours/Day; Tract/Load/Back (2): 1 Hours/Day; Rubber Tired Loaders (1): 2 Hours/Day; Rollers (1): 1 Hour/Day; Excavators (2): 1 Hour/Day; Cranes (2): 1 Hour/Day; Rollers (1): 1 Hour/Day

Off-road Equipment - Off-Road Equipment - Paving: Aerial Lifts (1): 1 Hour Per Day; Cranes (1): 4 Hours Per Day; Forklifts (1): 3 Hours Per Day; Pavers (2): 5 Hours Per Day; Paving Equipment (2): 5 Hours Per Day; Rollers (2): 5 Hours Per Day

Grading - No Site Preparation, Acres of Grading (4)

Demolition -

Trips and VMT - Worker, Vendor, Haul Trips Estimated Based on FIER Grayson Repowering Project and modified for compliance with PAR 1135.

Architectural Coating - Architectural Coating Estimated.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	7,500.00	36,000.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	22,500.00	12,000.00
tblArchitecturalCoating	ConstArea_Parking	5,100.00	0.00
tblArchitecturalCoating	EF_Parking	100.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	50.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	50.00	0.00
tblConstructionPhase	NumDays	10.00	150.00
tblConstructionPhase	NumDays	1.00	0.00
tblConstructionPhase	NumDays	2.00	30.00

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

tblConstructionPhase	NumDays	100.00	300.00
tblConstructionPhase	NumDays	5.00	14.00
tblConstructionPhase	NumDays	5.00	14.00
tblConstructionPhase	PhaseEndDate	12/14/2018	6/28/2019
tblConstructionPhase	PhaseEndDate	12/17/2018	12/1/2018
tblConstructionPhase	PhaseEndDate	12/19/2018	8/9/2019
tblConstructionPhase	PhaseEndDate	5/8/2019	10/23/2020
tblConstructionPhase	PhaseEndDate	5/15/2019	12/18/2020
tblConstructionPhase	PhaseEndDate	5/22/2019	11/19/2020
tblConstructionPhase	PhaseStartDate	12/15/2018	12/1/2018
tblConstructionPhase	PhaseStartDate	12/18/2018	7/1/2019
tblConstructionPhase	PhaseStartDate	12/20/2018	9/1/2019
tblConstructionPhase	PhaseStartDate	5/9/2019	12/1/2020
tblConstructionPhase	PhaseStartDate	5/16/2019	11/1/2020
tblGrading	AcresOfGrading	7.50	4.00
tblGrading	MaterialMoistureContentBulldozing	7.90	0.00
tblGrading	MaterialMoistureContentTruckLoading	12.00	0.00
tblGrading	MaterialSiltContent	6.90	0.00
tblGrading	MeanVehicleSpeed	7.10	0.00
tblLandUse	LandUseSquareFeet	1,000.00	15,000.00
tblLandUse	LandUseSquareFeet	1,000.00	85,000.00
tblOffRoadEquipment	HorsePower	63.00	9.00
tblOffRoadEquipment	HorsePower	158.00	81.00
tblOffRoadEquipment	HorsePower	46.00	35.00
tblOffRoadEquipment	HorsePower	97.00	79.00
tblOffRoadEquipment	HorsePower	78.00	0.00
tblOffRoadEquipment	HorsePower	203.00	147.00

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

tblOffRoadEquipment	HorsePower	187.00	0.00
tblOffRoadEquipment	HorsePower	231.00	130.00
tblOffRoadEquipment	HorsePower	89.00	80.00
tblOffRoadEquipment	HorsePower	158.00	247.00
tblOffRoadEquipment	HorsePower	187.00	247.00
tblOffRoadEquipment	HorsePower	231.00	97.00
tblOffRoadEquipment	HorsePower	231.00	250.00
tblOffRoadEquipment	HorsePower	89.00	97.00
tblOffRoadEquipment	HorsePower	88.00	97.00
tblOffRoadEquipment	HorsePower	80.00	97.00
tblOffRoadEquipment	HorsePower	97.00	200.00
tblOffRoadEquipment	HorsePower	130.00	97.00
tblOffRoadEquipment	HorsePower	97.00	0.00
tblOffRoadEquipment	HorsePower	97.00	200.00
tblOffRoadEquipment	HorsePower	46.00	38.00
tblOffRoadEquipment	HorsePower	78.00	0.00
tblOffRoadEquipment	HorsePower	203.00	140.00
tblOffRoadEquipment	HorsePower	158.00	99.00
tblOffRoadEquipment	HorsePower	231.00	500.00
tblOffRoadEquipment	HorsePower	80.00	65.00
tblOffRoadEquipment	HorsePower	172.00	350.00
tblOffRoadEquipment	LoadFactor	0.31	0.56
tblOffRoadEquipment	LoadFactor	0.29	0.73
tblOffRoadEquipment	LoadFactor	0.38	0.73
tblOffRoadEquipment	LoadFactor	0.45	0.29
tblOffRoadEquipment	LoadFactor	0.37	0.29
tblOffRoadEquipment	LoadFactor	0.48	0.00

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

tbloffRoadEquipment	LoadFactor	0.36	0.20
tbloffRoadEquipment	LoadFactor	0.41	0.00
tbloffRoadEquipment	LoadFactor	0.29	0.42
tbloffRoadEquipment	LoadFactor	0.20	0.38
tbloffRoadEquipment	LoadFactor	0.38	0.40
tbloffRoadEquipment	LoadFactor	0.41	0.40
tbloffRoadEquipment	LoadFactor	0.29	0.37
tbloffRoadEquipment	LoadFactor	0.29	0.37
tbloffRoadEquipment	LoadFactor	0.20	0.37
tbloffRoadEquipment	LoadFactor	0.34	0.37
tbloffRoadEquipment	LoadFactor	0.38	0.37
tbloffRoadEquipment	LoadFactor	0.42	0.37
tbloffRoadEquipment	LoadFactor	0.37	0.00
tbloffRoadEquipment	LoadFactor	0.37	0.37
tbloffRoadEquipment	LoadFactor	0.40	0.40
tbloffRoadEquipment	LoadFactor	0.48	0.00
tbloffRoadEquipment	LoadFactor	0.36	0.36
tbloffRoadEquipment	LoadFactor	0.38	0.38
tbloffRoadEquipment	OffRoadEquipmentType	Concrete/Industrial Saws	Cranes
tbloffRoadEquipment	OffRoadEquipmentType		Graders
tbloffRoadEquipment	OffRoadEquipmentType		Rollers
tbloffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tbloffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tbloffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Excavators
tbloffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Forklifts
tbloffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Other General Industrial Equipment
tbloffRoadEquipment	OffRoadEquipmentType	Concrete/Industrial Saws	Excavators

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

tbloffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tbloffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tbloffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Graders
tbloffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Rollers
tbloffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tbloffRoadEquipment	OffRoadEquipmentType	Cranes	Welders
tbloffRoadEquipment	OffRoadEquipmentType	Cranes	Air Compressors
tbloffRoadEquipment	OffRoadEquipmentType		Welders
tbloffRoadEquipment	OffRoadEquipmentType	Forklifts	Rubber Tired Loaders
tbloffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tbloffRoadEquipment	OffRoadEquipmentType		Air Compressors
tbloffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tbloffRoadEquipment	OffRoadEquipmentType		Rollers
tbloffRoadEquipment	OffRoadEquipmentType		Excavators
tbloffRoadEquipment	OffRoadEquipmentType	Cement and Mortar Mixers	Aerial Lifts
tbloffRoadEquipment	OffRoadEquipmentType		Cranes
tbloffRoadEquipment	OffRoadEquipmentType		Rollers
tbloffRoadEquipment	OffRoadEquipmentType	Pavers	Cranes
tbloffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tbloffRoadEquipment	OffRoadEquipmentType	Rollers	Forklifts
tbloffRoadEquipment	OffRoadEquipmentType		Paving Equipment
tbloffRoadEquipment	OffRoadEquipmentType		Rollers
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tbloffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	4.00	3.00
tblOffRoadEquipment	UsageHours	4.00	1.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	7.00	5.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	1.00	3.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	6.00	3.00
tblOffRoadEquipment	UsageHours	6.00	3.00
tblOffRoadEquipment	UsageHours	1.00	4.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblOffRoadEquipment	UsageHours	4.00	1.00
tblOffRoadEquipment	UsageHours	7.00	5.00
tblTripsAndVMT	HaulingTripNumber	318.00	4,200.00
tblTripsAndVMT	HaulingTripNumber	0.00	3,000.00
tblTripsAndVMT	HaulingTripNumber	0.00	3,700.00
tblTripsAndVMT	HaulingTripNumber	0.00	220.00
tblTripsAndVMT	VendorTripNumber	0.00	3.00
tblTripsAndVMT	VendorTripNumber	16.00	8.00

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

tblTripsAndVMT	VendorTripNumber	0.00	3.00
tblTripsAndVMT	WorkerTripNumber	40.00	68.00
tblTripsAndVMT	WorkerTripNumber	23.00	15.00
tblTripsAndVMT	WorkerTripNumber	42.00	200.00
tblTripsAndVMT	WorkerTripNumber	35.00	10.00
tblTripsAndVMT	WorkerTripNumber	8.00	4.00

2.0 Emissions Summary

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	3.8309	42.9311	22.2940	0.0670	4.0020	1.7458	5.7478	0.9689	1.6288	2.5978	0.0000	6,857.6228	6,857.6228	1.2003	0.0000	6,887.6297
2019	3.5239	51.1115	21.4680	0.1042	5.0676	1.5600	6.2702	2.1938	1.4547	3.3226	0.0000	10,985.5670	10,985.5670	1.2559	0.0000	11,016.9642
2020	16.0726	20.3255	20.0913	0.0522	2.5689	0.9344	3.4540	0.6830	0.8636	1.5025	0.0000	5,214.8547	5,214.8547	0.7216	0.0000	5,232.8959
Maximum	16.0726	51.1115	22.2940	0.1042	5.0676	1.7458	6.2702	2.1938	1.6288	3.3226	0.0000	10,985.5670	10,985.5670	1.2559	0.0000	11,016.9642

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	3.8309	42.9311	22.2940	0.0670	4.0020	1.7458	5.7478	0.9689	1.6288	2.5978	0.0000	6,857.6228	6,857.6228	1.2003	0.0000	6,887.6297
2019	3.5239	51.1115	21.4680	0.1042	5.0676	1.5600	6.2702	2.1938	1.4547	3.3226	0.0000	10,985.5670	10,985.5670	1.2559	0.0000	11,016.9642
2020	16.0726	20.3255	20.0913	0.0522	2.5689	0.9344	3.4540	0.6830	0.8636	1.5025	0.0000	5,214.8547	5,214.8547	0.7216	0.0000	5,232.8959
Maximum	16.0726	51.1115	22.2940	0.1042	5.0676	1.7458	6.2702	2.1938	1.6288	3.3226	0.0000	10,985.5670	10,985.5670	1.2559	0.0000	11,016.9642

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.3717	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Energy	8.0200e-003	0.0729	0.0613	4.4000e-004		5.5400e-003	5.5400e-003		5.5400e-003	5.5400e-003		87.5101	87.5101	1.6800e-003	1.6000e-003	88.0301
Mobile	0.0140	0.0790	0.2033	7.7000e-004	0.0656	6.3000e-004	0.0663	0.0176	5.9000e-004	0.0182		78.1523	78.1523	3.7800e-003		78.2468
Total	0.3937	0.1519	0.2648	1.2100e-003	0.0656	6.1700e-003	0.0718	0.0176	6.1300e-003	0.0237		165.6628	165.6628	5.4600e-003	1.6000e-003	166.2774

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.3717	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Energy	8.0200e-003	0.0729	0.0613	4.4000e-004		5.5400e-003	5.5400e-003		5.5400e-003	5.5400e-003		87.5101	87.5101	1.6800e-003	1.6000e-003	88.0301
Mobile	0.0140	0.0790	0.2033	7.7000e-004	0.0656	6.3000e-004	0.0663	0.0176	5.9000e-004	0.0182		78.1523	78.1523	3.7800e-003		78.2468
Total	0.3937	0.1519	0.2648	1.2100e-003	0.0656	6.1700e-003	0.0718	0.0176	6.1300e-003	0.0237		165.6628	165.6628	5.4600e-003	1.6000e-003	166.2774

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	12/1/2018	6/28/2019	5	150	Demolition of affected existing power generating units
2	Site Preparation	Site Preparation	12/1/2018	12/1/2018	5	0	No site preparation activity
3	Grading	Grading	7/1/2019	8/9/2019	5	30	Grading Activity
4	Building Construction	Building Construction	9/1/2019	10/23/2020	5	300	Include site mobilization, equipment, electric conduit, cable
5	Paving	Paving	12/1/2020	12/18/2020	5	14	Paving activity occurs during the commissioning period
6	Architectural Coating	Architectural Coating	11/1/2020	11/19/2020	5	14	Coating Activity is estimated

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0.02

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 12,000; Non-Residential Outdoor: 36,000; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Cranes	1	3.00	231	0.73
Demolition	Graders	1	1.00	187	0.41
Demolition	Rollers	1	1.00	80	0.38

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

Demolition	Rubber Tired Dozers	2	3.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	4.00	97	0.37
Demolition	Excavators	2	3.00	247	0.40
Demolition	Forklifts	2	2.00	97	0.37
Demolition	Other General Industrial Equipment	2	2.00	97	0.37
Site Preparation	Graders	0	0.00	0	0.00
Site Preparation	Tractors/Loaders/Backhoes	0	0.00	0	0.00
Grading	Excavators	2	3.00	81	0.73
Demolition	Tractors/Loaders/Backhoes	2	3.00	200	0.37
Grading	Tractors/Loaders/Backhoes	2	3.00	97	0.37
Grading	Graders	1	4.00	247	0.40
Grading	Rollers	1	4.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	4.00	200	0.37
Grading	Rubber Tired Dozers	1	4.00	247	0.40
Building Construction	Welders	1	4.00	35	0.29
Building Construction	Tractors/Loaders/Backhoes	1	1.00	79	0.29
Building Construction	Air Compressors	0	0.00	0	0.00
Building Construction	Welders	1	4.00	38	0.45
Building Construction	Rubber Tired Loaders	2	2.00	147	0.20
Building Construction	Tractors/Loaders/Backhoes	2	1.00	97	0.37
Building Construction	Air Compressors	0	0.00	0	0.00
Building Construction	Rubber Tired Loaders	1	2.00	140	0.36
Building Construction	Rollers	1	1.00	80	0.38
Building Construction	Cranes	2	3.00	97	0.37
Building Construction	Cranes	2	1.00	250	0.37
Building Construction	Excavators	2	1.00	99	0.38
Paving	Aerial Lifts	1	1.00	9	0.56

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

Building Construction	Cranes	2	1.00	500	0.29
Building Construction	Rollers	1	1.00	65	0.38
Paving	Cranes	1	4.00	130	0.42
Building Construction	Other Construction Equipment	2	1.00	350	0.42
Paving	Forklifts	1	3.00	80	0.38
Paving	Pavers	2	5.00	97	0.37
Architectural Coating	Air Compressors	1	4.00	78	0.48
Paving	Paving Equipment	2	5.00	132	0.36
Paving	Rollers	2	5.00	80	0.38
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Forklifts	2	6.00	89	0.20
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	16	68.00	3.00	4,200.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	9	15.00	0.00	3,000.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	22	200.00	8.00	3,700.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	14	10.00	3.00	220.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.4594	0.0000	0.4594	0.0696	0.0000	0.0696			0.0000			0.0000
Off-Road	3.1693	33.5375	17.3743	0.0366		1.7032	1.7032		1.5883	1.5883		3,644.7656	3,644.7656	0.9961		3,669.6668
Total	3.1693	33.5375	17.3743	0.0366	0.4594	1.7032	2.1626	0.0696	1.5883	1.6579		3,644.7656	3,644.7656	0.9961		3,669.6668

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2500	8.7416	1.7313	0.0219	2.7633	0.0338	2.7971	0.6923	0.0323	0.7246		2,355.9684	2,355.9684	0.1717		2,360.2597
Vendor	0.0133	0.3642	0.1005	7.6000e-004	0.0192	2.7000e-003	0.0219	5.5300e-003	2.5800e-003	8.1100e-003		81.2269	81.2269	6.1100e-003		81.3797
Worker	0.3984	0.2878	3.0878	7.7900e-003	0.7601	6.0600e-003	0.7661	0.2016	5.5800e-003	0.2072		775.6619	775.6619	0.0265		776.3236
Total	0.6617	9.3935	4.9197	0.0304	3.5426	0.0426	3.5852	0.8994	0.0405	0.9399		3,212.8572	3,212.8572	0.2042		3,217.9630

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

3.2 Demolition - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.4594	0.0000	0.4594	0.0696	0.0000	0.0696			0.0000			0.0000
Off-Road	3.1693	33.5375	17.3743	0.0366		1.7032	1.7032		1.5883	1.5883	0.0000	3,644.7656	3,644.7656	0.9961		3,669.6668
Total	3.1693	33.5375	17.3743	0.0366	0.4594	1.7032	2.1626	0.0696	1.5883	1.6579	0.0000	3,644.7656	3,644.7656	0.9961		3,669.6668

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2500	8.7416	1.7313	0.0219	2.7633	0.0338	2.7971	0.6923	0.0323	0.7246		2,355.9684	2,355.9684	0.1717		2,360.2597
Vendor	0.0133	0.3642	0.1005	7.6000e-004	0.0192	2.7000e-003	0.0219	5.5300e-003	2.5800e-003	8.1100e-003		81.2269	81.2269	6.1100e-003		81.3797
Worker	0.3984	0.2878	3.0878	7.7900e-003	0.7601	6.0600e-003	0.7661	0.2016	5.5800e-003	0.2072		775.6619	775.6619	0.0265		776.3236
Total	0.6617	9.3935	4.9197	0.0304	3.5426	0.0426	3.5852	0.8994	0.0405	0.9399		3,212.8572	3,212.8572	0.2042		3,217.9630

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

3.2 Demolition - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.4594	0.0000	0.4594	0.0696	0.0000	0.0696			0.0000			0.0000
Off-Road	2.9124	30.6280	16.9310	0.0366		1.5209	1.5209		1.4176	1.4176		3,594.2503	3,594.2503	0.9914		3,619.0349
Total	2.9124	30.6280	16.9310	0.0366	0.4594	1.5209	1.9803	0.0696	1.4176	1.4871		3,594.2503	3,594.2503	0.9914		3,619.0349

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2369	8.2612	1.6880	0.0216	0.5496	0.0308	0.5804	0.1489	0.0295	0.1784		2,328.0599	2,328.0599	0.1691		2,332.2868
Vendor	0.0121	0.3435	0.0924	7.6000e-004	0.0192	2.3100e-003	0.0215	5.5300e-003	2.2100e-003	7.7400e-003		80.4949	80.4949	5.8900e-003		80.6422
Worker	0.3626	0.2538	2.7566	7.5400e-003	0.7601	5.9200e-003	0.7660	0.2016	5.4500e-003	0.2070		751.1659	751.1659	0.0235		751.7526
Total	0.6115	8.8585	4.5371	0.0299	1.3288	0.0390	1.3679	0.3560	0.0371	0.3931		3,159.7207	3,159.7207	0.1984		3,164.6816

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

3.2 Demolition - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.4594	0.0000	0.4594	0.0696	0.0000	0.0696			0.0000			0.0000
Off-Road	2.9124	30.6280	16.9310	0.0366		1.5209	1.5209		1.4176	1.4176	0.0000	3,594.2503	3,594.2503	0.9914		3,619.0349
Total	2.9124	30.6280	16.9310	0.0366	0.4594	1.5209	1.9803	0.0696	1.4176	1.4871	0.0000	3,594.2503	3,594.2503	0.9914		3,619.0349

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2369	8.2612	1.6880	0.0216	0.5496	0.0308	0.5804	0.1489	0.0295	0.1784		2,328.0599	2,328.0599	0.1691		2,332.2868
Vendor	0.0121	0.3435	0.0924	7.6000e-004	0.0192	2.3100e-003	0.0215	5.5300e-003	2.2100e-003	7.7400e-003		80.4949	80.4949	5.8900e-003		80.6422
Worker	0.3626	0.2538	2.7566	7.5400e-003	0.7601	5.9200e-003	0.7660	0.2016	5.4500e-003	0.2070		751.1659	751.1659	0.0235		751.7526
Total	0.6115	8.8585	4.5371	0.0299	1.3288	0.0390	1.3679	0.3560	0.0371	0.3931		3,159.7207	3,159.7207	0.1984		3,164.6816

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

3.3 Site Preparation - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000							

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

3.4 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1524	0.0000	3.1524	1.6704	0.0000	1.6704			0.0000			0.0000
Off-Road	2.0578	21.5513	13.4020	0.0256		1.0913	1.0913		1.0223	1.0223		2,505.3690	2,505.3690	0.6469		2,521.5408
Total	2.0578	21.5513	13.4020	0.0256	3.1524	1.0913	4.2437	1.6704	1.0223	2.6927		2,505.3690	2,505.3690	0.6469		2,521.5408

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.8459	29.5042	6.0287	0.0770	1.7475	0.1101	1.8575	0.4789	0.1053	0.5842		8,314.4997	8,314.4997	0.6038		8,329.5956
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0800	0.0560	0.6081	1.6600e-003	0.1677	1.3000e-003	0.1690	0.0445	1.2000e-003	0.0457		165.6984	165.6984	5.1800e-003		165.8278
Total	0.9259	29.5602	6.6368	0.0787	1.9151	0.1114	2.0265	0.5234	0.1065	0.6299		8,480.1980	8,480.1980	0.6090		8,495.4234

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

3.4 Grading - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1524	0.0000	3.1524	1.6704	0.0000	1.6704			0.0000			0.0000
Off-Road	2.0578	21.5513	13.4020	0.0256		1.0913	1.0913		1.0223	1.0223	0.0000	2,505.3690	2,505.3690	0.6469		2,521.5408
Total	2.0578	21.5513	13.4020	0.0256	3.1524	1.0913	4.2437	1.6704	1.0223	2.6927	0.0000	2,505.3690	2,505.3690	0.6469		2,521.5408

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.8459	29.5042	6.0287	0.0770	1.7475	0.1101	1.8575	0.4789	0.1053	0.5842		8,314.4997	8,314.4997	0.6038		8,329.5956
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0800	0.0560	0.6081	1.6600e-003	0.1677	1.3000e-003	0.1690	0.0445	1.2000e-003	0.0457		165.6984	165.6984	5.1800e-003		165.8278
Total	0.9259	29.5602	6.6368	0.0787	1.9151	0.1114	2.0265	0.5234	0.1065	0.6299		8,480.1980	8,480.1980	0.6090		8,495.4234

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8003	16.8816	12.1799	0.0193		0.9567	0.9567		0.8854	0.8854		1,883.8155	1,883.8155	0.5756		1,898.2065
Total	1.8003	16.8816	12.1799	0.0193		0.9567	0.9567		0.8854	0.8854		1,883.8155	1,883.8155	0.5756		1,898.2065

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1043	3.6389	0.7435	9.5000e-003	0.6147	0.0136	0.6283	0.1571	0.0130	0.1700		1,025.4550	1,025.4550	0.0745		1,027.3168
Vendor	0.0322	0.9160	0.2465	2.0100e-003	0.0512	6.1600e-003	0.0574	0.0147	5.8900e-003	0.0206		214.6530	214.6530	0.0157		215.0458
Worker	1.0665	0.7466	8.1077	0.0222	2.2355	0.0174	2.2529	0.5929	0.0160	0.6089		2,209.3115	2,209.3115	0.0690		2,211.0371
Total	1.2030	5.3015	9.0977	0.0337	2.9015	0.0371	2.9386	0.7647	0.0349	0.7996		3,449.4195	3,449.4195	0.1592		3,453.3997

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

3.5 Building Construction - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8003	16.8816	12.1799	0.0193		0.9567	0.9567		0.8854	0.8854	0.0000	1,883.8155	1,883.8155	0.5756		1,898.2065
Total	1.8003	16.8816	12.1799	0.0193		0.9567	0.9567		0.8854	0.8854	0.0000	1,883.8155	1,883.8155	0.5756		1,898.2065

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1043	3.6389	0.7435	9.5000e-003	0.6147	0.0136	0.6283	0.1571	0.0130	0.1700		1,025.4550	1,025.4550	0.0745		1,027.3168
Vendor	0.0322	0.9160	0.2465	2.0100e-003	0.0512	6.1600e-003	0.0574	0.0147	5.8900e-003	0.0206		214.6530	214.6530	0.0157		215.0458
Worker	1.0665	0.7466	8.1077	0.0222	2.2355	0.0174	2.2529	0.5929	0.0160	0.6089		2,209.3115	2,209.3115	0.0690		2,211.0371
Total	1.2030	5.3015	9.0977	0.0337	2.9015	0.0371	2.9386	0.7647	0.0349	0.7996		3,449.4195	3,449.4195	0.1592		3,453.3997

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6437	15.4214	11.7878	0.0193		0.8529	0.8529		0.7893	0.7893		1,846.0070	1,846.0070	0.5731		1,860.3333
Total	1.6437	15.4214	11.7878	0.0193		0.8529	0.8529		0.7893	0.7893		1,846.0070	1,846.0070	0.5731		1,860.3333

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0964	3.3995	0.7189	9.3900e-003	0.2821	0.0110	0.2931	0.0754	0.0105	0.0859		1,014.9076	1,014.9076	0.0724		1,016.7175
Vendor	0.0275	0.8386	0.2229	2.0000e-003	0.0512	4.2200e-003	0.0554	0.0147	4.0400e-003	0.0188		213.2103	213.2103	0.0148		213.5804
Worker	0.9869	0.6660	7.3618	0.0215	2.2355	0.0170	2.2525	0.5929	0.0156	0.6085		2,140.7299	2,140.7299	0.0614		2,142.2648
Total	1.1108	4.9041	8.3036	0.0329	2.5689	0.0322	2.6010	0.6830	0.0302	0.7132		3,368.8477	3,368.8477	0.1486		3,372.5626

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

3.5 Building Construction - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6437	15.4214	11.7878	0.0193		0.8529	0.8529		0.7893	0.7893	0.0000	1,846.0070	1,846.0070	0.5731		1,860.3333
Total	1.6437	15.4214	11.7878	0.0193		0.8529	0.8529		0.7893	0.7893	0.0000	1,846.0070	1,846.0070	0.5731		1,860.3333

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0964	3.3995	0.7189	9.3900e-003	0.2821	0.0110	0.2931	0.0754	0.0105	0.0859		1,014.9076	1,014.9076	0.0724		1,016.7175
Vendor	0.0275	0.8386	0.2229	2.0000e-003	0.0512	4.2200e-003	0.0554	0.0147	4.0400e-003	0.0188		213.2103	213.2103	0.0148		213.5804
Worker	0.9869	0.6660	7.3618	0.0215	2.2355	0.0170	2.2525	0.5929	0.0156	0.6085		2,140.7299	2,140.7299	0.0614		2,142.2648
Total	1.1108	4.9041	8.3036	0.0329	2.5689	0.0322	2.6010	0.6830	0.0302	0.7132		3,368.8477	3,368.8477	0.1486		3,372.5626

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

3.6 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5965	15.2039	13.7390	0.0203		0.9179	0.9179		0.8479	0.8479		1,915.6818	1,915.6818	0.5863		1,930.3390
Paving	3.7400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.6002	15.2039	13.7390	0.0203		0.9179	0.9179		0.8479	0.8479		1,915.6818	1,915.6818	0.5863		1,930.3390

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1228	4.3314	0.9160	0.0120	0.2746	0.0140	0.2886	0.0753	0.0134	0.0886		1,293.1255	1,293.1255	0.0922		1,295.4315
Vendor	0.0103	0.3145	0.0836	7.5000e-004	0.0192	1.5800e-003	0.0208	5.5300e-003	1.5100e-003	7.0400e-003		79.9538	79.9538	5.5500e-003		80.0926
Worker	0.0494	0.0333	0.3681	1.0700e-003	0.1118	8.5000e-004	0.1126	0.0296	7.8000e-004	0.0304		107.0365	107.0365	3.0700e-003		107.1132
Total	0.1825	4.6792	1.3677	0.0138	0.4056	0.0164	0.4220	0.1104	0.0157	0.1261		1,480.1158	1,480.1158	0.1009		1,482.6374

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

3.6 Paving - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5965	15.2039	13.7390	0.0203		0.9179	0.9179		0.8479	0.8479	0.0000	1,915.6818	1,915.6818	0.5863		1,930.3390
Paving	3.7400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.6002	15.2039	13.7390	0.0203		0.9179	0.9179		0.8479	0.8479	0.0000	1,915.6818	1,915.6818	0.5863		1,930.3390

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1228	4.3314	0.9160	0.0120	0.2746	0.0140	0.2886	0.0753	0.0134	0.0886		1,293.1255	1,293.1255	0.0922		1,295.4315
Vendor	0.0103	0.3145	0.0836	7.5000e-004	0.0192	1.5800e-003	0.0208	5.5300e-003	1.5100e-003	7.0400e-003		79.9538	79.9538	5.5500e-003		80.0926
Worker	0.0494	0.0333	0.3681	1.0700e-003	0.1118	8.5000e-004	0.1126	0.0296	7.8000e-004	0.0304		107.0365	107.0365	3.0700e-003		107.1132
Total	0.1825	4.6792	1.3677	0.0138	0.4056	0.0164	0.4220	0.1104	0.0157	0.1261		1,480.1158	1,480.1158	0.1009		1,482.6374

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	15.8914					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1615	1.1226	1.2210	1.9800e-003		0.0740	0.0740		0.0740	0.0740		187.6320	187.6320	0.0145		187.9952
Total	16.0529	1.1226	1.2210	1.9800e-003		0.0740	0.0740		0.0740	0.0740		187.6320	187.6320	0.0145		187.9952

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0197	0.0133	0.1472	4.3000e-004	0.0447	3.4000e-004	0.0451	0.0119	3.1000e-004	0.0122		42.8146	42.8146	1.2300e-003		42.8453
Total	0.0197	0.0133	0.1472	4.3000e-004	0.0447	3.4000e-004	0.0451	0.0119	3.1000e-004	0.0122		42.8146	42.8146	1.2300e-003		42.8453

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

3.7 Architectural Coating - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	15.8914					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1615	1.1226	1.2210	1.9800e-003		0.0740	0.0740		0.0740	0.0740	0.0000	187.6320	187.6320	0.0145		187.9952
Total	16.0529	1.1226	1.2210	1.9800e-003		0.0740	0.0740		0.0740	0.0740	0.0000	187.6320	187.6320	0.0145		187.9952

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0197	0.0133	0.1472	4.3000e-004	0.0447	3.4000e-004	0.0451	0.0119	3.1000e-004	0.0122		42.8146	42.8146	1.2300e-003		42.8453
Total	0.0197	0.0133	0.1472	4.3000e-004	0.0447	3.4000e-004	0.0451	0.0119	3.1000e-004	0.0122		42.8146	42.8146	1.2300e-003		42.8453

4.0 Operational Detail - Mobile

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0140	0.0790	0.2033	7.7000e-004	0.0656	6.3000e-004	0.0663	0.0176	5.9000e-004	0.0182		78.1523	78.1523	3.7800e-003		78.2468
Unmitigated	0.0140	0.0790	0.2033	7.7000e-004	0.0656	6.3000e-004	0.0663	0.0176	5.9000e-004	0.0182		78.1523	78.1523	3.7800e-003		78.2468

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	6.97	1.32	0.68	23,312	23,312
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	6.97	1.32	0.68	23,312	23,312

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	16.60	8.40	6.90	59.00	28.00	13.00	92	5	3
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.548858	0.043235	0.200706	0.120309	0.016131	0.005851	0.021034	0.033479	0.002070	0.001877	0.004817	0.000707	0.000925
Other Asphalt Surfaces	0.548858	0.043235	0.200706	0.120309	0.016131	0.005851	0.021034	0.033479	0.002070	0.001877	0.004817	0.000707	0.000925

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	8.0200e-003	0.0729	0.0613	4.4000e-004		5.5400e-003	5.5400e-003		5.5400e-003	5.5400e-003		87.5101	87.5101	1.6800e-003	1.6000e-003	88.0301
NaturalGas Unmitigated	8.0200e-003	0.0729	0.0613	4.4000e-004		5.5400e-003	5.5400e-003		5.5400e-003	5.5400e-003		87.5101	87.5101	1.6800e-003	1.6000e-003	88.0301

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

5.2 Energy by Land Use - Natural Gas

Unmitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	743.836	8.0200e-003	0.0729	0.0613	4.4000e-004		5.5400e-003	5.5400e-003		5.5400e-003	5.5400e-003		87.5101	87.5101	1.6800e-003	1.6000e-003	88.0301
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		8.0200e-003	0.0729	0.0613	4.4000e-004		5.5400e-003	5.5400e-003		5.5400e-003	5.5400e-003		87.5101	87.5101	1.6800e-003	1.6000e-003	88.0301

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0.743836	8.0200e-003	0.0729	0.0613	4.4000e-004		5.5400e-003	5.5400e-003		5.5400e-003	5.5400e-003		87.5101	87.5101	1.6800e-003	1.6000e-003	88.0301
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		8.0200e-003	0.0729	0.0613	4.4000e-004		5.5400e-003	5.5400e-003		5.5400e-003	5.5400e-003		87.5101	87.5101	1.6800e-003	1.6000e-003	88.0301

6.0 Area Detail

6.1 Mitigation Measures Area

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.3717	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Unmitigated	0.3717	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0446					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3271					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Total	0.3717	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0446					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3271					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-005	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004
Total	0.3717	0.0000	2.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		4.4000e-004	4.4000e-004	0.0000		4.7000e-004

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

PAR 1135 - Boiler (3) to Turbine (3) Repower - South Coast AQMD Air District, Winter

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

APPENDIX C

CEQA Impact Evaluations – Assumptions and Calculations

APPENDIX C-1

CEQA Impact Evaluations – Assumptions and Calculations

Construction Summary

Appendix C
 CEQA Construction Impact Evaluations - Assumptions and Calculations
 (10/12/2018 rev)

Criteria Pollutant Emissions Summary

PAR 1135 Requirement	VOC (lbs/day)	NOx (lbs/day)	CO (lbs/day)	SOx (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)
Facility 1	0.4	5.0	3.1	0.0	0.3	0.2
Facility 2	5.6	50.4	49.7	0.1	3.6	3.8
Facility 3	16.1	51.1	22.5	0.1	6.3	3.3
Facility 4	0.4	5.0	3.1	0.0	0.3	0.2
Facility 5	0.4	5.0	3.1	0.0	0.3	0.2
Facility 6	0.4	5.0	3.1	0.0	0.3	0.2
Peak Day - Worst Case Construction Emissions from each Facility	16.1	51.1	49.7	0.1	6.3	3.8
SIGNIFICACNE THRESHOLD FOR CONSTRUCTION	75	100	550	150	150	55

Notes:

1. The emissions are estimated using CalEEMod.
2. Construction activities at each Facility are expected to occur on different days in multiple stages.
3. This analysis is conservative as minimal overlap is expected to occur among the six affected facilities.

GHG Emissions Summary

PAR 1135 Requirement	CO2, MT/yr	CH4, MT/yr	N2O, MT/yr	CO2e, MT/yr	Amortized CO2e (MT/yr)
Facility 1	5.46	0.00	0.0	5.50	
Facility 2	8.57	0.00	0.0	8.61	
Facility 3	761	0.12	0.0	764	
Facility 4	1.4	0.0	0.0	1.4	
Facility 5	6.8	0.0	0.0	6.9	
Facility 6	1.4	0.0	0.0	1.4	
Total Emissions During Construction	784	0	0	787	26.2

Total GHG Emissions Amortized over 30 Years

Notes:

1. The emissions are estimated using CalEEMod.

Gasoline Fuel Usage Estimations Summary

Category	gallon fuel consumed per year due to PAR 1135	mmgal	Baseline Year 2016 Estimated Basin Fuel Demand mmgal/yr	Total % Above Baseline
Facility 1	17.9			
Facility 2	35			
Facility 3	597			
Facility 4	17.9			
Facility 5	17.9			
Facility 6	17.9			
Total	703	0.000703022	6,997	0.00001%

Diesel Fuel Usage Estimations Summary

Category	gallon fuel consumed per year due to PAR 1135	mmgal	Baseline Year 2016 Estimated Basin Fuel Demand mmgal/yr	Total % Above Baseline
Facility 1	28.4			
Facility 2	647			
Facility 3	76,462			
Facility 4	28.4			
Facility 5	28.4			
Facility 6	28.4			
Total	77,223	0.077222804	749	0.0103%

APPENDIX C-2

CEQA Impact Evaluations – Assumptions and Calculations

Operations Summary

Appendix C
 CEQA Operational Impact Evaluations - Assumptions and Calculations
 (10/12/2018 rev)

Emissions Summary - Operations

PAR 1135 Requirement	CO, lb/day	NOx, lb/day	PM10, lb/day	PM2.5, lb/day	VOC, lb/day	SOX, lb/day	CO2, MT/yr	CH4, MT/yr	N2O, MT/yr	CO2e, MT/yr
Facility 1	0.34	0.52	0.03	0.02	0.08	0.00	0.54	0.00	0.00	0.54
Facility 3	0.34	0.52	0.03	0.02	0.08	0.00	2.68	0.00	0.00	2.68
Facility 4	0.34	0.52	0.03	0.02	0.08	0.00	0.13	0.00	0.00	0.13
Facility 5	0.34	0.52	0.03	0.02	0.08	0.00	0.98	0.00	0.00	0.98
Facility 6	0.34	0.52	0.03	0.02	0.08	0.00	0.13	0.00	0.00	0.13
Daily Peak Construction Emissions	1.35	2.08	0.14	0.08	0.31	0.01	4.46	0.00	0.00	4.46
SIGNIFICACNE THRESHOLD FOR OPERATION	550	55	150	55	55	150				

0.15 Amortized over 30 Years

Note
 1. Facility 2 is assumed to not create any new operational impacts.

Diesel Fuel Usage Estimations Summary

Category	gallon fuel consumed per year due to PAR 1135	mmgal	Baseline Year 2016 Estimated Basin Fuel Demand	Total % Above Baseline
Facility 1	205			
Facility 2	-			
Facility 3	1026			
Facility 4	68			
Facility 5	376			
Facility 6	68			
Total	1744	0.00174359	749	0.0002%

GHG Emissions Summary

PAR 1135 Requirement	CO2e, MT/yr	Amortized CO2e (MT/yr)
Facility 1	0.1	
Facility 2	-	
Facility 3	0.1	
Facility 4	0.1	
Facility 5	0.1	
Facility 6	0.1	
Total Emissions During Operation	0.4	0.01

Total GHG Emissions Amortized over 30 Years

Notes:
 1. The emissions are estimated using CalEEMod.

APPENDIX C-3

CEQA Impact Evaluations – Assumptions and Calculations

Construction (Facility 1)

Appendix C-3
CEQA Construction Impact Evaluations - Facility 1
(9/6/2018 rev)

Criteria Pollutant Emissions - Facility 1 SCR Catalyst Replacement

PAR 1135 Requirement	VOC (lbs/day)	NOx (lbs/day)	CO (lbs/day)	SOx (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)
1 SCR Catalyst Replacement	0.4	5.0	3.1	0.0	0.3	0.2
4 SCR Catalyst Replacement	1.7	20.2	12.2	0.0	1.1	0.9
Daily Peak Construction Emissions	0.4	5.0	3.1	0.0	0.3	0.2
SIGNIFICANCE THRESHOLD FOR CONSTRUCTION	75	100	550	150	150	55

Notes:

- The emissions are estimated using CalEEMod.
- SCR replacement is expected to occur on different days in multiple stages.

GHG Emissions Summary - Facility 1 SCR Catalyst Replacement

PAR 1135 Requirement	CO2, MT/yr	CH4, MT/yr	N2O, MT/yr	CO2e, MT/yr
1 SCR Catalyst Replacement	1.36	0.00	0.00	1.37
4 SCR Catalyst Replacement	5.5	0.0	0.0	5.5
Total Emissions During Construction	5.5	0.0	0.0	5.5

0.18 Amortized Over 30 Years

Notes:

- The emissions are estimated using CalEEMod.

Gasoline Fuel Usage Estimations

Category	EPA/NHTSA Fuel Consumption				gallon fuel consumed per year due to PAR 1135	mmgal
	gal/1,000 ton-mile	ton	1ton-m/g	mpg		
LDA/LDT1/LDT2				21.6	4.1	
MDT				6.6	13.8	
TOTAL				17.9	17.9	1.78685E-05

Baseline Year 2016 Estimated Basin Fuel Demand mmgal/yr
Total % Above Baseline

6,997 0.0000026% Gasoline

Diesel Fuel Usage Estimations

Category	EPA/NHTSA Fuel Consumption				gallon fuel consumed per year due to PAR 1135	mmgal
	gal/1,000 ton-mile	ton	1ton-m/g	mpg		
HDT				5.85	6.84	
TOTAL				6.84	6.84	6.83819E-06

Baseline Year 2016 Estimated Basin Fuel Demand mmgal/yr
Total % Above Baseline

749 0.0000009% Diesel

Diesel Fuel Usage Estimations

Off-Road Equipment Type	Amount	Daily Usage Hours	HP	gal/hr	gals
Forklift	1	4	89	0.85	3.4
Aerial Lift	1	4	97	1.23	4.9
Cranes	1	4	231	3.30	13.2
TOTAL				21.6	21.6

mmgal

Baseline Year 2016 Estimated Basin Fuel Demand mmgal/yr
Total % Above Baseline

749 0.0000029% Diesel

References:

- National Highway Traffic Safety Administration (NHTSA) vocational vehicle standards, https://www.dieselnet.com/standards/us/fe_hd.php
- EPA Fuel Economy report: <https://www.epa.gov/fueleconomy/trends-report>
- California Annual Retail Fuel Outlet Report Results (CEC-A15) Spreadsheets http://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html
- U.S. Department of Energy, Average Fuel Economy of Major Vehicle Categories. <https://www.afdc.energy.gov/data/10310>
- Fuel estimates (gal/hr) from EMFAC2017.

APPENDIX C-4

CEQA Impact Evaluations – Assumptions and Calculations

Operation (Facility 1)

Appendix C-4
CEQA Impact Evaluations - Assumptions and Calculations
 (9/6/2018 rev)

Operational Emissions Summary - Facility 1

PAR 1135	CO, lb/day	NOx, lb/day	PM10, lb/day	PM2.5, lb/day	VOC, lb/day	SOX, lb/day
Increased Delivery Trucks	0.34	0.52	0.03	0.02	0.08	0.00
Total	0.34	0.52	0.03	0.02	0.08	0.00

By Vehicle Class	CO, lb/day	NOx, lb/day	PM10, lb/day	PM2.5, lb/day	VOC, lb/day	SOX, lb/day	CO2, MT/yr	CH4, MT/yr	N2O, MT/yr	CO2e, MT/yr
Diesel Delivery Trucks (T6 Construction Truck)	0.34	0.52	0.03	0.02	0.08	0.00	0.54	0.00	0.00	0.54
Total	0.34	0.52	0.03	0.02	0.08	0.00	0.54	0.00	0.00	0.54

All sites	
Max. # used/day	Max. # day used/yr
1	6

- Note:
 1. Peak daily trips assume one new ammonia delivery occurs at Facility 1. Truck trip distances to deliver ammonia are assumed to be 100 miles round-trip
 2. No additional employees are anticipated to be needed to operate the replaced SCR catalyst; the existing work force at Facility 1 is expected to be sufficient. As such, no workers' travel emissions are anticipated from the operation of the replaced SCR catalyst.
 3. It is assumed medium-heavy duty diesel in-state construction trucks would be used to deliver ammonia and catalyst.

Delivery Trucks (Ammonia and Catalyst) - T6 in-state construction heavy (T6) - each

	CO	NOx	PM10	PM2.5	VOC	SOX	CO2	CH4	N2O	CO2e
lb/mile	0.0034	0.0052	0.0003	0.0002	0.0008	0.00002	1.97	0.00		1.97
lb/day, MT/day for GHG	0.34	0.52	0.03	0.02	0.08	0.002	0.09	0.00	0.00	0.09

VMT, mile/day
100.0

Emission Factors: from EMFAC2017, EPA AP-42

0.0030

Amortized over 30 Years

Diesel Fuel Usage Estimations

Category	EPA/NHTSA Fuel Consumption				gallon fuel consumed per year due to PAR 1135
	gal/1,000 ton-mile	ton	1ton-m/g	mpg	
HDT				5.9	205
TOTAL				205	205

Baseline Year 2016	
Estimated Basin Fuel Demand	mmgal/yr
Total % Above Baseline	0.000274%
Diesel	

- References:
 National Highway Traffic Safety Administration (NHTSA) vocational vehicle standards, https://www.dieselnet.com/standards/us/fe_hd.php
 EPA Fuel Economy report: <https://www.epa.gov/fueleconomy/trends-report>
 California Annual Retail Fuel Outlet Report Results (CEC-A15) Spreadsheets http://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html
 U.S. Department of Energy, Average Fuel Economy of Major Vehicle Categories. <https://www.afdc.energy.gov/data/10310>

APPENDIX C-5

CEQA Impact Evaluations – Assumptions and Calculations

Construction (Facility 2)

Appendix C-5

CEQA Construction Impact Evaluations - Facility 2
(9/6/2018 rev)

Emissions Summary - Facility 2

PAR 1135 Requirement	VOC (lbs/day)	NOx (lbs/day)	CO (lbs/day)	SOx (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)
1 Engine Demolition and Installation	4.3	40	27	0.1	3.4	2.3
Daily Peak Construction Emissions	4.3	40	27	0.1	3.4	2.3
SIGNIFICACNE THRESHOLD FOR CONSTRUCTION	75	100	550	150	150	55

Notes:

- The emissions are estimated using CalEEMod.
- Equipment demolition and installation is expected to occur on different days in multiple stages.
- This analysis is conservative as minimal overlap is expected to occur among the installation of each internal combustion engine.

GHG Emissions Summary - Facility 2

PAR 1135 Requirement	CO2, MT/yr	CH4, MT/yr	N2O, MT/yr	CO2e, MT/yr
1 Engine Installation	3.38	0.00	0.000	3.40
Total Emissions During Construction	3.38	0.00	0.00	3.40

0.11329 Amortized over 30 Years

Notes:

- The emissions are estimated using CalEEMod.

Gasoline Fuel Usage Estimations

Category	EPA/NHTSA Fuel Consumption				gallon fuel consumed per year due to PAR 1135	mmgal	Baseline Year 2016 Estimated Basin Fuel Demand mmgal/yr	Total % Above Baseline
	gal/1,000 ton-mile	ton	1ton-m/g	mpg				
LDA/LDT1/LDT2				21.6	24.5			
MDT				6.6	10.4			
TOTAL				34.8	34.8	3.48456E-05	6,997	0.0000050% Gasoline

Diesel Fuel Usage Estimations

Category	EPA/NHTSA Fuel Consumption				gallon fuel consumed per year due to PAR 1135	mmgal	Baseline Year 2016 Estimated Basin Fuel Demand mmgal/yr	Total % Above Baseline
	gal/1,000 ton-mile	ton	1ton-m/g	mpg				
HDT				5.85	34.19			
TOTAL				34.19	34.19	3.41909E-05	749	0.0000046% Diesel

Diesel Fuel Usage Estimations

Off-Road Equipment Type	Amount	Daily Usage Hours	HP	gal/hr	gal	mmgal	Baseline Year 2016 Estimated Basin Fuel Demand mmgal/yr	Total % Above Baseline
Concrete/Industrial Saws	1	8	81	1.39	11.1			
Cranes	1	7	81	1.31	9.2			
Cranes	1	7	231	3.30	23.1			
Forklifts	6	7	97	0.85	35.9			
Generator Sets	2	7	84	1.40	19.6			
Rubber Tired Dozers	1	1	247	4.40	4.4			
Rubber Tired Loaders	2	7	247	3.88	54.3			
Tractors/Loaders/Backhoes	4	8	97	1.59	50.9			
Cement and Mortar Mixers	1	3	9	0.33	1.0			
Pavers	1	4	130	3.38	13.5			
Paving Equipment	1	4	132	2.67	10.7			
Rollers	1	2	80	1.69	3.4			
TOTAL				237	237	0.000237127	749	0.000032% Diesel

References:

- National Highway Traffic Safety Administration (NHTSA) vocational vehicle standards, https://www.dieselnet.com/standards/us/fe_hd.php
- EPA Fuel Economy report: <https://www.epa.gov/fueleconomy/trends-report>
- California Annual Retail Fuel Outlet Report Results (CEC-A15) Spreadsheets http://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html
- U.S. Department of Energy, Average Fuel Economy of Major Vehicle Categories. <https://www.afdc.energy.gov/data/10310>
- Fuel estimates (gal/hr) from EMFAC2017.

Appendix C-5
CEQA Construction Impact Evaluations - Facility 2
 (9/6/2018 rev)

Emissions Summary - Facility 2: Barge Emissions

by Engine Type	VOC (lbs/day)	NOx (lbs/day)	CO (lbs/day)	SOx (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)
Main Engine	1.2	9.5	14	0.08	0.17	1.46
Auxiliary Engines (2)	0.1	0.7	8.2	0.02	0.02	0.02
Daily Peak Construction Emissions	1.3	10	22	0.10	0.19	1.47
SIGNIFICACNE THRESHOLD FOR CONSTRUCTION	75	100	550	150	150	55

Hours/Day	8
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- Notes:
1. The main and auxiliary engine emissions for VOC, NOx, and PM10 are estimated using The Carl Moyer Program Guidelines 2017 Revisions: Appendix C: Cost-Effectiveness Calculation Methodology: Formula C-6 Estimated Annual Emissions Based on Hours of Operation (tons/yr)
 2. The main and auxiliary engine emissions for CO, SOx, and PM2.5 are estimated using the SMAQMD Harbor craft, Dredge and Barge Emission Factor Calculator
 3. Peak daily trips assume one round trip between the Port of Los Angeles and Avalon, approximately a distance of 22 miles each way or four hours per trip.
 4. Both engines use diesel fuel.

GHG Emissions Summary - Facility 2: Barge Emissions

PAR 1135 Requirement	CO2, MT/yr	CH4, MT/yr	N2O, MT/yr	CO2e, MT/yr
Main Engine	4.26	0.00	0.00	4.28
Auxiliary Engines (2)	0.93	0.00	0.00	0.93
Total Emissions During Construction	5.19	0.00	0.00	5.21

0.1736696 Amortized over 30 Years

- Notes:
1. The main and auxiliary engine emissions for CO2, CH4, N2O, and CO2e are estimated using the SMAQMD Harbor craft, Dredge and Barge Emission Factor Calculator

Diesel Fuel Usage Estimations

Category					gallon fuel consumed per year due to PAR 1135
Main Engine					348
Auxiliary Engines (2)					28
TOTAL					376

mmgal	Baseline Year 2016 Estimated Basin Fuel Demand	Total % Above Baseline
0.000375961	749 mmgal/yr	0.000050% Diesel

- Notes:
1. The total barge diesel fuel consumption is estimated by using the engine fuel use equation from Appendix A: Emission Calculations - Final Negative Declaration for: Petro-Diamond Terminal Company Marine Terminal Permit Modification Project, July 2008

APPENDIX C-6

CEQA Impact Evaluations – Assumptions and Calculations

Construction (Facility 3)

Appendix C-6

CEQA Construction Impact Evaluations - Facility 3

(9/6/2018 rev)

Emissions Summary - Facility 3

PAR 1135 Requirement	VOC (lbs/day)	NOx (lbs/day)	CO (lbs/day)	SOx (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)
3 Boiler to 3 Turbine Repower	16	51	22	0.1	6.3	3.3
Daily Peak Construction Emissions	16	51	22	0.1	6.3	3.3
SIGNIFICACNE THRESHOLD FOR CONSTRUCTION	75	100	550	150	150	55

Notes:

- The emissions are estimated using CalEEMod.
- Equipment demolition and installation is expected to occur on different days in multiple stages.

GHG Emissions Summary

PAR 1135 Requirement	CO2, MT/yr	CH4, MT/yr	N2O, MT/yr	CO2e, MT/yr
3 Boiler to 3 Turbine Repower	761	0.1	0.0	764
Total Emissions During Construction	761	0.1	0.0	764

25.4549267 Amortized over 30 Years

Notes:

- The emissions are estimated using CalEEMod.

Gasoline Fuel Usage Estimations

Category	EPA/NHTSA Fuel Consumption				gallon fuel consumed per year due to PAR 1135
	gal/1,000 ton-mile	ton	1ton-m/g	mpg	
LDA/LDT1/LDT2				21.64	404
MDT				6.64	193

mmgal
 Baseline Year 2016 Estimated Basin Fuel Demand mmgal/yr
 Total % Above Baseline
 597 0.000596703 6,997 0.0000085%

Diesel Fuel Usage Estimations

Category	EPA/NHTSA Fuel Consumption				gallon fuel consumed per year due to PAR 1135
	gal/1,000 ton-mile	ton	1ton-m/g	mpg	
HDT				5.85	76,041
TOTAL					76,041

mmgal
 Baseline Year 2016 Estimated Basin Fuel Demand mmgal/yr
 Total % Above Baseline
 0.076040654 749 0.01015% Diesel

References:

- National Highway Traffic Safety Administration (NHTSA) vocational vehicle standards, https://www.dieselnet.com/standards/us/fe_hd.php
 EPA Fuel Economy report: <https://www.epa.gov/fueleconomy/trends-report>
 California Annual Retail Fuel Outlet Report Results (CEC-A15) Spreadsheets http://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html

Diesel Fuel Usage Estimations

Off-Road Equipment Type	Amount	Daily Usage Hours	HP	gal/hr	gals
Concrete/Industrial Saws	1	8	81	1.4	11.1
Cranes	1	3	231	3.3	9.9
Excavators	2	3	247	4.3	25.9
Forklifts	2	2	97	0.9	3.4
Graders	1	1	187	4.6	4.6
Other General Industrial Equipment	2	2	97	1.4	5.5
Rollers	1	1	80	1.7	1.7
Rubber Tired Dozers	2	3	247	4.4	26.4
Tractors/Loaders/Backhoes	2	4	97	1.6	12.7
Tractors/Loaders/Backhoes	2	3	200	3.9	23.7
Concrete/Industrial Saws	1	8	81	1.4	11.1
Excavators	2	3	81	4.3	25.9
Graders	1	4	247	4.6	18.4
Rollers	1	4	97	1.7	6.8
Rubber Tired Dozers	1	4	247	4.4	17.6
Tractors/Loaders/Backhoes	1	4	200	3.9	15.8
Tractors/Loaders/Backhoes	2	3	97	1.6	9.5
Cranes	2	3	97	1.3	7.8
Cranes	2	1	250	3.3	6.6
Cranes	2	1	500	5.5	11.0
Excavators	2	1	99	4.3	8.6
Forklifts	2	6	89	0.9	10.3
Other Construction Equipment	2	1	350	8.2	16.4
Rollers	1	1	80	1.7	1.7
Rollers	1	1	65	1.4	1.4
Rubber Tired Loaders	2	2	147	2.8	11.2
Rubber Tired Loaders	1	2	140	2.8	5.6
Tractors/Loaders/Backhoes	1	1	79	1.6	1.6
Tractors/Loaders/Backhoes	2	1	97	1.6	3.2
Welders	1	4	35	1.2	4.8
Welders	1	4	38	1.2	4.8
Aerial Lifts	1	1	9	0.8	0.8
Cement and Mortar Mixers	4	6	9	0.3	7.9
Cranes	1	4	130	2.2	8.7
Forklifts	1	3	80	0.9	2.6
Pavers	2	5	97	1.7	17.3
Paving Equipment	2	5	132	2.7	26.7
Rollers	2	5	80	1.7	16.9
Tractors/Loaders/Backhoes	1	7	97	1.6	11.1
Air Compressors	1	4	78	1.0	4.1

mmgal
 Baseline
 Year 2016
 Estimated
 Basin Fuel
 Demand
 mmgal/yr
 Total % Above
 Baseline

TOTAL 421 0.000421254 749 0.0000562% Diesel

References:
 Fuel estimates (gal/hr) from EMFAC2017.

APPENDIX C-7

CEQA Impact Evaluations – Assumptions and Calculations

Operation (Facility 3)

Appendix C-7
CEQA Impact Evaluations - Assumptions and Calculations
(9/6/2018 rev)

Operational Emissions Summary - Facility 3

PAR 1135	CO, lb/day	NOx, lb/day	PM10, lb/day	PM2.5, lb/day	VOC, lb/day	SOX, lb/day
Increased Delivery Trucks	0.34	0.52	0.03	0.02	0.08	0.00
Total	0.34	0.52	0.03	0.02	0.08	0.00

By Vehicle Class	CO, lb/day	NOx, lb/day	PM10, lb/day	PM2.5, lb/day	VOC, lb/day	SOX, lb/day	CO2, MT/yr	CH4, MT/yr	N2O, MT/yr	CO2e, MT/yr
Diesel Delivery Trucks (T6 Construction Truck)	0.34	0.52	0.03	0.02	0.08	0.00	2.68	0.00	0.00	2.68
Total	0.34	0.52	0.03	0.02	0.08	0.00	2.68	0.00	0.00	2.68

All sites	
Max. # used/day	Max. # day used/yr
1	30

- Note:
1. Peak daily trips assume one new delivery (ammonia or catalyst) occurs at Facility 3. Truck trip distances for deliveries are assumed to be 100 miles round-trip
 2. No additional employees are anticipated to be needed to operate the new turbines, SCRs, or new ammonia tank; the existing work force at Facility 3 is expected to be sufficient. As such, no workers' travel emissions are anticipated from the operation of the new turbines, SCRs, and ammonia tank.
 3. It is assumed medium-heavy duty diesel instate construction trucks would be used to deliver ammonia and catalyst

Delivery Trucks (Ammonia and Catalyst) - T6 instate construction heavy (T6) - each

	CO	NOx	PM10	PM2.5	VOC	SOX	CO2	CH4	N2O	CO2e
lb/mile	0.0034	0.0052	0.0003	0.0002	0.0008	0.0000	1.97	0.00	0.00	1.97
lb/day, MT/day for GHG	0.3379	0.5189	0.0348	0.0201	0.0771	0.0019	0.09	0.00	0.00	0.09

VMT, mile/day
100.0

Emission Factors: from EMFAC2017, EPA AP-42

0.0030

Amortized over 30 Years

Diesel Fuel Usage Estimations

Category	EPA/NHTSA Fuel Consumption				gallon fuel consumed per year due to PAR 1135
	gal/1,000 ton- mile	ton	1ton-m/g	mpg	
HDT				5.9	1026
TOTAL				1026	

Baseline Year
2016
Estimated
Basin Fuel
Demand
mmgal/yr

Total % Above
Baseline
0.00137%
Diesel

References:

- National Highway Traffic Administration (NHTSA) vocational vehicle standards, https://www.dieselnet.com/standards/us/fe_hd.php
- EPA Fuel Economy report: <https://www.epa.gov/fueleconomy/trends-report>
- California Annual Retail Fuel Outlet Report Results (CEC-A15) Spreadsheets http://www.energy.ca.gov/almanac/transportation_data/gasoline/p1ira_retail_survey.html
- U.S. Department of Energy, Average Fuel Economy of Major Vehicle Categories. <https://www.afdc.energy.gov/data/10310>

APPENDIX C-8

CEQA Impact Evaluations – Assumptions and Calculations

Construction (Facility 4)

Appendix C
 CEQA Construction Impact Evaluations - Facility 4
 (10/12/2018 rev)

Criteria Pollutant Emissions - Facility 4 SCR Catalyst Replacement

PAR 1135 Requirement	VOC (lbs/day)	NOx (lbs/day)	CO (lbs/day)	SOx (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)
1 SCR Catalyst Replacement	0.4	5.0	3.1	0.0	0.3	0.2
Daily Peak Construction Emissions	0.4	5.0	3.1	0.0	0.3	0.2
SIGNIFICANCE THRESHOLD FOR CONSTRUCTION	75	100	550	150	150	55

Notes:

- The emissions are estimated using CalEEMod.
- SCR replacement is expected to occur on different days in multiple stages.

GHG Emissions Summary - Facility 4 SCR Catalyst Replacement

PAR 1135 Requirement	CO2, MT/yr	CH4, MT/yr	N2O, MT/yr	CO2e, MT/yr
1 SCR Catalyst Replacement	1.36	0.00	0.00	1.37
Total Emissions During Construction	1.4	0.0	0.0	1.4

0.05 Amortized Over 30 Years

Notes:

- The emissions are estimated using CalEEMod.

Gasoline Fuel Usage Estimations

Category	EPA/NHTSA Fuel Consumption				gallon fuel consumed per year due to PAR 1135
	gal/1,000 ton-mile	ton	1ton-m/g	mpg	
LDA/LDT1/LDT2				21.6	4.1
MDT				6.6	13.8
TOTAL				17.9	17.9

Baseline Year 2016 Estimated Basin Fuel Demand mmgal/yr
 Total % Above Baseline
 1.78685E-05 6,997 0.0000026% Gasoline

Diesel Fuel Usage Estimations

Category	EPA/NHTSA Fuel Consumption				gallon fuel consumed per year due to PAR 1135
	gal/1,000 ton-mile	ton	1ton-m/g	mpg	
HDT				5.85	6.84
TOTAL				6.84	6.84

Baseline Year 2016 Estimated Basin Fuel Demand mmgal/yr
 Total % Above Baseline
 6.83819E-06 749 0.0000009% Diesel

Diesel Fuel Usage Estimations

Off-Road Equipment Type	Amount	Daily Usage Hours	HP	gal/hr	gals
Forklift	1	4	89	0.85	3.4
Aerial Lift	1	4	97	1.23	4.9
Cranes	1	4	231	3.30	13.2
TOTAL				21.6	21.6

Baseline Year 2016 Estimated Basin Fuel Demand mmgal/yr
 Total % Above Baseline
 2.15659E-05 749 0.0000029% Diesel

References:

- National Highway Traffic Safety Administration (NHTSA) vocational vehicle standards, https://www.dieselnetwork.com/standards/us/fe_hd.php
- EPA Fuel Economy report: <https://www.epa.gov/fueleconomy/trends-report>
- California Annual Retail Fuel Outlet Report Results (CEC-A15) Spreadsheets http://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html
- U.S. Department of Energy, Average Fuel Economy of Major Vehicle Categories. <https://www.afdc.energy.gov/data/10310>
- Fuel estimates (gal/hr) from EMFAC2017.

APPENDIX C-9

CEQA Impact Evaluations – Assumptions and Calculations

Operation (Facility 4)

Appendix C
CEQA Impact Evaluations - Assumptions and Calculations
(10/12/2018 rev)

Operational Emissions Summary - Facility 4

PAR 1135	CO, lb/day	NOx, lb/day	PM10, lb/day	PM2.5, lb/day	VOC, lb/day	SOX, lb/day
Increased Delivery Trucks	0.34	0.52	0.03	0.02	0.08	0.00
Total	0.34	0.52	0.03	0.02	0.08	0.00

All sites	
Max. # used/day	Max. # day used/yr
1	2

By Vehicle Class	CO, lb/day	NOx, lb/day	PM10, lb/day	PM2.5, lb/day	VOC, lb/day	SOX, lb/day	CO2, MT/yr	CH4, MT/yr	N2O, MT/yr	CO2e, MT/yr
Diesel Delivery Trucks (T6 Construction Truck)	0.34	0.52	0.03	0.02	0.08	0.00	0.13	0.00	0.00	0.13
Total	0.34	0.52	0.03	0.02	0.08	0.00	0.13	0.00	0.00	0.13

- Note:
 1. Peak daily trips assume one new ammonia delivery occurs at Facility 4. Truck trip distances to deliver ammonia are assumed to be 100 miles round-trip.
 2. No additional employees are anticipated to be needed to operate the replaced SCR catalyst; the existing work force at Facility 4 is expected to be sufficient. As such, no workers' travel emissions are anticipated from the operation of the replaced SCR catalyst.
 3. It is assumed medium-heavy duty diesel instate construction trucks would be used to deliver ammonia and catalyst.

Delivery Trucks (Ammonia and Catalyst) - T6 instate construction heavy (T6) - each

	CO	NOx	PM10	PM2.5	VOC	SOX	CO2	CH4	N2O	CO2e
lb/mile	0.0034	0.0052	0.0003	0.0002	0.0008	0.00002	1.97	0.00		1.97
lb/day, MT/day for GHG	0.34	0.52	0.03	0.02	0.08	0.002	0.09	0.00	0.00	0.09

VMT, mile/day
100.0

Emission Factors: from EMFAC2017, EPA AP-42

0.0030

Amortized over 30 Years

Diesel Fuel Usage Estimations

Category	EPA/NHTSA Fuel Consumption				gallon fuel consumed per year due to PAR 1135
	gal/1,000 ton-mile	ton	11ton-m/g	mpg	
HDT				5.9	68
TOTAL				68	68

Baseline Year 2016	
Estimated Basin Fuel Demand	mmgal/yr
Total % Above Baseline	0.000091%
Diesel	

References:

- National Highway Traffic Safety Administration (NHTSA) vocational vehicle standards, https://www.dieselnet.com/standards/us/fe_hd.php
 EPA Fuel Economy report: <https://www.epa.gov/fueleconomy/trends-report>
 California Annual Retail Fuel Outlet Report Results (CEC-A15) Spreadsheets http://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html
 U.S. Department of Energy, Average Fuel Economy of Major Vehicle Categories. <https://www.afdc.energy.gov/data/10310>

APPENDIX C-10

CEQA Impact Evaluations – Assumptions and Calculations

Construction (Facility 5)

Appendix C
 CEQA Construction Impact Evaluations - Facility 5
 (10/12/2018 rev)

Criteria Pollutant Emissions - Facility 1 SCR Catalyst Replacement

PAR 1135 Requirement	VOC (lbs/day)	NOx (lbs/day)	CO (lbs/day)	SOx (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)
1 SCR Catalyst Replacement	0.4	5.0	3.1	0.0	0.3	0.2
7 SCR Catalyst Replacement	3.0	35.3	21.4	0.0	1.9	1.6
Daily Peak Construction Emissions	0.4	5.0	3.1	0.0	0.3	0.2
SIGNIFICANCE THRESHOLD FOR CONSTRUCTION	75	100	550	150	150	55

Notes:

- The emissions are estimated using CalEEMod.
- SCR replacement is expected to occur on different days in multiple stages.

GHG Emissions Summary - Facility 1 SCR Catalyst Replacement

PAR 1135 Requirement	CO2, MT/yr	CH4, MT/yr	N2O, MT/yr	CO2e, MT/yr
1 SCR Catalyst Replacement	1.36	0.00	0.00	1.37
7 SCR Catalyst Replacement	6.8	0.0	0.0	6.9
Total Emissions During Construction	6.8	0.0	0.0	6.9

0.23 Amortized Over 30 Years

Notes:

- The emissions are estimated using CalEEMod.

Gasoline Fuel Usage Estimations

Category	EPA/NHTSA Fuel Consumption				gallon fuel consumed per year due to PAR 1135	mmgal	Baseline Year 2016 Estimated Basin Fuel Demand mmgal/yr	Total % Above Baseline
	gal/1,000 ton-mile	ton	1ton-m/g	mpg				
LDA/LDT1/LDT2				21.6	4.1			
MDT				6.6	13.8			
TOTAL				17.9	17.9	1.78685E-05	6,997	0.0000026% Gasoline

Diesel Fuel Usage Estimations

Category	EPA/NHTSA Fuel Consumption				gallon fuel consumed per year due to PAR 1135	mmgal	Baseline Year 2016 Estimated Basin Fuel Demand mmgal/yr	Total % Above Baseline
	gal/1,000 ton-mile	ton	1ton-m/g	mpg				
HDT				5.85	6.84			
TOTAL				6.84	6.84	6.83819E-06	749	0.0000009% Diesel

Diesel Fuel Usage Estimations

Off-Road Equipment Type	Amount	Daily Usage Hours	HP	gal/hr	gals	mmgal	Baseline Year 2016 Estimated Basin Fuel Demand mmgal/yr	Total % Above Baseline
Forklift	1	4	89	0.85	3.4			
Aerial Lift	1	4	97	1.23	4.9			
Cranes	1	4	231	3.30	13.2			
TOTAL				21.6	21.6	2.15659E-05	749	0.0000029% Diesel

References:

- National Highway Traffic Safety Administration (NHTSA) vocational vehicle standards, https://www.dieselnet.com/standards/us/fe_hd.php
- EPA Fuel Economy report: <https://www.epa.gov/fueleconomy/trends-report>
- California Annual Retail Fuel Outlet Report Results (CEC-A15) Spreadsheets http://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html
- U.S. Department of Energy, Average Fuel Economy of Major Vehicle Categories. <https://www.afdc.energy.gov/data/10310>
- Fuel estimates (gal/hr) from EMFAC2017.

APPENDIX C-11

CEQA Impact Evaluations – Assumptions and Calculations

Operation (Facility 5)

Appendix C
CEQA Impact Evaluations - Assumptions and Calculations
(10/12/2018 rev)

Operational Emissions Summary - Facility 5

PAR 1135	CO, lb/day	NOx, lb/day	PM10, lb/day	PM2.5, lb/day	VOC, lb/day	SOX, lb/day
Increased Delivery Trucks	0.34	0.52	0.03	0.02	0.08	0.00
Total	0.34	0.52	0.03	0.02	0.08	0.00

All sites	
Max. # used/day	Max. # day used/yr
1	11

By Vehicle Class	CO, lb/day	NOx, lb/day	PM10, lb/day	PM2.5, lb/day	VOC, lb/day	SOX, lb/day	CO2, MT/yr	CH4, MT/yr	N2O, MT/yr	CO2e, MT/yr
Diesel Delivery Trucks (T6 Construction Truck)	0.34	0.52	0.03	0.02	0.08	0.00	0.98	0.00	0.00	0.98
Total	0.34	0.52	0.03	0.02	0.08	0.00	0.98	0.00	0.00	0.98

- Note:
1. Peak daily trips assume one new ammonia delivery occurs at Facility 5. Truck trip distances to deliver ammonia are assumed to be 100 miles round-trip.
 2. No additional employees are anticipated to be needed to operate the replaced SCR catalyst; the existing work force at Facility 1 is expected to be sufficient. As such, no workers' travel emissions are anticipated from the operation of the replaced SCR catalyst.
 3. It is assumed medium-heavy duty diesel instate construction trucks would be used to deliver ammonia and catalyst.

Delivery Trucks (Ammonia and Catalyst) - T6 instate construction heavy (T6) - each

	CO	NOx	PM10	PM2.5	VOC	SOX	CO2	CH4	N2O	CO2e
lb/mile	0.0034	0.0052	0.0003	0.0002	0.0008	0.00002	1.97	0.00		1.97
lb/day, MT/day for GHG	0.34	0.52	0.03	0.02	0.08	0.002	0.09	0.00	0.00	0.09

VMT, mile/day
100.0

Emission Factors: from EMFAC2017, EPA AP-42

0.0030

Amortized over 30 Years

Diesel Fuel Usage Estimations

Category	EPA/NHTSA Fuel Consumption				gallon fuel consumed per year due to PAR 1135
	gal/1,000 ton-mile	ton	11ton-m/g	mpg	
HDT				5.9	376
TOTAL				376	376

Baseline Year 2016	
Estimated Basin Fuel Demand	mmgal/yr
Total % Above Baseline	0.000502%
Diesel	

References:

- National Highway Traffic Safety Administration (NHTSA) vocational vehicle standards, https://www.dieselnet.com/standards/us/fe_hd.php
- EPA Fuel Economy report: <https://www.epa.gov/fueleconomy/trends-report>
- California Annual Retail Fuel Outlet Report Results (CEC-A15) Spreadsheets http://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html
- U.S. Department of Energy, Average Fuel Economy of Major Vehicle Categories. <https://www.afdc.energy.gov/data/10310>

APPENDIX C-12

CEQA Impact Evaluations – Assumptions and Calculations

Construction (Facility6)

Appendix C
 CEQA Construction Impact Evaluations - Facility 6
 (10/12/2018 rev)

Criteria Pollutant Emissions - Facility 6 SCR Catalyst Replacement

PAR 1135 Requirement	VOC (lbs/day)	NOx (lbs/day)	CO (lbs/day)	SOx (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)
1 SCR Catalyst Replacement	0.4	5.0	3.1	0.0	0.3	0.2
Daily Peak Construction Emissions	0.4	5.0	3.1	0.0	0.3	0.2
SIGNIFICANCE THRESHOLD FOR CONSTRUCTION	75	100	550	150	150	55

Notes:

- The emissions are estimated using CalEEMod.
- SCR replacement is expected to occur on different days in multiple stages.

GHG Emissions Summary - Facility 6 SCR Catalyst Replacement

PAR 1135 Requirement	CO2, MT/yr	CH4, MT/yr	N2O, MT/yr	CO2e, MT/yr
1 SCR Catalyst Replacement	1.36	0.00	0.00	1.37
Total Emissions During Construction	1.4	0.0	0.0	1.4

0.05 Amortized Over 30 Years

Notes:

- The emissions are estimated using CalEEMod.

Gasoline Fuel Usage Estimations

Category	EPA/NHTSA Fuel Consumption				gallon fuel consumed per year due to PAR 1135
	gal/1,000 ton-mile	ton	1ton-m/g	mpg	
LDA/LDT1/LDT2				21.6	4.1
MDT				6.6	13.8
TOTAL				17.9	17.9

Baseline Year 2016 Estimated Basin Fuel Demand mmgal/yr
 Total % Above Baseline
 1.78685E-05 6,997 0.0000026% Gasoline

Diesel Fuel Usage Estimations

Category	EPA/NHTSA Fuel Consumption				gallon fuel consumed per year due to PAR 1135
	gal/1,000 ton-mile	ton	1ton-m/g	mpg	
HDT				5.85	6.84
TOTAL				6.84	6.84

Baseline Year 2016 Estimated Basin Fuel Demand mmgal/yr
 Total % Above Baseline
 6.83819E-06 749 0.0000009% Diesel

Diesel Fuel Usage Estimations

Off-Road Equipment Type	Amount	Daily Usage Hours	HP	gal/hr	gals
Forklift	1	4	89	0.85	3.4
Aerial Lift	1	4	97	1.23	4.9
Cranes	1	4	231	3.30	13.2
TOTAL				21.6	21.6

Baseline Year 2016 Estimated Basin Fuel Demand mmgal/yr
 Total % Above Baseline
 2.15659E-05 749 0.0000029% Diesel

References:

- National Highway Traffic Safety Administration (NHTSA) vocational vehicle standards, https://www.dieselnetwork.com/standards/us/fe_hd.php
- EPA Fuel Economy report: <https://www.epa.gov/fueleconomy/trends-report>
- California Annual Retail Fuel Outlet Report Results (CEC-A15) Spreadsheets http://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html
- U.S. Department of Energy, Average Fuel Economy of Major Vehicle Categories. <https://www.afdc.energy.gov/data/10310>
- Fuel estimates (gal/hr) from EMFAC2017.

APPENDIX C-13

CEQA Impact Evaluations – Assumptions and Calculations

Operation (Facility 6)

Appendix C
CEQA Impact Evaluations - Assumptions and Calculations
(10/12/2018 rev)

Operational Emissions Summary - Facility 6

PAR 1135	CO, lb/day	NOx, lb/day	PM10, lb/day	PM2.5, lb/day	VOC, lb/day	SOX, lb/day
Increased Delivery Trucks	0.34	0.52	0.03	0.02	0.08	0.00
Total	0.34	0.52	0.03	0.02	0.08	0.00

By Vehicle Class	CO, lb/day	NOx, lb/day	PM10, lb/day	PM2.5, lb/day	VOC, lb/day	SOX, lb/day	CO2, MT/yr	CH4, MT/yr	N2O, MT/yr	CO2e, MT/yr
Diesel Delivery Trucks (T6 Construction Truck)	0.34	0.52	0.03	0.02	0.08	0.00	0.13	0.00	0.00	0.13
Total	0.34	0.52	0.03	0.02	0.08	0.00	0.13	0.00	0.00	0.13

All sites	
Max. # used/day	Max. # day used/yr
1	2

- Note:
1. Peak daily trips assume one new ammonia delivery occurs at Facility 4. Truck trip distances to deliver ammonia are assumed to be 100 miles round-trip.
 2. No additional employees are anticipated to be needed to operate the replaced SCR catalyst; the existing work force at Facility 4 is expected to be sufficient. As such, no workers' travel emissions are anticipated from the operation of the replaced SCR catalyst.
 3. It is assumed medium-heavy duty diesel instate construction trucks would be used to deliver ammonia and catalyst.

Delivery Trucks (Ammonia and Catalyst) - T6 instate construction heavy (T6) - each

	CO	NOx	PM10	PM2.5	VOC	SOX	CO2	CH4	N2O	CO2e
lb/mile	0.0034	0.0052	0.0003	0.0002	0.0008	0.00002	1.97	0.00	0.00	1.97
lb/day, MT/day for GHG	0.34	0.52	0.03	0.02	0.08	0.002	0.09	0.00	0.00	0.09

VMT, mile/day
100.0

Emission Factors: from EMFAC2017, EPA AP-42

0.0030

Amortized over 30 Years

Diesel Fuel Usage Estimations

Category	EPA/NHTSA Fuel Consumption				gallon fuel consumed per year due to PAR 1135	mmgal	Baseline Year 2016 Estimated Basin Fuel Demand mmgal/yr	Total % Above Baseline
	gal/1,000 ton-mile	ton	1ton-m/g	mpg				
HDT				5.9	68			
TOTAL				68	6.8376E-05	749	0.000091%	Diesel

References:

- National Highway Traffic Safety Administration (NHTSA) vocational vehicle standards, https://www.dieselnet.com/standards/us/fe_hd.php
- EPA Fuel Economy report: <https://www.epa.gov/fueleconomy/trends-report>
- California Annual Retail Fuel Outlet Report Results (CEC-A15) Spreadsheets http://www.energy.ca.gov/almanac/transportation_data/gasoline/pilira_retail_survey.html
- U.S. Department of Energy, Average Fuel Economy of Major Vehicle Categories. <https://www.afdc.energy.gov/data/10310>

APPENDIX D

PAR 1135 List of Affected Facilities and NAICS Code

Appendix D: PAR 1135 List of Affected Facilities

Facility ID	Facility Name	Address	On List per Government Code 65962.5 (Envirostor)?	Distance from School (meters)	Distance from Sensitive Receptor (meters)	Located Within Two Miles of an Airport?
4477	So Cal Edison Co	1 Pebbly Beach Rd. Avalon CA 90704	No	1720	150	No
14502	City of Vernon, Vernon Gas & Electric	4990 Seville Ave. Vernon CA 90058	No	830	340	No
17104	SCE, Norwalk	10601 E Firestone Blvd Norwalk CA 90650	No	280	<1	No
25638	Burbank City, Burbank Water & Power	164 W Magnolia Blvd Burbank CA 91502	Yes	500	180	No
51003	SCE, Ontario	13568B Hamner Ave. Ontario CA 91761	No	1000	630	No
51475	SCE, Stanton	10670 Dale Ave. Stanton CA 90680	No	50	20	No
56940	City Of Anaheim/Comb Turbine Gen Station	1144 N. Kraemer Blvd Anaheim CA 92806	No	1300	880	No
115314	Long Beach Generation, LLC	2665 Pier S Ln Long Beach CA 90802	Yes	1930	1930	No
115315	NRG California South LP, Etiwanda Gen St	8996 Etiwanda Ave Rancho Cucamonga CA 91739	Yes	2920	770	No
115389	AES Huntington Beach, LLC	21730 Newland St Huntington Beach CA 92646	Yes	570	570	No
115394	AES Alamitos, LLC	690 N Studebaker Rd Long Beach CA 90803	No	140	140	No
115536	AES Redondo Beach, LLC	1100 N Harbor Dr Redondo Beach CA 90277	Yes	760	40	No
115663	El Segundo Power, LLC	301 Vista Del Mar El Segundo CA 90245	Yes	1600	700	Yes
127299	Wildflower Energy LP/Indigo Gen., LLC	63500 19th Ave North Palm Springs CA 92258	No	5300	1280	No
128243	Burbank City, Burbank Water & Power, SCPPA	164 W Magnolia Blvd Burbank CA 91502-1720	Yes	500	180	No
129810	City of Riverside Public Utilities Dept	2221 Eastridge Ave. Riverside CA 92507	No	920	520	No
129816	Inland Empire Energy Center, LLC	26226 Antelope Road Menifee CA 92585	No	120	240	No
139796	City of Riverside Public Utilities Dept	5901 Payton Riverside CA 92504	No	890	690	No
146536	Walnut Creek Energy, LLC	911 Bixby Dr City Of Industry CA 91745	Yes	770	320	No
149620	SCE, Rancho Cucamonga	12408 6th Street Rancho Cucamonga CA 91739	Yes	2570	1240	No
152707	Sentinel Energy Center LLC	15775 Melissa Lane Road North Palm Springs CA 92258	No	5480	720	No
153992	City of Anaheim / Canyon Power Plant	3071 E Miraloma Ave. Anaheim CA 92806	No	580	580	No
155474	Bicent (California) Malburg LLC	4963 S Soto St Vernon CA 90058-2911	No	810	750	No
160437	Southern California Edison	2492 W San Bernardino Ave Redlands CA 92374	Yes	780	20	No
172077	City of Colton	2040 Agua Mansa Rd Colton CA 92324	No	2810	1160	No
800074	LA City, DWP Haynes Generating Station	6801 2nd Street Long Beach CA 90803	No	690	50	No
800075	LA City, DWP Scattergood Generating Stn	12700 Vista Del Mar Playa Del Rey CA 90293	No	500	<1	Yes
800168	Pasadena City, DWP	72 E Glenarm St Pasadena CA 91105-3418	Yes	30	30	No
800170	LA City, DWP Harbor Generating Station	161 N Island Ave Wilmington CA 90744	No	30	30	No
800193	LA City, DWP Valley Generating Station	11801 Sheldon Street Sun Valley CA 91352	Yes	500	80	Yes
800327	Glendale City, Glendale Water And Power	800 Air Way Glendale CA 91201	No	820	60	No

Note: Distances between facilities and sensitive receptors were estimated using Google Maps from parcel line to parcel line and were rounded to the nearest tenth.

Appendix D: NAICS Codes for PAR 1135 Affected Industry

Description of Industry	NAICS Codes	Number of Units
Electric power generation, fossil fuel (e.g., coal, oil, gas)	221112	31

APPENDIX E

Hazards Analysis



RMP*Comp
RMP*Comp

Estimated Distance Calculation

Estimated distance to toxic endpoint: 0.1 miles (0.2 kilometers)

This is the downwind distance to the toxic endpoint specified for this regulated substance under the RMP Rule. Report all distances shorter than 0.1 mile as 0.1 mile, and all distances longer than 25 miles as 25 miles.

Scenario Summary

Chemical: Ammonia (water solution)
Initial concentration: 20 %
CAS number: 7664-41-7
Threat type: Toxic Liquid
Scenario type: Worst-case
Liquid temperature: 77 F
Quantity released: 12000 gallons

Mitigation measures:
Diked area: 519.75 square feet
Dike height: 4.5 feet

Release rate to outside air: 10.9 pounds per minute
Surrounding terrain type: Urban surroundings (many obstacles in the immediate area)
Toxic endpoint: 0.14 mg/L; basis: ERPG-2

Assumptions about this scenario

Wind speed: 1.5 meters/second (3.4 miles/hour)
Stability class: F
Air temperature: 77 degrees F (25 degrees C)

<https://cdxnodengn.epa.gov/cdx-rmp-maintain/action/rmp-comp/toxicLiquid>

APPENDIX F

Comment Letter Received on the Draft Mitigated SEA and Response to Comment

Comment Letter #1: Victoria Martin/Augustine Band of Cahuilla Indians

Comment Letter #1



AUGUSTINE BAND OF CAHUILLA INDIANS

PO Box 846 84-481 Avenue 54 Coachella CA 92236

Telephone: (760) 398-4722

Fax (760) 369-7161

Tribal Chairperson: Amanda Vance

Tribal Vice-Chairperson: William Vance

Tribal Secretary: Victoria Martin

September 24, 2018

Ryan Banuelos
South Coast AQMD
21865 Copley Drive
Diamond Bar, CA 91765

Re: Notice of Completion of a draft mitigated subsequent environmental assessment and Opportunity for public comment
PROJECT TITLE: Proposed Amended Rule 1135- Emissions of Oxides of Nitrogen From Electricity Generating Facilities

Dear Mr. Banuelos–

Thank you for the opportunity to offer input concerning the development of the above-identified project. We appreciate your sensitivity to the cultural resources that may be impacted by your project, and the importance of these cultural resources to the Native American peoples that have occupied the land surrounding the area of your project for thousands of years. Unfortunately, increased development and lack of sensitivity to cultural resources has resulted in many significant cultural resources being destroyed or substantially altered and impacted. Your invitation to consult on this project is greatly appreciated.

At this time we are unaware of specific cultural resources that may be affected by the proposed project. We encourage you to contact other Native American Tribes and individuals within the immediate vicinity of the project site that may have specific information concerning cultural resources that may be located in the area. We also encourage you to contract with a monitor who is qualified in Native American cultural resources identification and who is able to be present on-site full-time during the pre-construction and construction phase of the project. Please notify us immediately should you discover any cultural resources during the development of this project.

1-1

Very truly yours,

Victoria Martin
Tribal Secretary

Response to Comment Letter #1

Response 1-1

As part of releasing the Draft Mitigated SEA for public review and comment, the SCAQMD also provided a formal notice of the proposed project to all California Native American Tribes (Tribes) that requested to be on the Native American Heritage Commission's (NAHC) notification list. This notice provided an opportunity for Tribes to request a consultation with the SCAQMD in accordance with the requirements in Public Resources Code Section 21080.3.1. The SCAQMD did not receive any consultation requests from Tribes relative to PAR 1135.



Proposed Amended Rule 1135 Emissions of Oxides of Nitrogen from Electricity Generating Facilities

Governing Board Meeting
November 2, 2018

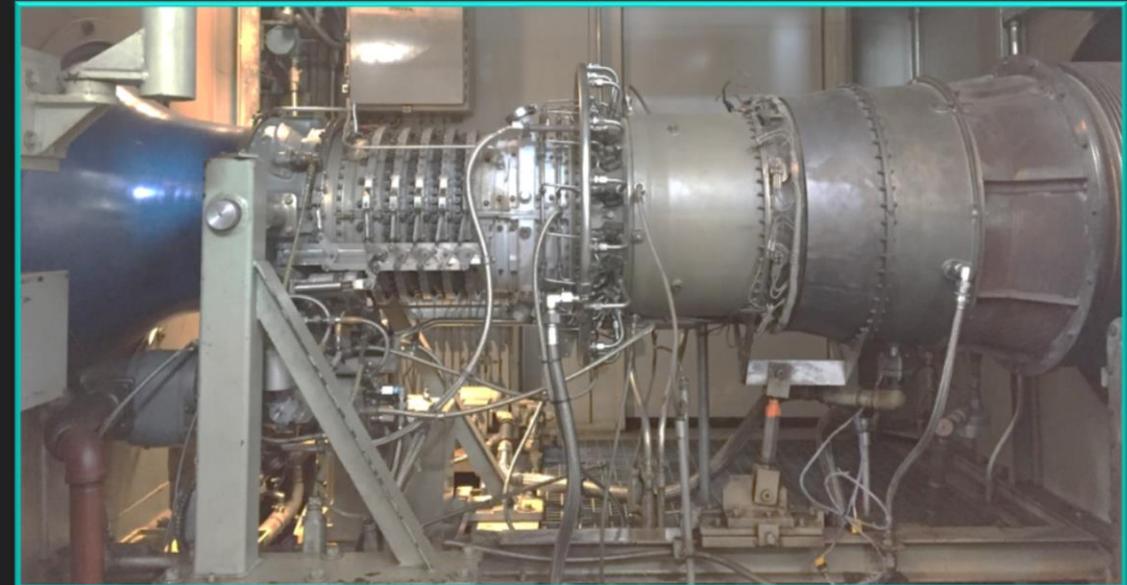
Background

- Rule 1135 was adopted in 1989 – applies to electric power generating systems
- Most electricity generating facilities entered RECLAIM in 1993
- In 2001, in response to the power crisis, Rule 2009 was adopted
 - Required installation of Best Available Retrofit Control Technology (BARCT) through compliance plans
 - More than 35 units repowered/replaced with new gas turbines resulting in 16 tons per day of NO_x reduced
 - Units at Santa Catalina Island are in RECLAIM, but not included in Rule 2009



Applicability

- Industry-specific rule
- Applies to 31 electricity generating facilities
 - 26 RECLAIM facilities and 5 non-RECLAIM facilities
- Covers the following combustion equipment:
 - Boilers
 - Combined cycle gas turbines
 - Simple cycle gas turbines
 - Diesel internal combustion engines (located on Santa Catalina Island)



Proposed Emission Limits

Boilers	5 ppmv NOx; 5 ppmv ammonia* (@ 3% O ₂)
Turbines – Combined Cycle and Duct Burners	2 ppmv NOx; 5 ppmv ammonia* (@ 15% O ₂)
Turbines – Simple Cycle	2.5 ppmv NOx; 5 ppmv ammonia* (@ 15% O ₂)
Diesel Internal Combustion Engines	45 ppmv NOx; 5 ppmv ammonia* (@ 15% O ₂)

* With Selective Catalytic Reduction

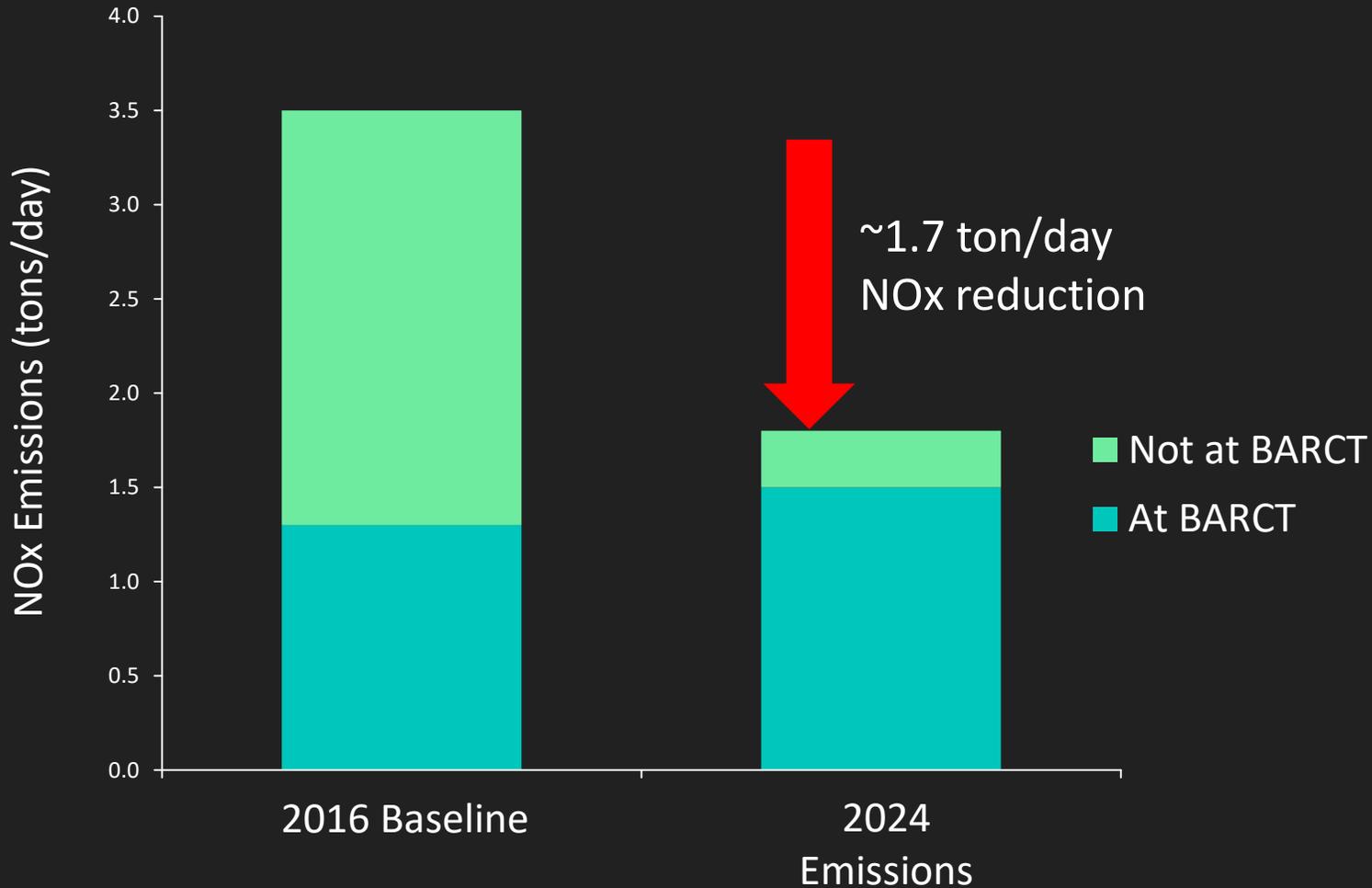
- For internal combustion engines – incorporate VOC, CO, and PM emission limits
- Effective date: January 1, 2024

Additional Provisions



- Units near Rule 1135 NO_x emissions limits
 - Units will be exempt from Rule 1135 NO_x emission limit, but must retain their current emission limit
- Low-use provisions
 - Units must remain below annual capacity thresholds and must incorporate low-use threshold in permit
- Internal combustion engines
 - To incentivize cleaner technologies, diesel internal combustion engines have an alternative compliance approach and a time extension of up to three years
 - Allows up to 8 - 10 years to meet emissions limits

Emission Reductions

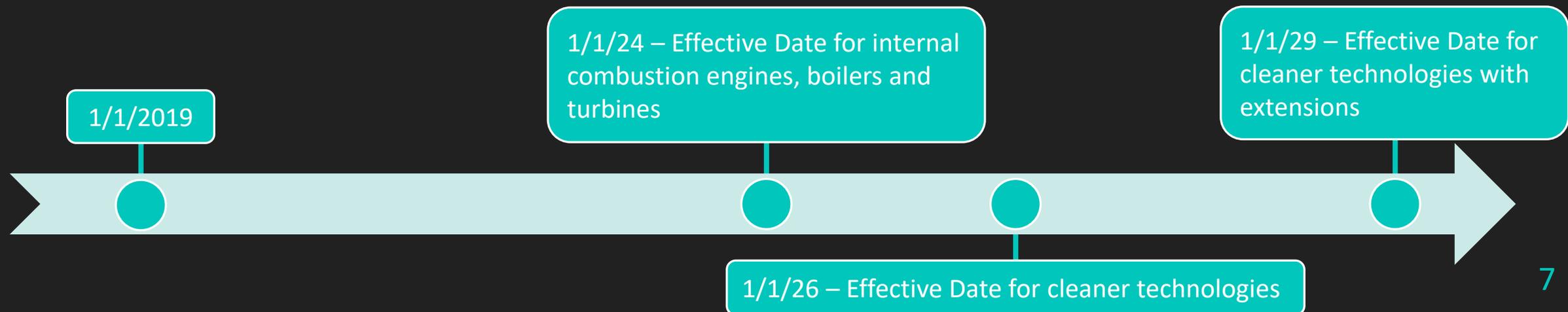


- EGFs emitted 3.5 tons per day of NOx in 2016*
 - 1.3 tons per day from equipment already at BARCT
- PAR 1135 will reduce about 1.7 tons per day
 - 1.6 tons per day from boilers
 - 0.1 tons per day from internal combustion engines

* Based on 2016 fuel usage and permit limits

Key Issue #1

- Southern California Edison: implementation schedule for Santa Catalina Island limits their compliance option to the installation of new diesel internal combustion engines – other cleaner technologies will require more time
- Response:
 - PAR 1135 allows up to 10 years to install cleaner technologies



Key Issue #2

- SCAQMD does not have the authority to require replacement as BARCT
- Response
 - BARCT can include the replacement of equipment
 - Statutory definition of BARCT supports a broad interpretation
 - Dictionary definitions do not preclude the view that BARCT can include equipment replacement
 - BARCT is not a limitation on SCAQMD's authority to adopt emission control requirements for stationary sources

Key Issue #3

- Facilities should not exit and BARCT rule amendments should be delayed until New Source Review (NSR) is resolved
 - Rule 2002 allows facilities to remain in RECLAIM until NSR is resolved
 - Rule 2001 allows facilities to exit RECLAIM before NSR is resolved provided that they meet the criteria to exit
 - Some stakeholders want to exit RECLAIM before NSR is resolved
 - Facilities can remain in RECLAIM to offset new and modified sources under RECLAIM NSR

Recommended Actions

- Adopt the Resolution:
 - Certifying Final Mitigated Subsequent Environmental Assessment
 - Amending Rule 1135



[↑ Back to Agenda](#)

BOARD MEETING DATE: November 2, 2018

AGENDA NO. 28

PROPOSAL: Determine that Proposed Rule 1407.1 – Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations Is Exempt from CEQA and Adopt Rule 1407.1

SYNOPSIS: Proposed Rule 1407.1 is an information gathering rule that will require a one-time source test and submittal of information to quantify arsenic, cadmium, chromium, hexavalent chromium and nickel emissions from chromium alloy melting operations. Information obtained will be used to establish emission standards and other provisions. Proposed Rule 1407.1 also includes requirements for metals composition testing, recordkeeping, and reporting.

COMMITTEE: Stationary Source, September 21, 2018, Reviewed

RECOMMENDED ACTIONS:

Adopt the attached Resolution:

1. Determining that Proposed Rule 1407.1 – Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations is exempt from the requirements of the California Environmental Quality Act; and
2. Adopting Rule 1407.1 – Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations.

Wayne Natri
Executive Officer

Background

Metal melting operations, such as smelting, tinning, galvanizing, and other miscellaneous processes where metals are processed in molten form, emit particulate matter, some of which are toxic air contaminants, including hexavalent chromium. Existing Rule 1407 – Emissions of Arsenic, Cadmium and Nickel from Non-Ferrous Metal Melting Operations, and Rule 1420 – Emissions Standard for Lead, currently address toxic air contaminant emissions from aluminum, aluminum alloys, brass, bronze, and lead melting operations. However, these rules do not regulate chromium alloys such as alloy steel, stainless steel, and super alloys. Proposed Rule (PR) 1407.1 – Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations, fills a regulatory gap by addressing metal melting of chromium alloys at 14 facilities. PR 1407.1 is a source-specific rule that gathers information to quantify hexavalent chromium, arsenic, cadmium, and nickel emissions from chromium alloy melting operations such as foundries and other metal melting facilities. This information gathered is needed to identify the appropriate level of pollution control for a future rule amendment proposal.

Public Process

Development of PR 1407.1 was conducted through a public process. SCAQMD has held seven working group meetings to discuss the provisions of the proposed rule. The Working Group originally met under Proposed Amended Rule (PAR) 1407 and had four Meetings. Based on industry stakeholder input, PAR 1407 was separated into two rulemakings: PAR 1407 and PR 1407.1. Staff has held three additional working group meetings since PR 1407.1 was separated. The seven working group meetings were held at the SCAQMD Headquarters in Diamond Bar on the following dates: September 5, 2017, November 9, 2017, January 30, 2018, April 25, 2018, June 6, 2018, July 10, 2018, and August 9, 2018. A Public Workshop was held on August 30, 2018. In addition, staff has also met individually with numerous facility operators.

Proposed Amendments

PR 1407.1 applies to facilities that melt chromium alloys, which is defined as a metal that is an alloy steel, stainless steel, superalloy, or any metal that is at least 0.5% chromium by weight. One of the main provisions in PR 1407.1 is the requirement of a one-time source test. Source testing of different furnaces is needed to fully capture the emissions that occur during the metal melting process so staff can develop an appropriate proposed emission standard. It is typical when developing a rule for an unregulated source category where there are very few source tests available, for staff to conduct source tests at facilities to establish an appropriate emission standard. Multiple requests to the working group, industry association, and to individual facilities have been made for staff to conduct source tests at no expense to the facility; however, no operators have agreed to SCAQMD conducted source tests. PR 1407.1 includes an optional provision where the SCAQMD will conduct source tests for up to three facilities at no cost to the facility.

PR 1407.1 requires submittal of a source test protocol that will include identification of the test methods that will be used during the source test. The proposed rule specifies the accepted test methods for the various toxic air contaminants and particulate matter, and also allows the operator to submit an alternative test method, provided it is approved by the Executive Officer. PR 1407.1 also requires submittal of information regarding facility operations, number and type of furnaces, composition of metals melted, and recordkeeping for a 12-month period.

Key Issues

Staff has worked with the Working Group, the California Metals Coalition, and the individual facilities to resolve key issues. At the request of industry representatives, the rulemaking was bifurcated for amendments to Rule 1407 and PR 1407.1. Staff agreed to collect additional emissions information for PR 1407.1 before proposing requirements for chromium alloy melting operations. There still remain two key issues: 1) Need and timing for PR 1407.1 and 2) Applicability of the Test Method 425 for testing hexavalent chromium from metal melting furnaces.

Need and Timing for Proposed Rule 1407.1

The California Metals Coalition and other industry stakeholders have commented that PR 1407.1 is not needed because staff has not shown that hexavalent chromium is formed during melting of chromium alloys and that staff should conduct testing at Cal Poly Pomona before proceeding with PR 1407.1. Staff has presented two SCAQMD source tests of metal melting furnaces and ten screening tests on metal heat treating and forging furnaces demonstrating that high-energy processes involving chromium alloys can generate hexavalent chromium emissions. Over the past month, staff has been working on a contract with Cal Poly Pomona to conduct emissions testing to provide additional information regarding the amount of hexavalent chromium generated during the melting process. PR 1407.1 is still needed to require source tests to quantify emissions on full scale production furnaces for the different types (electric or gas induction, vacuum induction, electric arc, crucible), and sizes of furnaces (up to 18,000 pounds as compared to Cal Poly Pomona's furnace which is a 48 pound electric induction furnace). Studies at Cal Poly Pomona could provide supplementary data and can be conducted in parallel with PR 1407.1. Waiting for the research to be completed would delay installation of pollution controls.

Applicability of the Test Method 425

The California Metals Coalition and other industry stakeholders have commented that CARB Method 425 – Determination of Total Chromium and Hexavalent Chromium Emissions from Stationary Sources has not been demonstrated to be applicable or appropriate for metal melting operations, and test method development should occur at Cal Poly Pomona. CARB Method 425 is CARB and U.S. EPA approved for determining hexavalent chromium and total chromium emissions from stationary sources. There is no evidence that CARB Method 425 is not an appropriate source test

method for metal melting operations. PR 1407.1 includes a provision for alternative sampling and analytical test methods with Executive Officer approval.

California Environmental Quality Act

Pursuant to the California Environmental Quality Act (CEQA) and SCAQMD Rule 110, the SCAQMD, as lead agency for the proposed project, has reviewed PR 1407.1 pursuant to: 1) CEQA Guidelines Section 15002(k) - General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA; and 2) CEQA Guidelines Section 15061 - Review for Exemption, procedures for determining if a project is exempt from CEQA. As provided in CEQA Guidelines Section 15306 - Information Collection, the proposed project is exempt because it will consist of basic data collection, research and resource evaluation activities and will not result in a serious or major disturbance to an environmental resource. CEQA Guidelines Section 15306 exempts such a project for information-gathering purposes, or as part of a study leading to future action which the agency has not yet taken. Staff has determined that it can be seen with certainty that there is no possibility that the proposed project may have a significant adverse effect on the environment. Therefore, the project is also considered to be exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Activities Covered by General Rule. Furthermore, the proposed project is considered categorically exempt because it contains requirements designed to protect or enhance the environment pursuant to CEQA Guidelines Section 15308 – Actions by Regulatory Agencies for Protection of the Environment. A Notice of Exemption will be prepared pursuant to CEQA Guidelines Section 15062 - Notice of Exemption. If the project is approved, the Notice of Exemption will be filed with the county clerks of Los Angeles, Orange, Riverside and San Bernardino counties.

Socioeconomic Analysis

The majority of the affected facilities are in the primary metal manufacturing sector (94%), including iron and steel mills and ferroalloy manufacturing, steel investment foundries, and steel foundries (except investment). The remaining facility is in fabricated metal product manufacturing. Of the 14 facilities identified, eight would be required to conduct source testing and all 14 facilities will be required to conduct Materials Composition Testing. Testing conducted in 2019 is expected to cost \$20,000 to \$30,000 per facility, based on vendor estimates. The total cost of Materials Composition Testing (nine materials across 14 facilities) is expected to be \$37,800. Additional recordkeeping requirements are expected to cost \$3,000 to \$5,000 per facility in 2019 only. In total, costs for all affected facilities are expected to range from \$240,000 to \$350,000, while the average cost per facility ranges from \$17,100 to \$25,000. Based on the relatively low cost of compliance, implementation of PR 1407.1 is expected to result in minimal jobs impact in the regional economy.

AQMP and Legal Mandates

Pursuant to Health & Safety Code Section 40460 (a), the SCAQMD is required to adopt an AQMP demonstrating compliance with all federal regulations and standards. The SCAQMD is required to adopt rules and regulations that carry out the objectives of the AQMP. PR 1407.1 is an air toxics control measure (TXM-06) in the 2016 AQMP, but is not a control measure for attainment of state or federal regulations and standards. PR 1407.1 is needed to quantify toxic air contaminant emissions from chromium alloy melting operations, in preparation for potential future rulemaking to establish emission standards and other requirements.

Implementation and Resource Impacts

Existing staff resources are adequate to implement the proposed amendments.

Attachments

- A. Summary of Proposal
- B. Key Issues and Responses
- C. Rule Development Process
- D. Key Contacts List
- E. Resolution
- F. Proposed Rule 1407.1
- G. Final Staff Report for Proposed Rule 1407.1
- H. Notice of Exemption
- I. Board Meeting Presentation

ATTACHMENT A

SUMMARY OF PROPOSAL

Proposed Rule 1407.1 – Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations

Purpose

- Gather information and quantify hexavalent chromium, arsenic, cadmium, chromium, and nickel emissions from chromium alloy melting operations

Applicability

- Chromium alloy melting operations where chromium alloy is defined as a metal that is an alloy steel, stainless steel, superalloy, or any metal that is at least 0.5% chromium by weight

Requirements

- Submittal of a survey which identifies a facility's types of operations and processes performed, collect detailed furnace information and, if applicable, identify pollution controls and specify existing housekeeping procedures
- One-time source test for facilities that currently vent exhaust from chromium alloy melting operations to a control device
 - SCAQMD will conduct source test for three facilities at no cost to them
- One-time materials composition testing of raw materials, molten material, final product, slag, and dross, and if applicable, baghouse catch
- One year of keeping records of run hours and type and amount of materials processed for each furnace that processes chromium alloys; list of materials vendors; and baghouse catch information

Exemptions

- Equipment and operations subject to Rules 1420, 1420.1, or 1420.2
- Facilities that melt less than one ton per year of chromium alloys
- Furnaces with a capacity of 25 pounds or less

ATTACHMENT B

KEY ISSUES AND RESPONSES

Proposed Rule 1407.1 – Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations

The California Metals Coalition and some industry stakeholders have commented that Proposed Rule 1407.1 is not needed because staff has not shown that hexavalent chromium is formed during melting of chromium alloys and staff should conduct testing at Cal Poly Pomona before proceeding with Proposed Rule 1407.1.

- Two SCAQMD source tests of metal melting furnaces and ten screening tests on heat treating and forging furnaces indicate that hexavalent chromium emissions occur
- Proposed Rule 1407.1 is still needed to require source tests to quantify emissions on full scale production furnaces for the different types (electric or gas induction, vacuum induction, electric arc, crucible), that captures the full production and process of the melting and casting process, and representative sizes of furnaces (up to 18,000 pounds)
 - Cal Poly Pomona's furnace is a 48 pound electric induction furnace
- SCAQMD has initiated contracting with Cal Poly Pomona to conduct a parallel study to provide supplementary data
 - Waiting for the research to be completed would delay installation of pollution controls by years

The California Metals Coalition and some industry representatives have commented that CARB Method 425 (source test for hexavalent chromium) has not been demonstrated to be applicable or appropriate for metal melting operations and test method development should occur at Cal Poly Pomona.

- CARB Method 425 is CARB and EPA approved for determining hexavalent chromium and total chromium emissions from stationary sources
- There is no evidence that CARB Method 425 is not the appropriate source test method for metal melting operations
- Proposed Rule 1407.1 includes a provision for alternative sampling and analytical test methods with Executive Officer approval

ATTACHMENT C

RULE DEVELOPMENT PROCESS

Proposed Rule 1407.1 – Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations



Three (3) years spent in rule development.

One (1) Public Workshop.

One (1) Stationary Source Committee Meeting.

Seven (7) Working Group Meetings.

ATTACHMENT D
KEY CONTACTS LIST

Proposed Rule 1407.1 – Emissions of Toxic Air Contaminants from Chromium Alloy
Melting Operations

AB & I Foundry	CM Metals	Magnesium Alloy Products
ACE Clearwater	Commercial Casting	Company
ACME Castings	Company	Mattco Forge
ADC	Commercial Metal	Miller Castings
Advanced Environmental	Forming	Modern Pattern and
Control	Consolidated Precision	Foundry
AECOM	Products	Montrose Air Quality
Almega Environmental	Cundiff Steel	Services
Alta Environmental	Custom Alloy Light Metals	Pacific Alloy Casting
Allan Company	E4 Strategic Solutions	Company
The Alpert Group	Ekco Metals	Pacific Die Casting
Advanced Geo	Exponent	Porter Warner Industries
Environmental	Fenico Precision Castings	Pro Cast Industries
Arrowhead Brass &	Fontana Foundry	Ramboll Environ
Plumbing	Corporation	RT&D
Associates Environmental	Gerdau	SA Recycling
Atlas Pacific Corporation	Globe Iron Foundry	Scott Sales Company
Basic Fibres	Green Environmental	Sierra Aluminum
Bell Foundry Company	Management	Company
BizFed	Griswold Industries	SLR International
BlueScape Environmental	HBA	Corporation
Bodycote	Heraeus	Solutions 4 Blast
The Boeing Company	HWC	Standard Metals Recycling
C & M Metals	Hyatt Die Cast	Strategic Materials
California Amforge	IMS Recycling	Corporation
Corporation	Institute of Scrap	Techni-Cast Corporation
California Metals Coalition	Recycling Industries	Total Clean
California Metal-X	Jack Engle and Company	TST
California Steel and Tube	JE Compliance Services	U.S.R.
Cast Metal Services	Kaiser Aluminum	Upper Room Consulting
Cast-Rite Corporation	Keramida	Vista Metals Corporation
CCC	Los Angeles Pump and	Whittingham Public
Certified Alloy Products	Valve Products	Affairs Advisors
Cla-Val	Lynwood Pattern &	Yorke Engineering
Clow Valve	Foundry	

ATTACHMENT E

RESOLUTION NO. 18-____

A Resolution of the Governing Board of the South Coast Air Quality Management District (SCAQMD) determining that Proposed Rule 1407.1 – Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations is exempt from the requirements of the California Environmental Quality Act (CEQA).

A Resolution of the SCAQMD Governing Board adopting Rule 1407.1 – Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations.

WHEREAS, the SCAQMD Governing Board finds and determines that Proposed Rule 1407.1 is considered a "project" pursuant to CEQA per CEQA Guidelines Section 15002(k) – General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA; and

WHEREAS, the SCAQMD has had its regulatory program certified pursuant to Public Resources Code Section 21080.5 and CEQA Guidelines Section 15251(l), and has conducted a CEQA review and analysis of Proposed Rule 1407.1 pursuant to such program (SCAQMD Rule 110); and

WHEREAS, the SCAQMD Governing Board finds and determines that after conducting a review of the proposed project in accordance with CEQA Guidelines Section 15002(k) – General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA, and CEQA Guidelines Section 15061 – Review for Exemption, procedures for determining if a project is exempt from CEQA, that Proposed Rule 1407.1 is determined to be exempt from CEQA; and

WHEREAS, the SCAQMD Governing Board finds and determines that it can be seen with certainty that there is no possibility that the proposed project may have any significant adverse effects on the environment, and is therefore, exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Activities Covered By General Rule; and

WHEREAS, the SCAQMD Governing Board finds and determines that the proposed project is also categorically exempt from CEQA pursuant to CEQA Guidelines Section 15306 – Information Collection because Proposed Rule 1407.1 will require basic data collection, research and resource evaluation activities which will not result in a serious or major disturbance to an environmental resource; and

WHEREAS, the SCAQMD Governing Board finds and determines that the proposed project is also categorically exempt from CEQA requirements pursuant to CEQA Guidelines Section 15308 – Actions by Regulatory Agencies for the Protection of the Environment, because Proposed Rule 1407.1 is designed to further protect or enhance the environment; and

WHEREAS, SCAQMD staff has prepared a Notice of Exemption for the proposed project, that is completed in compliance with CEQA Guidelines Section 15062 – Notice of Exemption; and

WHEREAS, Proposed Rule 1407.1 and supporting documentation, including but not limited to, the Notice of Exemption, the Final Staff Report, and the Socioeconomic Impact Assessment, were presented to the SCAQMD Governing Board and the SCAQMD Governing Board has reviewed and considered this information, as well as has taken and considered staff testimony and public comment prior to approving the project; and

WHEREAS, the SCAQMD Governing Board finds and determines, taking into consideration the factors in Section (d)(4)(D) of the Governing Board Procedures (codified as Section 30.5(4)(D)(i) of the Administrative Code), that the modifications to Proposed Rule 1407.1 since the notice of public hearing was published add clarity that meets the same air quality objective and are not so substantial as to significantly affect the meaning of the proposed amended rule within the meaning of Health and Safety Code Section 40726 because: (a) the changes do not impact emission reductions, (b) the changes do not affect the number or type of sources regulated by the rules, (c) the changes are consistent with the information contained in the notice of public hearing, and (d) the consideration of the range of CEQA alternatives is not applicable because Proposed Rule 1407.1 is exempt from CEQA; and

WHEREAS, Proposed Rule 1407.1 will be not be submitted for inclusion into the State Implementation Plan; and

WHEREAS, the SCAQMD staff conducted a Public Workshop regarding Proposed Rule 1407.1 on August 30, 2018; and

WHEREAS, Health and Safety Code Section 40727 requires that prior to adopting, amending or repealing a rule or regulation, the SCAQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing and in the staff report; and

WHEREAS, the SCAQMD Governing Board has determined that Proposed Rule 1407.1 is needed to gather information and quantify arsenic, cadmium, chromium, hexavalent chromium, and nickel emissions from chromium alloy melting operations, and source testing on production furnaces is needed to develop emission standards to control toxic air contaminant emissions; and

WHEREAS, the SCAQMD Governing Board obtains its authority to adopt, amend or repeal rules and regulations from Sections 39002, 39650 et. seq., 40000, 40440, 40441, 40702, 40725 through 40728, 41508, and 41511 of the Health and Safety Code; and

WHEREAS, the SCAQMD Governing Board has determined that Proposed Rule 1407.1 is written or displayed so that the meaning can be easily understood by the persons directly affected by it; and

WHEREAS, the SCAQMD Governing Board has determined that Proposed Rule 1407.1 is in harmony with and not in conflict with or contradictory to, existing statutes, court decisions or state or federal regulations; and

WHEREAS, the SCAQMD Governing Board has determined that Proposed Rule 1407.1 will not impose the same requirements as any existing state or federal regulations. The amendments are necessary and proper to execute the powers and duties granted to, and imposed upon, SCAQMD; and

WHEREAS, the SCAQMD Governing Board, in adoption Rule 1407.1, references the following statutes which the SCAQMD hereby implements, interprets, or makes specific: Health and Safety Code Sections 39002, 40001, 40702, 40440(a), 40725 through 40728.5, and 41511; and

WHEREAS, the SCAQMD Governing Board finds that Proposed Rule 1407.1 fall within one or more of the categories specified in Health and Safety Code Section 40727.2(g) and, therefore, comply with Health and Safety Code Section 40727.2(a); and

WHEREAS, the SCAQMD Governing Board finds that the Proposed Rule 1407.1 does not significantly affect air quality or emissions limitations, and does not impose new controls, and therefore a socioeconomic analysis pursuant to Health and Safety Code Section 40440.8, 40728.5, or 40920.6 is not required; and

WHEREAS, the SCAQMD specifies that the Planning and Rules Manager of Rule 1407.1 is the custodian of the documents or other materials which constitute the record of proceedings upon which the adoption of these proposed amendments is based, which are located at the South Coast Air Quality Management District, 21865 Copley Drive, Diamond Bar, California; and

WHEREAS, a public hearing has been properly noticed in accordance with the provisions of Health and Safety Code Section 40725 and 40440.5; and

WHEREAS, the SCAQMD Governing Board has held a public hearing in accordance with all applicable provisions of state and federal law; and

NOW, THEREFORE BE IT RESOLVED, that the SCAQMD Governing Board does hereby determine, pursuant to the authority granted by law, that Proposed Rule 1407.1 is exempt from CEQA pursuant to CEQA Guidelines Section 15061 (b)(3) – Activities Covered By the General Rule, CEQA Guidelines Section 15306 – Information Collection, and CEQA Guidelines Section 15308 – Actions by Regulatory Agencies for Protection of the Environment. This information was presented to the SCAQMD Governing Board, whose members reviewed, considered, and approved the information therein prior to acting on Proposed Rule 1407.1; and

BE IT FURTHER RESOLVED, that the SCAQMD Governing Board does hereby adopt, pursuant to the authority granted by law, Proposed Rule 1407.1 as set forth in the attached, and incorporated herein by reference.

DATE: _____

CLERK OF THE BOARDS

ATTACHMENT F

PROPOSED RULE 1407.1. EMISSIONS OF TOXIC AIR CONTAMINANTS FROM CHROMIUM ALLOY MELTING OPERATIONS

(a) Purpose

The purpose of this rule is to gather information and quantify arsenic, cadmium, chromium, hexavalent chromium, and nickel emissions from chromium alloy melting operations.

(b) Applicability

This rule shall apply to the owner and operator of any facility conducting chromium alloy melting operation(s) including, but not limited to, smelters (primary and secondary), foundries, die-casters, and other miscellaneous melting processes.

(c) Definitions

For the purpose of this rule, the following definitions shall apply:

- (1) ALLOY STEEL is a steel that is alloyed with a variety of elements, in addition to carbon, in total amounts between 1.0% and 50% by weight.
- (2) CASTING is the formation of metallic parts or casts by pouring molten metal into a mold and core assembly or into a mold for ingots, sows, or cylinders.
- (3) CHROMIUM ALLOY is any alloy steel, stainless steel, superalloy, or any metal that is at least 0.5% chromium by weight.
- (4) DIE-CASTER is any facility, operation, or process where molten metal is forced under pressure into a mold cavity.
- (5) DROSS is the impurities discharged, in solid state, from the metal melting process.
- (6) DUCT SECTION is any length of duct, including angles and bends, which is contiguous between processes, emission collection systems, emission control devices, or ventilation inlets or outlets. Examples include ducting between a furnace and heat exchanger; baghouse and scrubber; and scrubber and blower, or the exhaust stack itself.
- (7) EMISSION COLLECTION SYSTEM is any equipment, including the associated ducting, installed for the purpose of directing, taking in, confining, and conveying toxic metal air contaminants and dust emissions.

- (8) EMISSION CONTROL DEVICE is any equipment installed in the ventilation system of a point source or after the emission collection system designed to reduce toxic metal air contaminants and dust emissions from metal melting operations.
- (9) EMISSION POINT is any location where molten metal is or can be exposed to air, including, but not limited to, furnaces, crucibles, refining kettles, ladles, tap holes, pouring spouts, and slag channels.
- (10) FACILITY is any real or personal property which is located on one or more contiguous or adjacent parcels of property in actual contact or separated solely by a public roadway or other public right-of-way and is owned or operated by the same person or person(s), corporation, government agency, public district, public officer, association, joint venture, partnership, or any combination of such entities.
- (11) FOUNDRY is any facility, operation, or process where metal or a metal alloy is melted and cast.
- (12) FUGITIVE METAL EMISSIONS are emissions of metal-containing material from locations other than emission point sources including, but not limited to, foot and vehicular traffic and storage piles where the dust forming material at the emission source contains metals.
- (13) MECHANICAL FINISHING is a metal removal or reshaping process including, but not limited to, abrasive blasting, burnishing, grinding, polishing, and sawing.
- (14) METAL is any ferrous (iron-based) metals and alloys and non-ferrous (non-iron-based) metals and alloys. Examples of metals include, but are not limited to, iron, stainless steel, and their iron-based alloys and aluminum, brass, bronze, cadmium chromium, copper, gold, lead, manganese, mercury, nickel, platinum, silver, tin, titanium, tungsten, and zinc, and their non-ferrous alloys.
- (15) METAL MELTING FURNACE is any apparatus in which metal is brought to a liquid state including, but not limited to, blast, crucible, cupola, direct arc, electric arc, hearth, induction, pot, and sweat furnaces, and refining kettles, regardless of the heating mechanism.
- (16) MOLTEN METAL is metal or metal alloy in a liquid state, in which a cohesive mass of metal will flow under atmospheric pressure and take the shape of the container in which it is placed.
- (17) POINT SOURCE is any process or equipment used for melting operations to process chromium alloys.
- (18) RERUN SCRAP is any material that has been generated at the facility as a consequence of casting or forming process, but has not been coated or surfaced with any material containing arsenic, cadmium, chromium, or nickel, intended for re-

melting including, but not limited to, sprues, gates, risers, foundry returns, and similar material.

- (19) SCRAP is any metal or metal-containing material that has been discarded or removed from the use for which it was produced or manufactured and which is intended for reprocessing. SCRAP does not include rerun scrap.
- (20) SLAG is the by-product material discharged, in melted state, from the metal melting process.
- (21) SMELTER is any facility, operation, or process where heat is applied to ore in order to melt out a base metal.
- (22) STAINLESS STEEL is a steel alloy with a minimum of 10.5% chromium content by mass.
- (23) STEEL is a metal alloy of iron and carbon and other elements.
- (24) SUPERALLOY is a heat-resistant metal alloy based on nickel, nickel-iron, or cobalt.

(d) Operational Information Survey Requirements

Within [60 Days After Date of Adoption], the owner or operator of a facility conducting chromium alloy melting operation(s) shall submit a completed survey that includes:

- (1) Casting techniques performed on chromium alloys;
- (2) Mechanical finishing activities performed on chromium alloys;
- (3) For each metal melting furnace melting chromium alloys:
 - (A) South Coast Air Quality Management District (SCAQMD) application or permit number and device identification number, if applicable;
 - (B) The equipment make, model, serial number, date of manufacture, and date of installation;
 - (C) Furnace type;
 - (D) Size and capacity;
 - (E) Range of operating temperatures;
 - (F) Minimum, average, and maximum weight of metal processed per batch and per day, based on data from calendar year 2018;
 - (G) Fuel type, if gas-fired, include British Thermal Unit (BTU) gas rating and burner age;
 - (H) Refractory information, including, but not limited to, type of refractory brick and refractory coating, chromium content, frequency of refractory brick replacement and refractory coating application, based on data from calendar year 2018, if applicable;

- (I) Minimum, average, and maximum operating temperatures, based on data from calendar year 2018;
 - (J) The equipment make, model, serial number, date of manufacture, and date of installation of associated Emission Collection System(s) and/or Emission Control Device(s), and corresponding SCAQMD application or permit number and device identification number, if applicable; and
 - (K) Metals and alloys melted, based on data from calendar year 2018; and
 - (4) Housekeeping activities routinely performed, including schedule, method(s) used, and location(s) of activities.
- (e) Source Test Requirements
- (1) The owner or operator of a facility conducting chromium alloy melting operation(s) shall submit a Source Test Protocol to the Executive Officer for approval no later than *[60 Days After Date of Adoption]* or as required by a SCAQMD permit.
 - (2) The Source Test Protocol shall include the source test criteria of the end user and all assumptions, required data, calculated targets and the following:
 - (A) All proposed pollutant and capture efficiency test methods;
 - (B) Proposed analytical detection limits;
 - (C) Planned sampling parameters; and
 - (D) Information on equipment, logistics, personnel, and other resources necessary.
 - (3) The Executive Officer will approve or reject the Source Test Protocol and notify the owner or operator. Approval or rejection will be based on whether the Source Test Protocol was prepared consistent with this subdivision and material deviation from source test protocol guidelines. If the Source Test Protocol is rejected:
 - (A) Within 30 days of the date of notification by the Executive Officer of Source Test Protocol rejection, an owner or operator shall revise and resubmit a Source Test Protocol that corrects all identified deficiencies.
 - (B) The Executive Officer will either approve the revised and resubmitted Source Test Protocol or modify the revised Source Test Protocol and approve it as modified.
 - (4) No later than 90 days after approval of the Source Test Protocol, the owner or operator of a facility conducting chromium alloy melting operation(s) shall perform the following source tests for mass emissions and concentration on the metal melting furnace pursuant to this subdivision at the inlet and the outlet to the

associated emissions control device pursuant to the approved source test protocol for the following pollutants:

- (A) Particulate matter;
 - (B) Arsenic, cadmium, chromium and nickel; and
 - (C) Hexavalent chromium.
- (5) The owner or operator of a facility conducting chromium alloy melting operation(s) shall conduct source tests pursuant to this subdivision and in accordance with ~~one~~ ~~of~~ the following applicable test methods as approved by the Executive Officer:
- (A) Particulate matter by:
 - (i) SCAQMD Method 5.1 – *Determination of Particulate Matter Emissions from Stationary Sources Using a Wet Impingement Train*;
 - (ii) SCAQMD Method 5.2 – *Determination of Particulate Matter Emissions from Stationary Sources Using Heated Probe and Filter*;
 - or
 - (iii) SCAQMD Method 5.3 – *Determination of Particulate Matter Emissions from Stationary Sources Using an In-Stack Filter*;
 - (B) Arsenic, cadmium, chromium, and nickel by CARB Method 436 – *Determination of Multiple Metal Emissions from Stationary Sources*; and
 - (C) Chromium and hexavalent chromium by CARB Method 425 – *Determination of Total Chromium and Hexavalent Chromium Emissions from Stationary Sources*.
- (6) The owner or operator of a facility conducting chromium alloy melting operation(s) shall source test the metal melting furnace melting chromium alloy:
- (A) With an emissions control device;
 - (B) Melting the alloy with the highest chromium concentration in the final product processed in the facility; and
 - (C) Operating with the highest throughput, if there are multiple furnaces that meet subparagraphs (e)(6)(A) and (e)(6)(B).
- (7) The owner or operator of a facility conducting chromium alloy melting operation(s) may use an alternative furnace in the facility and/or final product processed in the facility pursuant to (e)(6), if the Executive Officer approves a request in writing. Approval or rejection will be based on the furnace, final product processed, schedule, and throughput.
- (8) At the time the source tests are conducted, the owner or operator of a facility conducting chromium alloy melting operation(s) shall perform capture efficiency testing that includes:

- (A) Quantitative velocity measurements using a hot-wire anemometer, a vane anemometer, or an alternative or equivalent device or method as defined in 40 CFR Part 60.2, if approved in writing by the Executive Officer; and
 - (B) Qualitative visual demonstration using smoke generators.
- (9) The owner or operator of a facility conducting chromium alloy melting operation(s) shall perform materials composition testing pursuant to paragraphs (f)(2) and (f)(3) of the following materials from one batch processed during the chromium and hexavalent chromium source test:
- (A) All raw material(s). Facilities melting scrap shall test, at a minimum, three different pieces from each batch of scrap;
 - (B) Molten material;
 - (C) Final product;
 - (D) Slag;
 - (E) Dross; and
 - (F) Baghouse catch.
- If the slag, dross, or baghouse catch is not accessible immediately during or after the source test, then it shall be tested immediately after it becomes accessible.
- (10) The owner or operator of a facility conducting chromium alloy melting operation(s) may use alternative or equivalent source test methods and materials composition tests as defined in 40 CFR Part 60.2, if approved in writing by the Executive Officer.
- (11) The owner or operator of a facility conducting chromium alloy melting operation(s) shall use a test laboratory approved under the SCAQMD Laboratory Approval Program for the source test, capture efficiency testing, and materials composition testing. If there is no approved laboratory, then the testing procedures used by the unapproved laboratory may be used, if approved by the Executive Officer in writing.
- (12) The owner or operator conducting chromium alloy melting operation(s) shall notify the Executive Officer in writing at least 10 calendar days prior to conducting any test required by this subdivision.
- (13) No later than 60 days after the completion of the source tests, the owner or operator of a facility conducting chromium alloy melting operation(s) shall submit to the Executive Officer, using a format approved by the Executive Officer, reports from source tests, capture efficiency, and materials composition testing conducted.
- (14) Beginning [*Date of Adoption*], the owner or operator of a facility conducting chromium alloy melting operation(s) required to source test pursuant to this

subdivision may submit to the Executive Officer, a request for SCAQMD to conduct the source tests. The Executive Officer will accept the first three submittals.

- (15) In lieu of complying with paragraphs (e)(1) through (e)(13), the owner or operator of a facility conducting chromium alloy melting operation(s) may submit, no later than *[60 Days After Date of Adoption]*, a completed SCAQMD-approved source test report conducted up to twelve months prior to *[Date of Adoption]* that meets the requirements of paragraphs (e)(4) through (e)(11).
- (f) Materials Composition Testing
- (1) No later than *[180 Days After Date of Adoption]*, the owner or operator of a facility conducting chromium alloy melting operation(s) not required to source test pursuant to subdivision (e) shall perform materials composition testing for one batch representative of melting the alloy with the highest chromium concentration in the final product processed in the facility pursuant this subdivision of the following materials:
- (A) All raw material(s). Facilities melting scrap shall test, at a minimum, three different pieces from each batch of scrap;
 - (B) Molten material;
 - (C) Final product;
 - (D) Slag; and
 - (E) Dross.
- If the slag or dross is not accessible immediately during or after the batch is processed, then it shall be tested immediately after it becomes accessible.
- (2) Materials composition testing shall determine the content of arsenic, cadmium, chromium, hexavalent chromium, and nickel in percent by weight.
- (3) Materials composition testing shall be in accordance with the following test methods most applicable to the sample matrix and as approved by the Executive Officer:
- (A) U.S. EPA 200.7 – *Determination of Metals and Trace Elements in Water and Wastes by Inductively Coupled Plasma-Atomic Emission Spectrometry*;
 - (B) U.S. EPA 6010D – *Inductively Coupled Plasma-Optical Emissions Spectrometry*;
 - (C) U.S. EPA 6020B – *Inductively Coupled Plasma-Mass Spectrometry*;
 - (D) U.S. EPA 6200 – *Field Portable X-Ray Fluorescence Spectrometry for the Determination of Elemental Concentrations in Soil and Sediment*;

- (E) U.S. EPA 7196A – *Chromium, Hexavalent (Chelation/Extraction/Colorimetric)*; and/or
 - (F) U.S. EPA 7199 – *Determination of Hexavalent Chromium in Drinking Water, Groundwater and Industrial Wastewater Effluents by Ion Chromatography.*
 - (4) The owner or operator of a facility performing materials composition testing may use alternative materials composition tests methods, if approved in writing by the Executive Officer.
- (g) Recordkeeping Requirements
- (1) Between January 1, 2019 and January 1, 2020, the owner or operator of a facility conducting chromium alloy melting operation(s) shall make records of the following:
 - (A) For each metal melting furnace melting chromium alloys, monthly records of run hours and weight and type of raw materials processed including, but not limited to, additives, alloys, ingots, scrap, and reruns;
 - (B) Raw material vendor information for chromium alloys; and
 - (C) For each baghouse venting furnace melting operations of chromium alloys, records of weight of the baghouse catch per container and date collected.
 - (2) The owner or operator of a facility conducting chromium alloy melting operation(s) shall maintain records for a period of not less than three years and make such records available to the Executive Officer upon request.
 - (3) No later than February 1, 2020, the owner or operator of a facility conducting chromium alloy melting operation(s) shall submit to the Executive Officer, using a format approved by the Executive Officer, records pursuant to paragraph (g)(1).
- (h) Exemptions
- (1) Equipment and operations subject to the requirements of Rules 1420 – Emissions Standard for Lead, 1420.1 – Emission Standards for Lead and Other Toxic Air Contaminants from Large Lead-Acid Battery Recycling Facilities, or 1420.2 – Emission Standards for Lead from Metal Melting Facilities, shall be exempt from the requirements of this rule.
 - (2) A facility that produces a total of no more than one ton per year of all chromium alloys from melting operations shall be exempt from the requirements of this rule.
 - (3) Furnaces with a capacity of 25 pounds or less shall be exempt from the requirements of this rule.

ATTACHMENT G

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final Staff Report

Proposed Rule 1407.1 – Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations

November 2018

Deputy Executive Officer

Planning, Rule Development, and Area Sources
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Assistant Deputy Executive Officer

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TABLE OF CONTENTS

CHAPTER 1: BACKGROUND

Introduction	1-1
Regulatory History	1-1
Hexavalent Chromium Emissions Data	1-2
<i>Hexavalent Chromium Screening Tests for Heat Treating and Forging Furnaces</i>	<i>1-2</i>
<i>Hexavalent Chromium Source Tests from Metal Melting Operations</i>	<i>1-3</i>
<i>Hexavalent Chromium Emissions from Grinding and Plasma Arc Cutting.....</i>	<i>1-5</i>
Metal Toxic Air Contaminants and Health Effects	1-6
Need for Proposed Rule 1407.1.....	1-6
Affected Industries	1-7
Public Process	1-8

CHAPTER 2: SUMMARY OF PROPOSAL

Introduction	2-1
Proposed Rule 1407.1	2-1
<i>Purpose (Subdivision (a))</i>	<i>2-1</i>
<i>Applicability (Subdivision (b)).....</i>	<i>2-1</i>
<i>Definitions (Subdivision (c)).....</i>	<i>2-2</i>
<i>Operational Information Survey Requirements (Subdivision (d))</i>	<i>2-3</i>
<i>Source Test Requirements (Subdivision (e))</i>	<i>2-4</i>
<i>Materials Composition Testing (Subdivision (f)).....</i>	<i>2-8</i>
<i>Recordkeeping Requirements (Subdivision (g)).....</i>	<i>2-9</i>
<i>Exemptions (Subdivision (h)).....</i>	<i>2-9</i>

CHAPTER 3: IMPACT ASSESSMENT

Introduction	3-1
Rule Adoption Relative to Cost-Effectiveness.....	3-1

Compliance Costs	3-1
Socioeconomic Assessment.....	3-2
California Environmental Quality Act Analysis.....	3-3
Draft Findings Under California Health and Safety Code Section 40727	3-3
<i>Requirements to Make Findings</i>	<i>3-3</i>
Necessity	3-3
Authority	3-4
Clarity	3-4
Consistency	3-4
Non-Duplication.....	3-4
Reference	3-4
Comparative Analysis	3-4

APPENDIX 1: SCAQMD GUIDELINES FOR THE PREPARATION OF RULE 1407.1 SOURCE TEST PROTOCOLS

Introduction	A1-1
Preparing a Source Test Protocol.....	A1-1
<i>Cover Page</i>	<i>A1-1</i>
<i>Table of Contents.....</i>	<i>A1-1</i>
<i>Introduction</i>	<i>A1-1</i>
<i>Equipment, Process, and Operation Description</i>	<i>A1-1</i>
<i>Testing Methodology.....</i>	<i>A1-2</i>
<i>Quality Assurance/Quality Control (QA/QC) Procedures.....</i>	<i>A1-4</i>
<i>Calculations Procedures.....</i>	<i>A1-4</i>
<i>Report Information and Format.....</i>	<i>A1-4</i>

APPENDIX 2: COMMENTS AND RESPONSES

CHAPTER 1: BACKGROUND

INTRODUCTION

REGULATORY HISTORY

HEXAVALENT CHROMIUM EMISSIONS DATA

METAL TOXIC AIR CONTAMINANTS AND HEALTH EFFECTS

NEED FOR PROPOSED RULE 1407.1

AFFECTED INDUSTRIES

PUBLIC PROCESS

INTRODUCTION

Proposed Rule 1407.1 – Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations (Proposed Rule 1407.1) is a source-specific rule that gathers information and quantifies arsenic, cadmium, chromium, hexavalent chromium, and nickel emissions from melting operations of metals that contain greater than 0.5% chromium content, including, but not limited to alloy steel, stainless steel, and superalloys. Metal melting operations, such as smelting, tinning, galvanizing, and other miscellaneous processes where metals are processed in molten form, have the potential to emit toxic air contaminants and particulate matter. Proposed Rule 1407.1 will focus on obtaining information regarding facility operations, furnaces, composition of metals, recordkeeping, and emissions testing. The provisions in Proposed Rule 1407.1 include requirements for submittal of an operational information survey, emissions testing, metals composition testing, and recordkeeping.

In March 2017, the SCAQMD adopted the Final 2016 Air Quality Management Plan (2016 AQMP). Control of Toxic Emissions from Metal Melting Facilities (TXM-06) is a control measure in the 2016 AQMP that seeks to further reduce arsenic, cadmium, nickel, other toxic metals, and particulates from foundry operations. This stationary source air toxic control strategy is not required by state or federal law, and thus is not a commitment under the State Implementation Plan.

REGULATORY HISTORY

Proposed Rule 1407.1 is a new rule and is associated with a similar rule, Rule 1407 – Control of Emissions of Arsenic, Cadmium, and Nickel from Non-Ferrous Metal Melting Operations. Rule 1407 was adopted in July 1994 to implement the non-ferrous metal melting Air Toxics Control Measure (ATCM) adopted by the California Air Resource Board (CARB) in October 1992. The ATCM and Rule 1407 require the reduction of emissions of arsenic, cadmium, and nickel by the installation of air pollution control equipment, parametric monitoring, and housekeeping practices to minimize fugitive particulate emissions. Non-ferrous metal melting operations were focused on due to known presence of arsenic and cadmium in these operations. Rule 1407 and the ATCM did not include ferrous metals since it was beyond the scope of the investigation. CARB intended to evaluate the need for proposed controls for ferrous metal melting operations in the future.

In 2015, to fill a regulatory gap, staff initiated the rule development process to amend Rule 1407 to address toxic air contaminant emissions from ferrous metal melting operations and update existing requirements for non-ferrous metal melting operations currently regulated under Rule 1407. After several working group meetings, industry stakeholders recommended that the proposed rule be separated into non-ferrous (Proposed Amended Rule 1407) and ferrous (Proposed Rule 1407.1) metal melting rules. Industry stakeholders had commented that there was insufficient evidence that hexavalent chromium was emitted from metal melting operations and were concerned about a one-size fits all approach since the type of toxic air contaminants emitted from non-ferrous and ferrous metal melting operations would differ. Additionally, although implementation of Rule 1407 would concurrently reduce hexavalent chromium emission reductions from ferrous metal melting operations, the level of control is probably not sufficient since hexavalent chromium is a more potent toxic air contaminant than arsenic, cadmium, and nickel which are the focus of Rule 1407. In April 2018, staff decided to bifurcate the two rules into non-chromium alloy (Rule 1407) and chromium alloy (Rule 1407.1) metal melting.

Staff bifurcated the two rules into non-chromium and chromium instead of non-ferrous and ferrous because certain ferrous alloys do not contain chromium and some non-ferrous alloys contain chromium. For example, superalloys, a non-ferrous metal, are alloyed with chromium and carbon steel, a ferrous metal, does not have a minimum specification or requirement for chromium. Therefore, the rules were divided on the potential to emit hexavalent chromium. It is expected that the level of pollution controls will be driven by the toxicity of the metal particulate. As discussed below under “Hexavalent Chromium Emissions Data”, emissions data has shown that during the heating process, metals containing chromium can emit hexavalent chromium emissions. Since hexavalent chromium has a significantly higher cancer potency factor than other metal toxic air contaminants, staff separated the two rules based on chromium content of the alloys.

Currently, superalloys are regulated by Rule 1407, but are exempt due to their low arsenic and cadmium content. Melting operations of metals containing chromium, such as alloy steel and stainless steel are currently not regulated under a source-specific rule to address toxic air contaminant emissions. As a result, information regarding these metal melting operations is not readily available, housekeeping operations are not regulated, and a number of these furnaces may not be permitted. Proposed Rule 1407.1 is needed to fill a regulatory gap to address toxic air contaminant emissions from melting operations of metals containing chromium.

HEXAVALENT CHROMIUM EMISSIONS DATA

Ambient monitoring conducted in Paramount in 2016 and 2017 indicated that hexavalent chromium was being emitted by high-temperature metalworking operations. In October 2016, the SCAQMD deployed several ambient monitors in the mostly industrial areas of the City of Paramount. After an intensive investigation, in November 2016, SCAQMD determined that Aerocraft and a nearby facility was one of the sources of elevated levels of hexavalent chromium emissions. At Aerocraft, SCAQMD inspectors found hexavalent chromium in the dust collected in several different locations within the facility. Finding elevated levels of hexavalent chromium at Aerocraft was surprising, since the processes conducted at this facility were not previously known to generate large amounts of hexavalent chromium emissions. The carcinogenic substance was also found within Aerocraft’s equipment for cooling its metal heat treating operations. In addition, a screening source test showed that hexavalent chromium emissions were being generated from the furnace that contained an alloy with a high percentage of chromium.

Hexavalent Chromium Screening Tests for Heat Treating and Forging Furnaces

SCAQMD conducted screening source tests on several heat treating and forging furnaces processing metals or using materials that contained chromium. During source testing, the furnaces operated between 1,725 to 2,100°F and the results showed hexavalent chromium exhaust concentrations between 376 to 24,500 ng/m³. Table 1.1 summarizes the results of the screening source tests of heat treating and forging furnaces.

Table 1.1: Screening Source Test of Heat Treating and Forging Furnaces

Source Test	Temperature (°F)	Material	Hexavalent Chromium Concentration (ng/m ³)
Aerocraft Heat Treating Furnace ¹	2100	Inconel (14 to 30% chromium)	376
Mattco Forge Heat Treating Furnace ²	2050	Metal parts with 15.53% chromium	2080
Weber Metals Heat Treating Furnace ³	1725 to 1746	Titanium billets and potentially furnace components (refractory or stainless steel table)	24,500

These heat treating and forging furnaces were processing materials similar to the metals that are applicable to Proposed Rule 1407.1, but at lower temperatures. For metal forging operations, metals are heated to a soft and workable temperature, but not to a molten stage. Heat treating operations such as Aerocraft includes a number of controlled heating and cooling operations to bring about a desired change in the physical properties of the metal such as hardening, case hardening, annealing, normalizing, and tempering. Metal melting operations occur at higher temperatures than heat treating and forging operations. With the higher temperature required for chromium alloy melting, it is expected that hexavalent chromium emissions from melting operation will be similar or possibly higher. The source testing required in Proposed Rule 1407.1 is needed to quantify emissions to identify the appropriate level of pollution control.

Hexavalent Chromium Source Tests from Metal Melting Operations

Additionally, staff reviewed source test reports of metal melting operations. Most of these source tests only tested for elemental chromium and did not test for hexavalent chromium because it is a separate test and those operations were not expected to be a source of hexavalent chromium. Staff did find a source test, however, that tested for hexavalent chromium and found that there were hexavalent chromium emissions. The source test was conducted in December 1993 for Total Chromium and Hexavalent Chromium using CARB Method 425. Three 192-minute runs were conducted while the furnace melted low carbon steel and grade B wrought carbon steel alloyed with low carbon ferro manganese, ferro silicon, and sorrel pig iron. Table 1.2 summarizes the alloying element content of low carbon steel and wrought carbon steel.

¹ SCAQMD, <http://www.aqmd.gov/docs/default-source/compliance/Carlton-Forge-Works/aerocraft-16-334.pdf?sfvrsn=6>

² SCAQMD, <http://www.aqmd.gov/docs/default-source/compliance/Paramount/source-test-mattco.pdf?sfvrsn=6>

³ SCAQMD, <http://www.aqmd.gov/docs/default-source/compliance/Paramount/source-test-weber.pdf?sfvrsn=6>

Table 1.2: Alloying Element Content of Carbon Steel

Material	Carbon (%)	Manganese (%)	Phosphorous (%)	Sulfur (%)	Aluminum (%)	Titanium (%)	Silicon (%)
Low Carbon Steel* ⁴	0.02 – 0.12	0.40 – 0.60	0.025 – 0.040	0.020 – 0.050	0.0 – 0.020	0.0 – 0.3	No specification
Wrought Carbon Steel – Grade B** ⁵	0.30	1.00	0.035	0.035	No specification	No specification	0.60

* Residual amount of copper, nickel, molybdenum, and chromium.

** Up to 1.00% total of copper, nickel, molybdenum, chromium, and vanadium.

The three runs ranged from 2,711 to 4,064 pounds per melt. The source test report did not record the furnace temperatures, but carbon steel melts at 2,600 to 2,800°F. Table 1.3 summarizes the results of the source test.

Table 1.3: Source Test Results

Run Number	Amount Processed (lbs)	Total Chromium Emissions (lbs)	Hexavalent Chromium Emissions (lbs)
1	2,810	0.00012	0.00004
2	4,064	0.00021	0.00016
3	2,711	0.00052	0.00038

Staff calculated the percentage of hexavalent chromium to total chromium from the source tests; Table 1.4 summarizes the results.

⁴ Armco, http://www.armco.com.br/wp/wp-content/uploads/2011/08/BaixoCarbono_especificacaotecnica.pdf

⁵ Steel Founders' Association of America, <https://www.sfsa.org/publications/hbk/s2.pdf>

Table 1.4: Percent of Hexavalent Chromium Emissions Relative to Total Chromium

Source Test	Total Chromium Emissions (lbs)	Hexavalent Chromium Emissions (lbs)	Percent of Hexavalent Chromium*
Run 1	0.00012	0.00004	33%
Run 2	0.00021	0.00016	76%
Run 3	0.00052	0.00038	73%

* Percent of Hexavalent Chromium to Total Chromium (Hexavalent Chromium / Chromium)

The source test showed that some chromium is converted to hexavalent chromium during carbon steel metal melting operations. The alloys melted during this source test contained less than 1 percent chromium; other chromium alloys can have as high as 28 percent chromium. Higher percentages of chromium in the alloy is expected to result in higher hexavalent chromium emissions. Additional emissions data is needed to quantify the amount of hexavalent chromium emissions occur from metal melting operations.

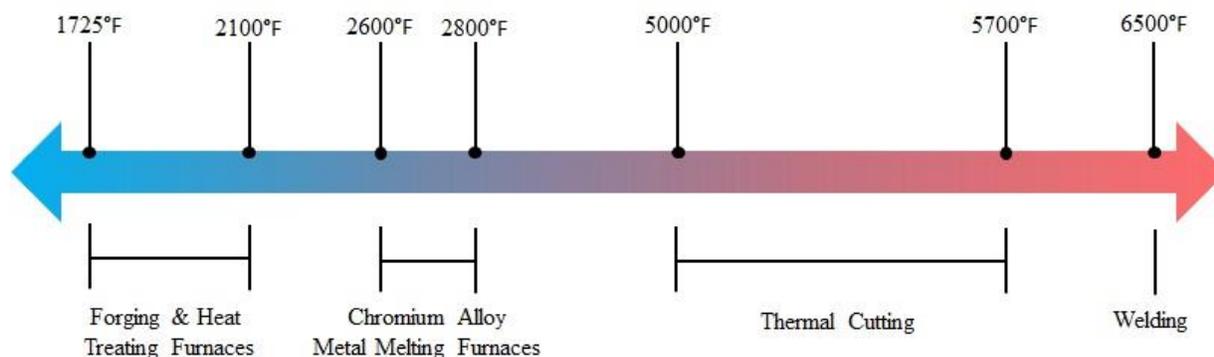
Hexavalent Chromium Emissions from Grinding and Plasma Arc Cutting

Welding and plasma arc cutting of metals were found to oxidize elemental chromium into the hexavalent state. U.S. Department of Labor Occupation Safety and Health Administration states that worker exposure to hexavalent chromium can occur during “hot work” such as welding of steels containing chromium metal.⁶ The Department of Health and Human Services, Centers for Disease Control and Prevention, and National Institute for Occupational Safety and Health⁷ noted that hexavalent chromium is formed as a by-product when metals containing metallic chromium are used, such as welding and the thermal cutting of metals and operations at steel mills, iron foundries, and steel foundries. These operations and processes use extremely high temperatures which result in the oxidation of the metallic forms of chromium to hexavalent chromium. Thermal cutting temperatures can reach as high as 5,700°F while welding can produce temperatures as high as 6,500°F. These activities utilize some of the highest temperatures amongst metal working processes.

Figure 1.1 below depicts the spectrum of operating temperatures for forging and heat treating furnaces, chromium alloy metal melting furnaces, thermal cutting, and welding. Throughout this temperature spectrum, testing results from SCAQMD or literature developed by other regulatory agencies indicated conversion of chromium to hexavalent chromium.

⁶ U.S. Department of Labor Occupation Safety and Health Administration, <https://www.osha.gov/SLTC/hexavalentchromium/>

⁷ Department of Health and Human Services, Centers for Disease Control and Prevention, and National Institute for Occupational Safety and Health, https://www.cdc.gov/niosh/docs/2013-128/pdfs/2013_128.pdf

Figure 1.1: Operating Temperatures of Metal Working Processes

METAL TOXIC AIR CONTAMINANTS AND HEALTH EFFECTS

Metal melting operations with chromium alloys, such as alloy steel, stainless steel, and superalloys can result in toxic air contaminant emissions of arsenic, cadmium, hexavalent chromium, and nickel. Table 1.5 provides a brief overview of the toxicity of these metals and potential health effects:

Table 1.5: Toxicity of Metals

Metal	US EPA Carcinogenic Classification ⁸	Chronic Target Organs ⁹
Arsenic	Carcinogenic to Humans	Inhalation & oral: Development; cardiovascular system; nervous system; respiratory system; skin
Cadmium	Likely to be Carcinogenic to Humans	Inhalation: Kidney; respiratory system Oral: kidney
Chromium (hexavalent)	Carcinogenic to Humans	Inhalation: Respiratory system Oral: Hematologic system
Nickel	Carcinogenic to Humans	Inhalation: Respiratory system; hematologic system Oral: Development

NEED FOR PROPOSED RULE 1407.1

Currently, superalloys are regulated by Rule 1407, but are exempt due to their low arsenic and cadmium content. Melting operations of ferrous metals containing chromium, such as alloy steel and stainless steel are currently not regulated under a source-specific rule to address toxic air

⁸ California Office of Environmental Health Hazard Assessment, <https://oehha.ca.gov/media/downloads/crn/appendixa.pdf>

⁹ California Office of Environmental Health Hazard Assessment, <https://oehha.ca.gov/air/general-info/oehha-acute-8-hour-and-chronic-reference-exposure-level-rel-summary>

contaminant emissions. Testing done at heat treating and forging operations, SCAQMD source tests of metal melting furnaces, and worker safety regulations in very high temperature welding and cutting operations bracket the temperature range for chromium metal melting operations and all indicate that hexavalent chromium emissions are occurring during chromium metal melting operations. Hexavalent chromium, and potentially other toxic air contaminants including arsenic, cadmium, and nickel, are being emitted from chromium metal melting operations that may be uncontrolled and are not regulated by a source-specific SCAQMD rule.

The source test of the carbon steel metal melting furnace showed that some chromium is converted to hexavalent chromium at a~~The rate of conversion from chromium to hexavalent chromium from Table 1.4 ranged~~ranging from 33 to 76% (Table 1.4). There is a wide range of conversion rates and data directly from chromium metal melting operations is limited, therefore, additional source tests are needed to quantify the amount of toxic air contaminant emissions. SCAQMD staff initially offered to conduct source tests at certain facilities at no charge, however facilities were non-responsive or declined. Staff then offered at subsequent working group meetings to conduct a free source test for any stakeholder subject to the proposed rule. At this time, no facility has agreed. The purpose of the rule is to require facilities to conduct those needed source tests. The tests will quantify arsenic, cadmium, hexavalent chromium, and nickel emissions by furnace types, sizes, and configurations and by various alloys. With that information, the appropriate pollution controls necessary to protect public health from arsenic, cadmium, hexavalent chromium, and nickel emissions from chromium metal melting operations can be identified.

AFFECTED INDUSTRIES

Approximately 14 facilities are expected to be impacted by Proposed Rule 1407.1. The facilities are foundries or metal casting businesses generally classified under the NAICS code 331XXX and 332XXX, including:

- 331110 Iron and Steel Mills and Ferroalloy Manufacturing;
- 331512 Steel Investment Foundries;
- 331513 Steel Foundries (except Investment); and
- 332XXX Metal Operations.

Iron and steel mills subject to Proposed Rule 1407.1 make alloy steel, stainless steel, and superalloy ingots or shapes including bars, plates, rods, sheets, strips, or wire. Steel foundries manufacture castings, including investment castings that leave a seamless mold providing a highly detailed and consistent casting. Steel foundries also make castings in which the molten metal is poured into a mold and allowed to solidify. Operations that cast molten metal into various parts and products are classified by the type of part they manufacture. Often these facilities cast parts for a wide variety of industries.

Mills and foundries melt and cast metals and their alloys. The alloys are a combination of metals and elements that provide qualities such as corrosion resistance or strength. Common alloy materials include chromium and nickel. Even when a pure metal is melted, it often contains trace contamination of other metals or elements. The metal, alloy, or contamination can consist of toxic air contaminants. Chromium, arsenic, and cadmium may be found as contaminants. Metal emissions may occur during metal melting, transfer, pouring, and sand reclamation. Emissions may also occur during casting shakeout when the casting is freed from the mold. Mechanical

finishing operations, including abrasive blasting, burnishing, grinding, polishing and sawing, may emit particulates possibly containing toxic air contaminants. Fugitive emissions may result from crushing, grinding, and handling of materials. Other potential sources of emissions are re-entrainment of surface dust by foot and vehicle traffic in areas of the facility where metal-containing particulate matter has been deposited. Lastly, emissions may occur from the collection points of an emission control device or from the exhaust of an emission control device.

The 14 facilities subject to Proposed Rule 1407.1 were identified by reviewing SCAQMD permits for furnaces, reviewing SCAQMD inspector reports for metal operations facilities, searching websites for facilities that offer metal melting services, and site visits to 11 of the 14 affected facilities. Facilities that conduct heat treating or other metalworking operation but do not melt the metal were excluded. Additionally, facilities that melt metals but do not melt alloy steel, stainless steel, or superalloys were excluded.

PUBLIC PROCESS

Proposed Rule 1407.1 is being conducted through a public process. A working group was formed to provide the public and stakeholders an opportunity to discuss the proposed rule and to provide the SCAQMD staff with input during the rule development process. The Working Group is comprised of representatives from industry, consultants, agency representatives, environmental groups, and community groups. The Working Group originally met under Proposed Amended Rule 1407 and had four Working Group Meetings. Based on industry stakeholder input, Proposed Amended Rule 1407 was separated into two rulemakings: Proposed Amended Rule 1407 and Proposed Rule 1407.1. Staff has held three additional Working Group Meetings since Proposed Rule 1407.1 was separated. The seven working group meetings were held at the SCAQMD Headquarters in Diamond Bar on the following dates: September 5, 2017, November 9, 2017, January 30, 2018, April 25, 2018, June 6, 2018, July 10, 2018, and August 9, 2018. A Public Workshop was held on August 30, 2018.

CHAPTER 2: SUMMARY OF PROPOSAL

INTRODUCTION

PROPOSED RULE 1407.1

INTRODUCTION

The primary objective of Proposed Rule 1407.1 is to gather information and to quantify the toxic air contaminant emissions from alloy steel, stainless steel, superalloys, or any chromium alloy containing greater than 0.5% chromium melting operations. The information obtained will be assessed to determine the appropriate pollution controls needed to reduce toxic air contaminant emissions from those operations.

PROPOSED RULE 1407.1

Purpose (Subdivision (a))

The purpose of Proposed Rule 1407.1 is to gather information to quantify arsenic, cadmium, chromium, hexavalent chromium, and nickel emissions from facilities conducting chromium alloy melting operations. Chromium alloys contain toxic air contaminants, such as arsenic, cadmium, and nickel, which have the potential to be emitted during metal melting operations. Additionally, these metals contain chromium, which has the potential to emit hexavalent chromium. A source test of a steel furnace showed that some chromium is converted to hexavalent chromium. However, additional emissions data is needed to quantify the type and amount of toxic air contaminant emissions that occurs during the melting process. The emissions data from testing and process data from operational information surveys will provide the necessary information to assess the need for future requirements.

The proposed purpose is as follows:

The purpose of this rule is to gather information and quantify arsenic, cadmium, chromium, hexavalent chromium, and nickel emissions from chromium alloy melting operations.

Applicability (Subdivision (b))

Rule 1407 currently applies only to non-ferrous metal melting applications. Ferrous metal melting operations are not subject to an industry or equipment specific regulation to address toxic air contaminant emissions. Initially, during the rule development process one approach was to expand Rule 1407 to apply to all metal melting operations (non-ferrous and ferrous). Industry requested separating the rules because there was insufficient evidence that hexavalent chromium was emitted from metal melting operations and that the type of toxic air contaminants emitted from non-ferrous and ferrous metal melting operations could differ significantly.

Staff agreed to bifurcate the proposed rules but did so based on the chromium content in the metal or alloy. Hexavalent chromium has a cancer potency factor that is one or more orders of magnitude higher than arsenic, cadmium, or nickel. Thus emissions of hexavalent chromium would likely need more stringent controls than other metal toxic air contaminants. Separating the proposed rules based on iron content (ferrous and non-ferrous) is not an indicator of chromium content, as superalloys are non-ferrous alloys with high levels of chromium, while iron and carbon steel have high iron content, but are expected to have only trace chromium content as impurities.

Staff reviewed the composition of metal alloys. Staff determined that aluminum alloys have less than 0.4% chromium content with Aluminum 6066 being the aluminum alloy with the highest chromium content. Brass, bronze, and lead alloys are expected to have only trace contaminant quantities of chromium. Carbon steel and iron have no minimum specifications for chromium, but

are also expected to have only trace contaminants. Alloy steel, stainless steel, and superalloys are expected to have a chromium content greater than 0.4%. Therefore, Proposed Rule 1407.1 will apply to chromium alloys, which is defined as a metal that is an alloy steel, stainless steel, superalloy, or any metal that is at least 0.5% chromium by weight.

With the adoption of Proposed Rule 1407.1 and Proposed Amended Rule 1407, metal melting operations will be regulated by metal or alloy as depicted in Figure 2-1 below.

Figure 2.1: SCAQMD Rules by Metal Type



The proposed applicability is as follows:

This rule shall apply to the owner or operator of any facility conducting chromium alloy melting operation(s) including, but not limited to, smelters (primary and secondary), foundries, die-casters, and other miscellaneous melting processes.

Definitions (Subdivision (c))

Proposed Rule 1407.1 includes definitions to clarify and explain key concepts. Please refer to Proposed Rule 1407.1 subdivision (c) for each definition.

Proposed Definitions:

- Alloy Steel
- Casting
- Chromium Alloy
- Die-Caster
- Dross
- Duct Section
- Emission Collection System
- Emission Control Device
- Emission Point
- Facility
- Foundry
- Fugitive Metal Emissions
- Mechanical Finishing
- Metal
- Metal Melting Furnace
- Molten Metal
- Point Source
- Rerun Scrap
- Scrap
- Slag
- Smelter

Stainless Steel
Steel
Superalloy

The applicability of Proposed Rule 1407.1 specifies chromium alloys which is defined as any metal that is an alloy steel, stainless steel, superalloy, or any metal that is at least 0.5% chromium by weight. Alloy steel, stainless steel, and superalloys are standard definitions. Chromium alloy is defined to include any metal with has a chromium content greater or equal to 0.5%, including alloy steel, stainless steel, and superalloys.

These proposed definitions are as follows:

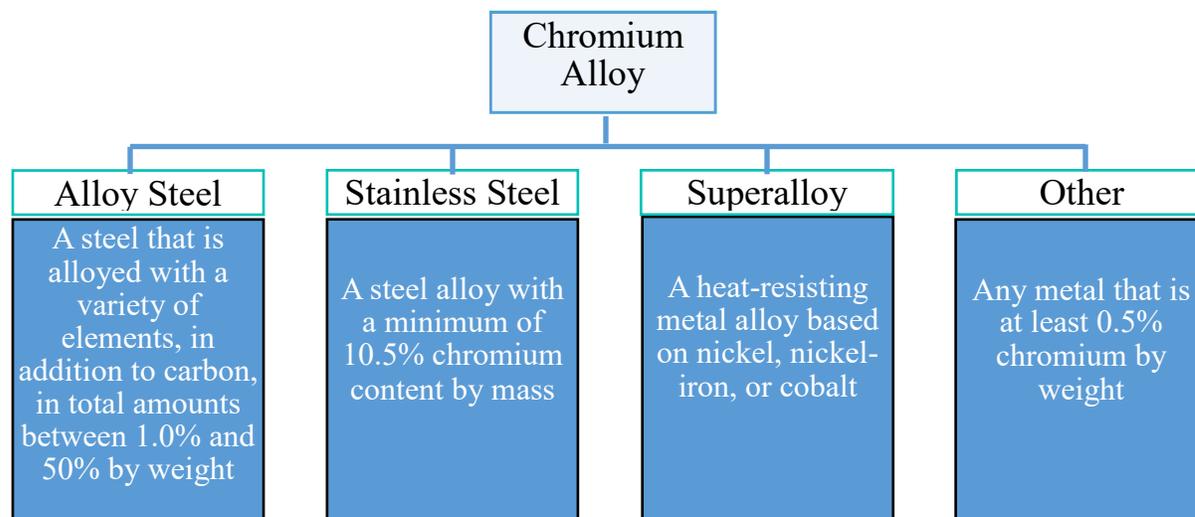
ALLOY STEEL is a steel that is alloyed with a variety of elements, in addition to carbon, in total amounts between 1.0% and 50% by weight.

CHROMIUM ALLOY is any alloy steel, stainless steel, superalloy, or any metal that is at least 0.5% chromium by weight.

STAINLESS STEEL is a steel alloy with a minimum of 10.5% chromium content by mass.

SUPERALLOY is a heat-resisting metal alloy based on nickel, nickel-iron, or cobalt.

Figure 2.2: Chromium Alloy



Operational Information Survey Requirements (Subdivision (d))

Many of the processes subject to Proposed Rule 1407.1 are not regulated by an industry-specific or source-specific rule to control toxic air contaminants. Additionally, in many cases the equipment does not require a permit because of throughput and/or burner size. As a result, detailed information of the metals processed, mechanical finishing activities, equipment parameters, and housekeeping is not known by SCAQMD. An operational information survey will identify types of operations and processes performed, collect detailed furnace information and, if applicable, identify pollution controls and specify existing housekeeping procedures. The survey will be required to be completed and submitted to the SCAQMD within 60 days of the adoption of Proposed Rule 1407.1.

Casting techniques performed are required to assist in further delineating potential requirements if significant differences in emissions are noted by technique or process. Information regarding mechanical finishing activities will help identify other potential emission sources. Information regarding metal melting furnaces and associated pollution controls will create an inventory of non-permitted and permitted chromium alloy metal melting furnaces. Refractory information is being requested to assess if the refractory brick or coating contains toxic air contaminants. Current housekeeping activities will provide details on current housekeeping practices that are implemented at the facility. Volume and metals melted will be used along with emissions data to calculate annual emissions.

The proposed requirements for the Operational Information Survey are listed below.

Within [60 Days After Date of Adoption], the owner or operator of a facility conducting chromium alloy melting operation(s) shall submit a completed survey that includes:

- (1) Casting techniques or melting processes performed on chromium alloys;*
- (2) Mechanical finishing activities or operations performed on chromium alloys;*
- (3) For each metal melting furnace melting chromium alloy:*
 - (A) South Coast Air Quality Management District (SCAQMD) application or permit number and device identification number, if applicable;*
 - (B) The equipment make, model, serial number, date of manufacture, and date of installation;*
 - (C) Furnace type;*
 - (D) Size and capacity;*
 - (E) Range of operating temperatures;*
 - (F) Minimum, average, and maximum weight of metal processed per batch and per day, based on data from calendar year 2018;*
 - (G) Fuel type, if gas fired, include British Thermal Unit (BTU) gas rating and burner age;*
 - (H) Refractory information, including, but not limited to, type of refractory brick and refractory coating, chromium content, frequency of refractory brick replacement and refractory coating application, based on data from calendar year 2018, if applicable;*
 - (I) Minimum, average, and maximum operating temperatures, based on data from calendar year 2018;*
 - (J) The equipment make, model, serial number, date of manufacture, and date of installation of associated Emission Collection System(s) and/or Emission Control Device(s), and corresponding SCAQMD application or permit number and device identification number, if applicable; and*
 - (K) Metals and alloys melted, based on data from calendar year 2018; and*
- (4) Housekeeping activities routinely performed, including schedule, method(s) used, and location(s) of activities.*

Source Test Requirements (Subdivision (e))

SCAQMD currently has one hexavalent chromium source test for a steel metal melting furnace. Hexavalent chromium was detected during the source test. Stakeholders and staff agree that further testing is necessary to assess toxic air contaminant emissions during chromium alloy melting operations. During the rule development process, staff offered to conduct source tests at certain facilities to obtain additional information about toxic air contaminant emissions from

chromium alloy melting operations. However, facilities were non-responsive or declined to allow the SCAQMD to conduct source testing. Therefore, Proposed Rule 1407.1 will require source testing at facilities that currently vent exhaust from chromium alloy melting operations to a control device. An owner or operator with chromium alloy melting operations that are not vented to a control device will not be required to source test these operations. Equipment that is vented to a control device has exhaust ducting that typically has sample ports that meet the minimum upstream and downstream duct diameter requirements, which is more conducive for source testing. Whereas, equipment without a control device may not have similar ducting and may need to be modified.

Source Test Protocol (Paragraphs (e)(1),(e)(2), and (e)(3))

Proposed Rule 1407.1 proposes to require the owner or operator of a facility to submit to the Executive Office a Source Test Protocol within 60 days of the adoption of the proposed rule. Appendix 1 of the Proposed Rule 1407.1 Staff Report – *SCAQMD Guidelines for the Preparation of Rule 1407.1 Source Test Protocols* is a guidance document which lays out the process for developing a Source Test Protocol. The Source Test Protocol shall include the source test criteria and all assumptions, required data, and calculated targets. Additionally information on proposed pollutant and capture efficiency test methods, analytical detection limits, sampling parameters, equipment, logistics, personnel, and other resources necessary is required in the Source Test Protocol.

The Executive Officer may approve or reject the Source Test Protocol. The basis for approval or rejection will be whether or not the owner or operator selected a furnace in accordance with the provisions in this subdivision and material deviations from source test protocol guidelines. If rejected, the owner or operator shall revise and resubmit the Source Test Protocol to correct all deficiencies within 30 days of the date of notification of rejection. This revised and resubmitted Source Test Protocol will either be approved by the Executive Officer or modified and approved as modified by the Executive Officer.

Conducting the Source Test (Paragraphs (e)(4) and (e)(5))

Within 90 days of the approval of the Source Test Protocol, the owner or operator shall conduct the source tests. The source test shall measure mass emissions and concentration for particulate matter; arsenic, cadmium, chromium, and nickel; and hexavalent chromium emissions at the inlet and outlet to the control device. The source test shall be conducted according to the Source Test Protocol and using the following test methods:

- For particulate matter,
 - SCAQMD Method 5.1 – *Determination of Particulate Matter Emissions from Stationary Sources Using a Wet Impingement Train;*
 - SCAQMD Method 5.2 – *Determination of Particulate Matter Emissions from Stationary Sources Using Heated Probe and Filter;* or
 - SCAQMD Method 5.3 – *Determination of Particulate Matter Emissions from Stationary Sources Using an In-Stack Filter;*
- For chromium and hexavalent chromium, CARB Method 425 – *Determination of Total Chromium and Hexavalent Chromium Emissions from Stationary Sources;* and/or
- For arsenic, cadmium, chromium, and nickel, CARB Method 436 – *Determination of Multiple Metal Emissions from Stationary Sources.*

SCAQMD Methods 5.1, 5.2, and 5.3 all test for particulate matter but have a specific applicability. All three methods are listed so that the owner or operator can select the applicable method, which will be approved through the Source Test Protocol by the Executive Officer.

SCAQMD Method 5.1 measures particulate emissions from stationary sources, except when determining compliance with New Source Performance Standards. In SCAQMD Method 5.1, stack gas is isokinetically withdrawn from the source through a sample train. Particulate matter is collected in chilled impingers and on a non-heated backup filter.

SCAQMD Method 5.2 measures particulate emissions from stationary sources. In SCAQMD Method 5.2, the sample is withdrawn isokinetically from the source through a sample train by a metering system. Filterable particulate matter is collected on a heated glass fiber filter. Condensables and particulate passing through the filter are collected in chilled impingers. SCAQMD Method 5.2 may require a separate train for sulfuric acid mist.

SCAQMD Method 5.3 measures particulate emissions from stationary sources, except when determining compliance with New Source Performance Standards. It does not apply to stacks that contain liquid droplets, or saturated with water vapor, where the temperature is greater than 400°F, or if the projected cross sectional area of the probe extension-filter holder assembly covers more than 5 percent of the stack cross sectional area. This method is recommended for testing cement plants and other sources emitting highly hygroscopic particulate matter. In SCAQMD Method 5.3, the sample is withdrawn isokinetically from the source through a sample train by a metering system. Filterable particulate matter is collected on a glass fiber filter kept inside the stack. Condensables and particulates passing through the filter are collected in chilled impingers. SCAQMD may require a separate train for sulfuric acid mist.

CARB Method 436 measures aluminum, antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, phosphorus, selenium, silver, thallium, vanadium, and zinc stack emissions from stationary sources. In CARB Method 436, the stack sample is withdrawn isokinetically from the source, with particulate emissions collected in the probe and on a heated filter and gaseous emissions collected in a series of chilled impingers.

CARB Method 425 measures hexavalent chromium and total chromium emissions from stationary sources. Applicability has been demonstrated for the metal finishing and glass industries, but has not been demonstrated for sources with high particulate mass emission rates. In CARB Method 425, particulate emissions are withdrawn isokinetically from the source and collected in a series of chilled impingers followed by a glass fiber backup filter. Although CARB Method 425 has not been demonstrated for the metal melting industry, it is the only available reference method applicable to measure hexavalent chromium emissions from this category of stationary sources. CARB Method 425 is widely used and has been used successfully by the SCAQMD for determination of hexavalent chromium emissions from metal melting, chrome plating/anodizing, heated dichromate sealing, cement kilns, heat treating furnaces, and forging operations. Other air districts have used CARB Method 425 similarly. EPA Method 0061 – Determination of Hexavalent Chromium Emissions from Stationary Sources measures hexavalent chromium emissions from hazardous waste incinerators, municipal waste incinerators, municipal waste combustors, and sewage sludge incinerators. This method has been evaluated for sampling train temperatures below 300°F, which may not be the case for Proposed Rule 1407.1 sources. For the most part, EPA Method 0061 has not been used in the past two decades as it is more expensive

and difficult than CARB Method 425 and has potential contamination issues from the required recirculation system.

For all the source tests, paragraph (e)(10) allows for alternative methods to be used provided they are approved in writing by the Executive Officer.

Furnace Selection (Paragraphs (e)(6) and (e)(7))

Under Proposed Rule 1407.1, an owner or operator is required to select the furnace to be source tested using the following parameters: the furnace is vented to a control device, produces the final product with the highest chromium concentration, and has the highest throughput in the facility. If approved by the Executive Officer, the owner or operator may select an alternative furnace and/or final product for source testing. Approval or rejection will be based on the furnace, final product processed, schedule, and throughput.

Capture Efficiency Testing (Paragraph (e)(8))

At the time of the source tests, the owner or operator shall also perform capture efficiency testing to determine the efficacy of the collection system. A hot-wire anemometer, a vane anemometer, or device approved by the Executive Officer, shall quantitatively measure velocity across a pre-determined matrix of parts. Additionally, a qualitative demonstration using smoke tubes or smoke sticks shall be conducted. Proposed Rule 1407.1 has a requirement to measure capture efficiency, but does not have a limit for capture efficiency. Capture efficiency will indicate whether the emission collection system adequately captures the emissions.

Materials Composition Testing (Paragraph (e)(9))

Under Proposed Rule 1407.1, the owner or operator is required to conduct Materials Composition Testing of the raw materials, molten material, final product, slag, dross, and baghouse catch. The materials composition testing should be from one batch processed during the chromium and hexavalent chromium source test. Facilities that melt scrap material do not need to test each piece of scrap in a melt, but must test, at a minimum, three different pieces from each batch of scrap. If the slag, dross, or baghouse catch is not accessible during the source test, then the samples must be tested as soon as they become accessible. Materials Composition Testing will allow an assessment of the materials added to the furnace and the substances created during the melting process which staff can correlate with the source test results.

Alternative Test Methods (Paragraph (e)(10))

A facility may request to use an alternative or equivalent source test method if approved in writing by the Executive Officer.

Testing Laboratories (Paragraph (e)(11))

All testing shall be conducted at a laboratory approved under the SCAQMD Laboratory Approval Program. If there is no approved laboratory for the test, then a laboratory may submit their procedures to the Executive Officer for approval. This ensures that quality assurance and quality control measures are adequate.

Notification of Source Testing (Paragraph (e)(12))

Proposed Rule 1407.1 requires that the owner or operator notify the Executive Officer in writing 10 calendar days prior to conducting the source test. This gives the opportunity for SCAQMD staff to be available to observe the source tests.

Submittal of Reports (Paragraph (e)(13))

Proposed Rule 1407.1 requires that no later than 60 days after the completion of the source test, the owner or operator submit reports from source tests, capture efficiency, and Materials Composition Testing.

SCAQMD Source Testing (Paragraph (e)(14))

SCAQMD will conduct source testing for the first three facilities that submit requests for SCAQMD to conduct source tests to the Executive Officer. Initially, SCAQMD offered to conduct source testing at certain facilities, but facilities were either non-responsive or declined. At subsequent working group meetings, staff offered to conduct source tests for any stakeholder subject to the proposed rule. Currently, no facility has agreed. Further testing is needed to assess toxic air contaminant emissions during chromium alloy melting operations. The proposed rule will require source testing, but SCAQMD wants to maintain its offer to conduct source testing. The source testing required by this rule is for informational purposes and not compliance testing.

Previous Source Tests (Paragraph (e)(15))

Facilities that have conducted source tests up to 12 months prior to the adoption of Proposed Rule 1407.1 will not be required to conduct this source test if the prior source tests meets the requirements of paragraphs (e)(4) through (e)(11).

Materials Composition Testing (Subdivision (f))

Facilities that were not required to conduct source testing because their furnaces did not have control devices must conduct Materials Composition Testing of the raw materials, molten material, final product, slag, and dross within 180 days of the adoption of Proposed Rule 1407.1. Facilities that melt scrap material do not need to test each piece of scrap in a melt, but must test, at a minimum, three different pieces from each batch of scrap. If the slag or dross is not accessible during or after the melt, then the samples must be tested as soon as they become accessible. Collecting materials composition data will provide information of the type and amount of toxic air contaminants throughout the metal melting process.

Materials Composition Testing will determine the weight percent of arsenic, chromium, hexavalent chromium, and nickel using the following test methods that are most applicable to the sample matrix and approved by Executive Officer:

- U.S. EPA 200.7 – *Determination of Metals and Trace Elements in Water and Wastes by Inductively Coupled Plasma-Atomic Emission Spectrometry*;
- U.S. EPA 6010D – *Inductively Coupled Plasma-Optical Emissions Spectrometry*;
- U.S. EPA 6020B – *Inductively Coupled Plasma-Mass Spectrometry*;
- U.S. EPA 6200 – *Field Portable X-Ray Fluorescence Spectrometry for the Determination of Elemental Concentrations in Soil and Sediment*;
- U.S. EPA 7196A – *Chromium, Hexavalent (Chelation/Extraction/Colorimetric)*; and/or
- U.S. EPA 7199 – *Determination of Hexavalent Chromium in Drinking Water, Groundwater and Industrial Wastewater Effluents by Ion Chromatography*.

For all the materials composition testing, paragraphs (e)(10) and (f)(4) allows for alternative methods to be used provided they are approved in writing by the Executive Officer.

Recordkeeping Requirements (Subdivision (g))

For a one year period beginning January 1, 2019 and ending January 1, 2020, the owner or operator must keep monthly records of run hours and type and amount of materials processed for each furnace that processes chromium alloys. This information provides a better understanding of the on-going daily activities and supplements the data received from conducting the source test. Vendor information is also to be provided to follow up on questions regarding consistency of products supplied. The vendor information may be provided as a list of vendors for all metals, additives, alloys, and scrap. For each baghouse venting furnace melting operations of chromium alloys, records shall be kept of baghouse catch weight per container and the date collected. The records shall be submitted to the Executive Officer by February 1, 2020 and shall be maintained for at least three years.

Exemptions (Subdivision (h))

The requirements of the proposed rule do not apply to equipment and operations that are subject to the lead series rules; Rules 1420, 1420.1, or 1420.2. These operations are already subject to point source controls, parametric monitoring, periodic source testing, and housekeeping provisions. Operations or equipment not subject to Rules 1420, 1420.1, or 1420.2, but located at a facility subject to those rule may be subject to Proposed Rule 1407.1 if they are melting chromium alloy. In order to exclude small operations, the requirements of the rule also do not apply to facilities that melt one ton per year or less of chromium alloys or to small furnaces with a capacity of 25 pounds or less, such as jewelers and testing laboratories.

CHAPTER 3: IMPACT ASSESSMENT

INTRODUCTION

RULE ADOPTION RELATIVE TO COST-EFFECTIVENESS

COMPLIANCE COSTS

SOCIOECONOMIC ASSESSMENT

CALIFORNIA ENVIRONMENTAL QUALITY ACT ANALYSIS

**DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY CODE
SECTION 40727**

COMPARATIVE ANALYSIS

INTRODUCTION

Proposed Rule 1407.1 will gather information and quantify the toxic air contaminant emissions from chromium alloy melting operations, including alloy steel, stainless steel, and superalloy melting operations. Cost information is provided though cost-effectiveness is not applicable for a rule controlling toxic air contaminants. Information pursuant to California Environmental Quality Act Analysis, required findings, and a comparative analysis of federal and SCAQMD rules applicable to the same source are provided below.

RULE ADOPTION RELATIVE TO COST-EFFECTIVENESS

On October 14, 1994, the Governing Board adopted a resolution that requires staff to address whether rules being proposed for amendment are considered in the order of cost-effectiveness. The 2016 Air Quality Management Plan (AQMP) ranked, in the order of cost-effectiveness, all of the control measures for which costs were quantified. It is generally recommended that the most cost-effective actions be taken first. However, cost-effectiveness defined as cost per ton of emission reductions is not meaningful for toxic risk since risk depends on several factors in addition to emission numbers such as geography, meteorology, and location of receptors.

COMPLIANCE COSTS

Proposed Rule 1407.1 is expected to affect 14 facilities. Five of the facilities will be required to conduct source testing at an estimated cost between \$20,000 and \$30,000 per facility based on vendor estimates. Three facilities may request that SCAQMD conduct the source testing at no charge to the facility. All 14 facilities will be required to do Materials Composition Testing. For a single material, an outside laboratory provided an estimate of \$300 which includes hexavalent chromium testing. Staff is assuming that five raw materials will be tested along with a single test each of the final material, slag, dross, and baghouse catch for a total of nine materials tested. The total cost for nine materials tested at 14 facilities is \$37,800. Lastly, industry estimates the additional recordkeeping associated with Proposed Rule 1407.1 will cost between \$3,000 and \$5,000 per facility. The total costs of Proposed Rule 1407.1 is a one-time cost of approximately \$240,000 to \$350,000. The one-time cost per facility is shown in Table 3.1 below.

Table 3.1: Estimated One-Time Costs per Facility

Facility Type	Source Testing	Materials Composition Testing	Recordkeeping	Total Cost
Chromium Metal Melting Facility with No Controls (6 facilities)	\$0	\$2,700	\$3,000 - \$5,000	\$5,700 - \$7,700
Chromium Metal Melting Facility with Controls (5 facilities)	\$20,000 - \$30,000	\$2,700	\$3,000 - \$5,000	\$25,700 - \$37,700
Chromium Metal Melting Facility with Controls; SCAQMD Conducts Testing (3 facilities)	\$0	\$2,700	\$3,000 - \$5,000	\$5,700 - \$7,700

SOCIOECONOMIC ASSESSMENT

The proposed rule does not directly affect air quality or establish emissions limitations, therefore, a socioeconomic impact assessment pursuant to California Health and Safety Code Section 40440.8 is not necessary or required. Nonetheless, staff conducted an alternative cost analysis so that the potential cost impacts to the affected industries may be considered. The majority of the affected facilities are in the primary metal manufacturing sector (94%), including iron and steel mills and ferroalloy manufacturing (NAICS 331110), steel investment foundries (NAICS 331512), and steel foundries (except investment) (NAICS 331513). The remaining facility is in fabricated metal product manufacturing (NAICS 332).

Of the 14 facilities identified, eight are required to conduct source testing and all 14 facilities will be required to conduct Materials Composition Testing. Staff expects source testing conducted in 2019 to cost \$20,000 to \$30,000 per facility based on vendor estimates. SCAQMD has provided the option for three facilities to request that SCAQMD conduct the source testing at no cost to the facility. The total cost of Materials Composition Testing (nine materials across 14 facilities) is expected to be \$37,800 based on vendor estimates. Lastly, additional recordkeeping requirements are expected to cost \$3,000 to \$5,000 per facility in 2019 only.¹⁰ In total, costs for all affected

¹⁰ Cost estimate from California Metals Coalition.

facilities are expected to range from \$240,000 to \$350,000, while the average cost per facility ranges from \$17,100 to \$25,000.

It has been a standard practice for SCAQMD's socioeconomic impact assessments that, when the annual compliance cost is less than one million current U.S. dollars, the Regional Economic Models Inc. (REMI)'s Policy Insight Plus Model is not used to simulate jobs and macroeconomic impacts, as is the case here. This is because the resultant impacts would be diminutive relative to the baseline regional economy.

CALIFORNIA ENVIRONMENTAL QUALITY ACT ANALYSIS

Pursuant to the California Environmental Quality Act (CEQA) and SCAQMD Rule 110, the SCAQMD, as lead agency for the proposed project, has reviewed Proposed Rule 1407.1 pursuant to: 1) CEQA Guidelines Section 15002(k) - General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA; and 2) CEQA Guidelines Section 15061 - Review for Exemption, procedures for determining if a project is exempt from CEQA. As provided in CEQA Guidelines Section 15306 - Information Collection, the proposed project is exempt because it will consist of basic data collection, research and resource evaluation activities and will not result in a serious or major disturbance to an environmental resource. CEQA Guidelines Section 15306 exempts such a project for information-gathering purposes, or as part of a study leading to future action which the agency has not yet taken. Furthermore, SCAQMD staff has determined that it can be seen with certainty that there is no possibility that the proposed project may have a significant adverse effect on the environment. Therefore, the project is also considered to be exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) - Activities Covered by General Rule. Finally, the proposed project is also considered categorically exempt because it contains requirements designed to protect or enhance the environment pursuant to CEQA Guidelines section 15308 – Actions by Regulatory Agencies for Protection of the Environment. A Notice of Exemption will be prepared pursuant to CEQA Guidelines Section 15062 - Notice of Exemption. If the project is approved, the Notice of Exemption will be filed with the county clerks of Los Angeles, Orange, Riverside and San Bernardino counties.

DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY CODE SECTION 40727

Requirements to Make Findings

California Health and Safety Code Section 40727 requires that prior to adopting, amending or repealing a rule or regulation, the SCAQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing and in the staff report.

Necessity

Proposed Rule 1407.1 is needed to gather information and quantify toxic air contaminant emissions data from melting operations of chromium alloys, including alloy steel, stainless steel, and superalloy melting operations. Data from these operations are limited because many melting furnaces do not require SCAQMD permits and these operations are not regulated by a source specific regulation for toxic air contaminants. Proposed Rule 1407.1 proposes an operation information survey to be conducted by applicable facilities to collect detailed furnace information, mechanical finishing activities, casting techniques, and understand current housekeeping practices. Proposed Rule 1407.1 also requires source testing that is needed to quantify emissions to identify

the appropriate level of pollution control. Metals composition testing requirements included in Proposed Rule 1407.1 will provide information on the type and amount of toxic air contaminants in alloys.

Authority

The SCAQMD obtains its authority to adopt, amend, or repeal rules and regulations pursuant to California Health and Safety Code Sections 39002, 39650 et. seq., 40000, 40440, 40441, 40702, 40725 through 40728, 41508, and 41511.

Clarity

Proposed Rule 1407.1 is written or displayed so that its meaning can be easily understood by the persons directly affected by it.

Consistency

Proposed Rule 1407.1 is in harmony with and not in conflict with or contradictory to, existing statutes, court decisions or state or federal regulations.

Non-Duplication

Proposed Rule 1407.1 will not impose the same requirements as any existing state or federal regulations. The proposed amended rules is necessary and proper to execute the powers and duties granted to, and imposed upon, the SCAQMD.

Reference

In amending this rule, the following statutes which the SCAQMD hereby implements, interprets or makes specific are referenced: Health and Safety Code sections 39002, 40001, 40702, 40440(a), 40725 through 40728.5, and 41511.

COMPARATIVE ANALYSIS

Health and Safety Code Section 40727.2 requires a comparative analysis of the proposed amended rule with any Federal or SCAQMD rules and regulations applicable to the same source. See Table 3.2 below.

Table 3.2: Comparative Analysis

Rule Element	PR 1407.1	Rule 1407	40 CFR Part 63 ZZZZZ	40 CFR Part 63 EEEEE	CARB Non-Ferrous Metal Melting ATCM
Applicability	Smelters (primary and secondary), foundries, die-casters, and other miscellaneous melting processes conducting chromium alloy (>0.5% chromium by weight) melting operations	Non-ferrous smelters (primary and secondary), foundries, die-casters, coating processes (galvanizing and tinning) and other miscellaneous processes such as dip soldering, brazing and aluminum powder production conducting non-ferrous metal melting	Area source iron and steel foundries emitting less than 10 tons per year of any single hazardous air pollutant or less than 25 tons of any single hazardous air pollutant constructed after September 17, 2007	Major source iron and steel foundries emitting 10 tons per year or more of any single hazardous air pollutant or 25 tons or more of any single hazardous air pollutant	Non-ferrous smelters (primary and secondary), foundries, die-casters, coating processes (galvanizing and tinning) and other miscellaneous processes such as dip soldering, brazing and aluminum powder production conducting non-ferrous metal melting

Rule Element	PR 1407.1	Rule 1407	40 CFR Part 63 ZZZZZ	40 CFR Part 63 EEEEE	CARB Non-Ferrous Metal Melting ATCM
Requirements	<ul style="list-style-type: none"> • Source test on one chromium alloy furnace if vented to control device • Materials composition testing on one alloy • Informational survey 	<ul style="list-style-type: none"> • Control particulate emissions from emission collection system by 99% • Temperature in exhaust stream may not exceed 360F • Maintenance program for emission control device monitoring • Housekeeping • Visible emission standards 	<ul style="list-style-type: none"> • New foundries control particulate emissions to 0.1 lb/ton and hazardous air pollutant emissions to 0.008 lb/ton • Pollution prevention management practices for metallic scrap and mercury switches • Maintenance program for emission control device monitoring • Housekeeping • Visible emission standards 	<ul style="list-style-type: none"> • Existing electric arc furnaces control particulate emissions to 0.005 gr/dscf and hazardous air pollutant emissions to 0.0004 gr/dscf • Existing cupolas control particulate emissions to 0.006 gr/dscf and hazardous air pollutant emissions to 0.0005 gr/dscf • New electric induction furnaces control particulate emissions to 0.001 gr/dscf and hazardous air pollutant emissions to 0.00008 gr/dscf • New electric arc furnaces and cupolas control particulate emissions to 0.002 gr/dscf and hazardous air pollutant emissions to 0.0002 gr/dscf • Plan or certification to minimize hazardous air pollutants from scrap • Maintenance program for emission control device monitoring • Housekeeping • Visible emission standards 	<ul style="list-style-type: none"> • Control particulate emissions from emission collection system by 99% • Temperature in exhaust stream may not exceed 360F • Maintenance program for emission control device monitoring • Housekeeping • Visible emission standards
Reporting	Source test results, materials composition testing results, process records	None	Semiannual compliance reports for exceedances, parametric monitor downtime, deviations from pollution prevention practices	Semiannual compliance reports for exceedances, parametric monitor downtime, deviations from pollution prevention practices	None
Monitoring	One time source test on a chromium alloy furnace that is vented to a control device	<ul style="list-style-type: none"> • One time source test on a furnace that is vented to a control device • Parametric monitoring • Bag leak detection system 	<ul style="list-style-type: none"> • Source test on a furnace that is vented to a control device every five years • Parametric monitoring • Bag leak detection system 	<ul style="list-style-type: none"> • Source test on a furnace that is vented to a control device every five years • Parametric monitoring • Bag leak detection system 	<ul style="list-style-type: none"> • One time source test on a furnace that is vented to a control device • Parametric monitoring • Bag leak detection system
Recordkeeping	One year of process records for chromium alloy metal melting	Source testing results made available for two years	Test reports, notifications, semiannual reports	Test reports, notifications, semiannual reports	Source testing results made

Rule Element	PR 1407.1	Rule 1407	40 CFR Part 63 ZZZZZ	40 CFR Part 63 EEEEE	CARB Non-Ferrous Metal Melting ATCM
	furnaces, vendors of raw materials, and baghouse catch weights		made available for five years		available for two years

**APPENDIX 1: SCAQMD GUIDELINES FOR THE PREPARATION OF
RULE 1407.1 SOURCE TEST PROTOCOLS**

INTRODUCTION

PREPARING A SOURCE TEST PROTOCOL

INTRODUCTION

A Rule 1407.1 source test protocol specifies which source will be tested and how emissions and samples will be sampled, analyzed, and reported. Source test protocols establish procedures to ensure results are accurate and representative of a source's emissions. Once SCAQMD evaluates and approves a test protocol, the owner or operator of a facility conducting chromium alloy melting operation(s) can be reasonably assured that test results will be accepted if the source test protocol is followed.

PREPARING A SOURCE TEST PROTOCOL

The source test protocol shall include the following sections: Cover Page; Table of Contents; Introduction; Equipment, Process, and Operation Description; Testing Methodology; Quality Assurance/Quality Control (QA/QC) Procedures; Calculations Procedures; and Report Information and Format.

Cover Page

The Cover Page shall include the following:

- 1.) The facility name and facility identification number;
- 2.) The metal melting furnace and associated emissions collection system and emissions control device to be tested pursuant to Rule 1407.1 paragraph (e)(6) or (e)(7);.
- 3.) The principal author's company, name, job title, address, phone number, and e-mail address;
- 4.) The date of the protocol submittal, given in a month, day, and year format (mm/dd/yy); and
- 5.) The signature of the principal author.

Table of Contents

The Table of Contents shall identify each section with their commencing page numbers. Each page of the source test protocol (including, but not limited to, sample forms, copies of SCAQMD permits, and third party reports) must have a unique and sequential page number.

Introduction

The Introduction shall include the following:

- 1.) The name of facility, facility identification number, mailing address, and equipment address, if different from the mailing address;
- 2.) The facility contact's name, job title, phone number, and e-mail address;
- 3.) The name of the source testing laboratory, mailing address, contact name, phone number, and e-mail address;
- 4.) The name of the analytical laboratory, mailing address, contact name, phone number, and e-mail address; and
- 5.) The number of testing days and the estimated test date(s).

Equipment, Process, and Operation Description

The Equipment, Process, and Operation Description shall include the following information for the source to be tested:

- 1.) Justification for selection of the metal melting furnace and associated emissions collection system and emissions control device to be tested pursuant to Rule 1407.1 paragraphs (e)(6) and (e)(7);
- 2.) Information requested in Rule 1407.1 paragraph (d)(3);
- 3.) Copy of the SCAQMD permit(s), if applicable;
- 4.) Description of how fuel usage or energy consumption will be monitored;
- 5.) Typical operating conditions of the device;
- 6.) Operating conditions of the device at the time of the test and validation that these conditions are representative of normal operations;
- 7.) Description of what and how products are produced at the facility, including, but not limited to, the final specifications of those products;
- 8.) Description of material produced during the test, details of the melt, final specifications of the product, and validation the alloy has the highest chromium concentration in the final product processed or justification for processing an alternative product;
- 9.) Control parameters for the control device, if applicable;
- 10.) Schematic diagram of the exhaust stack showing the stack location with regard to the number of duct diameters to the nearest upstream/downstream flow disturbances;
- 11.) Description of access to the sampling ports, and availability of a platform and room for testing equipment at the sampling port;
- 12.) Flow diagram and a stepwise description explaining the equipment's operation with respect to the facility's process. Include a schematic of the equipment, fuel lines, instruments, control device, and other major ancillary equipment. Also include all emission points (or potential emission points), and bypass stacks in the schematic;
- 13.) Location and specifications of process monitoring instruments. Information for process monitoring instruments shall include:
 - Dates the process monitoring instruments were last calibrated;
 - Documentation which can verify the process monitoring instrument's accuracy; and
 - Whether or not the instruments that report output need to be corrected to standard conditions and, if so, how the output is to be corrected, and what other calibrated instruments are needed to adjust the raw measurement;
- 14.) Configuration of the exhaust stream, including the positioning of dampers, the presence of dilution flow, or whether flow is partially emitted through bypass stacks; and
- 15.) Special safety considerations when collecting samples or performing the laboratory analysis.

Testing Methodology

The Testing Methodology shall include the following:

- 1.) Test methods that will be employed to determine emissions, capture efficiency, and materials composition;
- 2.) General description which summarizes each proposed method. List and justify all proposed deviations from the standard test method. For instrumental methods, submit a detailed description of the sampling and analytical system. This description shall include specifics, such as the sampling procedures, sample preparation, analytical principle of each instrument, the available analytical ranges,

- detection limits, sample conditioning equipment, materials for construction of sample lines, a sampling flow schematic, the instrument stripchart manufacturer, frequency of data recording, etc;
- 3.) Ambient parameters that will be monitored during the test, a description of how the parameters will be monitored, and frequency of the readings;
 - 4.) Equipment parameters that will be recorded during the test, a description of how the parameters will be monitored, and frequency of the readings;
 - 5.) Whether the process monitoring instruments are calibrated and whether there are records to confirm the accuracy and precision of the instrument;
 - 6.) Whether the sampling equipment requires a special set-up and/or warm-up period with pre-test and post-test diagnostics;
 - 7.) Parameters that will be monitored to assure the proper or timely operation of the sampling equipment, such as the conditioning temperature, orifice pressures, instrument response time, etc;
 - 8.) How exhaust flow conditions, such as stratification or cyclonic flow, will be addressed during the test. If these conditions have been addressed in previous testing, include detailed results;
 - 9.) Problems unique to specific equipment and how they will be addressed;
 - 10.) Proposed sampling time. The total sample volume for each sample must be sufficient to achieve analytical results at least three (3) times greater than the method detection limit. Alternatively, collect a minimum sample volume of 150 dry standard cubic feet (dscf) for each sample, assuming the following method detection limits from CARB Methods 425 and 436:
 - Arsenic $\leq 2.1 \mu\text{g/l}$,
 - Cadmium $\leq 0.01 \mu\text{g/l}$,
 - Chromium $\leq 0.4 \mu\text{g/l}$,
 - Hexavalent Chromium $\leq 0.02 \mu\text{g/l}$, and
 - Nickel $\leq 0.07 \mu\text{g/l}$;
 - 11.) Any special sampling considerations due to the nature of the emissions or stack configuration requiring accommodations for lengthy heated lines, saturated moisture content, interferences, toxic emissions, hygroscopic particles, or other non-routine sampling conditions;
 - 12.) How the samples are to be analyzed once the collection at the source is completed:
 - Identify the analytical procedures that will be performed. These methods and procedures shall provide the sensitivity to detect the anticipated emission concentrations, be recognized by the SCAQMD, and represent the most current and reliable means for analysis;
 - Identify the analytical laboratories that will perform the analysis and if these laboratories are SCAQMD approved, if applicable;
 - Identify the laboratory's detection limits for the proposed analysis;
 - Describe how blank analyses will be handled; and
 - Identify any deviations to the recognized analytical test procedure;
 - 13.) Signed statement confirming that the test laboratory qualifies as an independent laboratory, per SCAQMD Rule 304(k) definitions; and
 - 14.) Current approval letter that the testing lab is a SCAQMD Laboratory Approval Program (LAP) testing lab or proof of Executive Officer approval.

Quality Assurance/Quality Control (QA/QC) Procedures

The QA/QC Procedures shall include:

- 1.) Sample field data sheets, calibration forms, and equipment maintenance records. Where possible, standardized forms shall be used (see the SCAQMD Source Test Manual for standard data sheets and forms);
- 2.) Calibration procedures of the field and laboratory instruments. Indicate whether calibration and maintenance schedules comply with the Chapter III procedures of the SCAQMD Source Test Manual. If not, justify the reason for deviating from the SCAQMD procedures;
- 3.) Sampling handling, chain-of-custody, and sample storage procedures employed by the testing laboratory. Provide assurances that the samples will be properly stored at the required environmental conditions in a tamper-proof and secure container;
- 4.) Sample forms for verifying that the sampling equipment (including glassware, filters, canisters, bags, tubing, etc.) will be properly cleaned and stored prior to field and laboratory use;
- 5.) QA/QC procedures employed by the analytical laboratory. Example QA/QC topics for analytical laboratories include: instrument calibration procedures, matrix spiking, duplicate injections, blank analyses, control samples, and interference checks;
- 6.) For low level analyte measurements, include a discussion of:
 - Special cleaning procedures, such as acid washing of equipment;
 - The purity level of analytical reagents;
 - Low level calibrations, especially if close to the detection limit;
 - A limited storage time prior to analysis;
 - Handling of field blanks; and,
 - Replicate analyses; and
- 7.) Calibration data of instruments.

Calculations Procedures

Calculations Procedures shall include:

- 1.) The proposed formulas to calculate gaseous concentrations, exhaust flow, mass emissions, etc., based on measurements of the raw data;
- 2.) Sample forms showing how intermediate calculations will be used to arrive at the final result. If constants are used, provide derivations showing how the constants were determined. If the calculation form is formatted as a spreadsheet, include cell formulas so that the calculations may be reviewed. In order to demonstrate the use of the calculation form or spreadsheet, provide a numerical example using hypothetical realistic data set;
- 3.) How the bias or drift correction factors will be determined and applied, if applicable; and
- 4.) How low concentrations will be expressed.

Report Information and Format

Report Information and Format shall include:

- 1.) Description of how the report will be organized. Whether it follows the general outline of the source test report described in Chapter II of the SCAQMD Source Test Manual. If not, explain how the proposed format differs;

- 2.) Identification of each section of the report in the order that they will be presented and an explanation of what topics will be discussed in each section. Indicate which section(s) will contain the raw field data, analytical results, calculations, calibration results, facility data, copy of the SCAQMD permit(s), etc.;
- 3.) Items to be submitted with the full laboratory package, which, at a minimum, shall include: sample preparation, raw analytical data, instrument calibrations, QA/QC checks, and calculations;
- 4.) A description of how digitized media will be presented, (e.g. digitized pictures, DVD videos, scanned images, or computer spreadsheets); and
- 5.) A confirmation that the report will include all elements from the Source Test Protocol, as discussed in these guidelines.

APPENDIX 2: COMMENTS AND RESPONSES

Comment Letter #1: California Metals Coalition September 13, 2018

September 13, 2018

Susan Nakamura, Assistant Deputy Executive Officer
South Coast Air Quality Management District
21865 East Copley Drive
Diamond Bar, California 91765

Dear Ms. Nakamura:

The California Metals Coalition appreciates the opportunity to comment on the South Coast Air Quality Management District ("District" or "SCAQMD") workshop proceedings and possible creation of SCAQMD Rule 1407.1.

These comments are divided into the following sections: Summary; Background on CMC; Previously Asserted and Unaddressed Questions and Concerns; Additional Comments on August 30, 2018 Public Workshop; and Conclusion.

SUMMARY

This comment letter addresses concerns held by CMC members regarding the SCAQMD rulemaking process in connection with proposed Rule 1407.1. CMC and other industry members have been involved in the rule making process for Proposed Rule 1407.1 since it was proposed and have been involved in the rulemaking process for Proposed Rule 1407 and other rules prior to that. Throughout its involvement, CMC has made comments regarding Proposed Rule 1407.1 and SCAQMD's improper approach to rule making in regards to Rule 1407.1, including its efforts to rush through the process without developing a proper scientific and data-driven basis for the proposed rule. CMC submitted written comments on March 30, 2018, May 4, 2018, and June 25, 2018. To date, CMC's comments have largely gone ignored and its questions remain unanswered. This letter restates CMC's concerns and requests, once again, that SCAQMD staff address in writing CMC's stakeholder questions.

Finally, this letter also addresses issues that arise from the 1407.1 slides presented at the SCAQMD Proposed Rule 1407.1 Public Workshop on August 30, 2018. On August 30, the SCAQMD staff addressed plans to establish source testing, and broad data and informational gathering requirements for facilities that melt metals with a certain percentage of chromium content. Staff's stated goal is to bring Proposed Rule 1407.1 to the SCAQMD Board for a vote on November 2, 2018.

BACKGROUND ON CMC

California is home to approximately 4,000 metalworking facilities, employing over 350,000 Californians. The average industry salary is \$66,400/year in wages and benefits.

8 out of 10 employees in the metalworking sector are considered ethnic minorities or reside in disadvantaged communities throughout Southern California. A job in the metals sector is often the only path to the middle class for many of these Californians.

Here is a breakdown of the metalworking industry's impact on the 4 counties within SCAQMD jurisdiction:

- Los Angeles County: 54,290 Direct Jobs | 52,741 Indirect Jobs | \$7 billion wages | \$26 billion economic activity
- Orange County: 25,448 Direct Jobs | 18,912 Indirect Jobs | \$2.9 billion wages | \$10.8 billion economic activity
- San Bernardino: 9,778 Direct Jobs | 8,378 Indirect Jobs | \$1.2 billion wages | \$4.5 billion economic activity
- Riverside: 6,971 Direct Jobs | 7,712 Indirect Jobs | \$957 million wages | \$3.2 billion economic activities
- Total: 96,487 Direct Jobs | 87,743 Indirect Jobs | \$12 billion wages | \$33.8 billion economic activity

California metal manufacturers use recycled metal (ex: aluminum, brass, iron and steel) to make parts for the aerospace industry, clean energy technologies, electric cars, biotech apparatuses, medical devices, national defense items, agriculture, infrastructure, construction machinery, household appliances, food processing and storage, movement of water, and millions of other products demanded by society.

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CMC'S PREVIOUSLY ASSERTED AND UNADDRESSED QUESTIONS AND CONCERNSItem #1: Rushed Rulemaking for New Rule 1407.1 Without Metal Melting Science and Data

In a letter concerning the April 25, 2018, Group Meeting # 4 on Rule 1407.1, CMC addressed its concerns with 1407.1. In that letter and again in a letter dated June 25, 2018, CMC objected to SCAQMD's rush to quickly push through rule making for Proposed Rule 1407.1. CMC reiterates its strong disagreement that this rulemaking should be rushed prior to gathering the proper data and science for metal melting. There is no evidence in the record to support material aspects of Proposed Rule 1407.1. The addition of hexavalent chromium requires a thorough and complete investigation to fully develop an appropriate rule. A typical development stage could take over two years to properly complete and is supported by peer reviewed literature, data relevant to metal melting, and science relevant to metal melting. With respect to Proposed Rule 1407.1, which was first proposed on April 25, 2018, SCAQMD is attempting to complete the rule making process in half a year without consideration of a full and complete analysis of all relevant information.

1-1

Health & Safety Code section 40727 requires that "[b]efore adopting, amending, or repealing a rule or regulation, the district board shall make findings of necessity, authority, clarity, consistency, nonduplication and reference ... based upon information developed pursuant to Section 40727.2, information in the rulemaking record ..., and relevant information presented at the hearing." (See Health & Safety Code § 40727(a)). Section 40727.2 requires that the District prepare a comprehensive written analysis of the proposed rule or rule amendment, including its relation to other existing federal air pollution requirements, as well as an analysis of the impact of the proposed regulations. (See Health & Safety Code § 40727.2). CMC is unaware of any effort by the District to complete such an analysis. The proposed change to include hexavalent chromium in Rule 1407.1 is material and the significance of its inclusion should not be an afterthought.

Item #2: Ignoring and Misrepresenting Temperature in New Rule 1407.1

SCAQMD staff have not conducted research nor provided any science on how temperature impacts the potential conversion of chromium to hexavalent chromium during the metal melting process. When CMC asked SCAQMD staff to provide literature on the issue of temperature, staff presented a study from India at the January 30, 2018 working group meeting.

1-2

On slide 14 of the January 30, 2018, presentation, SCAQMD staff represented that "[t]rivalent chromium in chromium(III) oxide (Cr₂O₃) could be converted to hexavalent chromium at a temperature range of 200-300°C (392-572°F)." In support of this statement, the presentation cited an article entitled "Extent of oxidation of Cr(III) to Cr(VI) under various conditions pertaining to natural environment," from the Journal

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of Hazardous Materials, February 6, 2006. The study contained in this article concerns an investigation of chromium-contaminated tannery sludge at a dumping site in Kanpur, India. The study's conclusions are completely unreliable as they are based on limited information derived from a questionable source and have not been properly subjected to peer-review. Moreover, the tannery processes at issue in the study differ drastically from processes involved in metal melting operations, the subject of Rule 1407.1.

Differing processes in different industries will subject chromium compounds to factors other than temperature that could potentially contribute to and alter the conversion process. As such, the study upon which SCAQMD staff relies fails to establish a scientifically reliable basis in support of staff's assertions regarding the conversion temperatures of chromium compounds. CMC also commented that presenting the India study in a public meeting is potentially misleading to the public. With only 5 bullet points, and a single footnote on Slide 14, the public could conclude that this study supports the conversion of hexavalent chromium at temperatures as low as 392 °F for the metal melting industry. Many households and restaurants use stainless steel cookware, ovens, and oven racks. These items contain chromium that, based on staff's January 30, 2018 presentation, is converted to hexavalent chromium at very low temperatures. Slide 14 could lead the public to believe that hexavalent chromium is released when the cooking temperature exceeds 392 °F.

1-2

Item #3: Failed Bifurcation in New Rule 1407.1

CMC also expressed concerns in writing, and at the working group meetings, that placing non-ferrous and ferrous metals in a single rule further ignored the issue of temperature in metal melting. Chromium has a melting point of 3465 °F. Non-ferrous metals melt at a temperature far below the melting point of chromium (ex: aluminum has a melting point of 1200 °F). And ferrous metals also melt at a temperature below the melting point of chromium (ex: steel has a melting point of 2600 °F). In December 2017, CMC asked staff to acknowledge the issue of temperature, respond to the fact that chromium doesn't reach its melting point in many alloys, and bifurcate the rules into ferrous and non-ferrous rules.

1-3

Staff appeared to have agreed with CMC and stated in the April 25, 2018 presentation, on Slide 18, that "As a result, staff has decided to bifurcate the rulemaking; Rule 1407 will address non-ferrous metal melting; Rule 1407.1 will address ferrous metal melting."

But staff quickly changed its position and in the August 2018 staff report, stated on Page 1-2 that "Staff bifurcated the two rules into non-chromium and chromium instead of non-ferrous and ferrous because certain ferrous alloys do not contain chromium and some non-ferrous alloys contain chromium." It is clear to CMC that the bifurcation was a complete failure. Staff's comments also further demonstrate that staff does not have information, understanding, or insight on why CMC requested a bifurcation based on

temperature and how temperature impacts the potential conversion of chromium to hexavalent chromium in metal melting. 1-3

Item #4: Improper Application of CARB Test Method 425 for Metal Melting

CMC has previously objected to the use of CARB Test Method 425 for Proposed Rule 1407.1. The metal melting sector has voiced many concerns with using CARB 425 as the preferred or sole solution for chromium and hexavalent chromium testing for metal melting. On August 9, 2018, Slide 26, staff has even gone as far as to label CARB 425 as the "Gold Standard for Cr+6 Testing." This is an arbitrary comment, based on opinion and not on any standard. In fact, CMC is unaware of a single government agency that has approved CARB 425 for metal melting. CARB Test Method 425 has not been approved by CARB, or any other entity, for use in connection with metal melting operations.

The applicability of CARB Test Method 425 is made very clear by CARB. As amended on July 28, 1997, the "Applicability" of the CARB 425 test method is described by CARB on Page 1 as: 1-4

1.1 Applicability: This method (CARB 425) applies to the determination of hexavalent chromium (Cr6) and total chromium (Cr) emissions from stationary sources. Applicability has been demonstrated for the metal finishing and glass industries. Its applicability has not been demonstrated for sources with high particulate mass emission rates.

SCAQMD staff argues that CARB Method 425 is appropriate because it was used once for a source test at a metal melting facility in 1993. However, CARB Method 425 was revised in 1997 and its applicability to metal melting has never been tested in its revised state. One instance of prior use twenty-five years ago is not an appropriate basis for applying the method to an entire industry. For Proposed Rule 1407.1, CARB 425 provides an unguided path that can result in the collection of bad data.

Item #5: Staff Dismissing the Benefit and Need for Academic Research and Data Collection for Metal Melting

At the April 25, 2018 working group meeting CMC, and numerous industry stakeholders, expressed their support for the collection of metal melting data at Cal Poly Pomona's metal melting facility. It is hard to argue against the pursuit of good science, and collection of relevant data, at a California university. 1-5

But at the August 30, 2018 public workshop, SCAQMD staff dismissed Cal Poly Pomona and stated it was not suitable for research because of the the size of the furnace. This position holds no merit as there is no evidence that furnace size has any impact on the potential conversion of chromium to hexavalent chromium in the metal melting processes.

This position is also contradictory to SCAQMD's definition of a "metal melting furnace," which is defined as "any apparatus in which metal in a container is brought to a liquid state including, but not limited to, reverberatory, cupola, induction, direct arc furnaces, sweat furnaces, and refining kettles, regardless of the heating mechanism. METAL MELTING FURNACE does not include any apparatus in which the metal is heated but does not reach a molten state, such as a sintering furnace or an annealing furnace." There is no reference to size in this definition. As such, SCAQMD's refusal to engage Cal Poly Pomona for academic research based on the size of its furnace lacks credibility.

At the August 30, 2018 public workshop, SCAQMD staff also rejected academic research by alleging that such academic research cannot provide real world data. This blanket statement is contrary to years of research conducted by the SCAQMD, as well as a precedent previously set by the SCAQMD Board for metal heat treating. The SCAQMD funded research, and on June 28, 2018 executed a contract for heat treating research at UC Riverside, prior to doing a rule for that sector. SCAQMD staff says that the UC Riverside study has no bearing on the rulemaking status for heat treating because it has data on this sector. However, the October 2017 proposal that the Board authorized states otherwise. On page 5 of the October 6, 2017 SCAQMD Board Meeting Agenda No. 9, it outlines many unknowns and states as follows:

1-5

*Several mechanisms **may be** causing increased production of Cr6+ at heat-treating furnaces. These include: conversion of chromium by heat in the furnace insulating refractory materials, conversion of stainless steel type chromium-containing materials used in the construction of the furnaces, conversion of stainless steel type chromium containing-parts and parts racks placed in the furnaces, conversion in the accumulated metal and refractory dust on the furnace floors, conversion of airborne chromium laden dusts in the facility pulled into the furnaces, and exacerbation of the conversion dependent on oxygen or other combustion conditions in the furnaces. **The relative impact of each mechanism to the overall Cr6+ emissions is not yet fully understood.** This action is to authorize the Chairman to execute a contract with CE-CERT in an amount not to exceed \$174,000 to fully characterize and quantify the specific mechanisms that lead to Cr6+ production from forging and heat treating furnaces.*

Many questions being researched at UC Riverside are the same issues unresolved for metal melting. The influence of temperature on chromium—not the process at which the heat is being applied—is useful and could create universally acceptable data. Any perceived inadequacy of Cal Poly Pomona's capacity, or value of the required research, is unfounded and does not negate the need to complete the research.

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ADDITIONAL COMMENTS ON AUGUST 30, 2018 GROUP MEETING

Item #1, Slide # 4, SCAQMD’s Inaccurate Statements Regarding Regulated Operations

On Slide 4 of the August 30, 2018 presentation, the SCAQMD claims that alloy steel and stainless steel facilities are “not regulated.” This is inaccurate. Eight out of fourteen CMC facilities that will be impacted by Proposed Rule 1407.1 have permits and pollution control systems. The other six are very small facilities that have SCAQMD permits. CMC requests that this language be omitted as it is misleading to the SCAQMD Board.

1-6

Item #2, Slide # 4, SCAQMD’s Unsupported Statements Regarding the Correlation Between High Temperatures and Hexavalent Chromium Emissions

On Slide 4 of the August 30, 2018 presentation, SCAQMD makes the conclusion that “it is expected that at higher temperatures and higher chromium concentrations, more hex chrome emissions will occur.” SCAQMD has not provided any data in support of this statement. It is just a hypothesis, at best. Either data supporting this statement should be presented or the statement should be removed.

1-7

Item #3, Slide # 5, SCAQMD’s Improper Reliance on Irrelevant Studies

On Slide 5 of the August 30, 2018 presentation, SCAQMD reference an OSHA study as support for Proposed Rule 1407.1. The OSHA study is asserted to support the statement that “[w]orker exposure can occur during ‘hot work’ of steels containing chromium.” The OSHA study is referring to welding, which can operate at temperatures up to 30x higher than metal melting. The term “hot work” is defined by OSHA as “riveting, welding, flame cutting or other fire or spark-producing operation.” This definition does not include metal melting operations and, as such, does not support Proposed Rule 1407.1.

1-8

Item #4, Slide # 5, SCAQMD’s Improper Reliance on Irrelevant Studies

The same slide also references a 2013 CDC study as support for statement that [a]t high temperatures, hexavalent chromium is formed as a by-product when metals containing chromium are processed. The bulk of this study references welding uses data was collected using NIOSH Test Method 7703, which includes a portable personal pump clipped to a worker’s collar for 8 hours. The worker is mobile throughout the facility. As such, this study also fails to provide support for Proposed Rule 1407.1.

1-9

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Item #5, Slide # 5, SCAQMD's Improper Reliance on Irrelevant Studies

Slide 5 also references "Screening Tests on Heat Treating Furnaces" as evidence that metal melting converts chromium to hexavalent chromium, as well as the 2016-2017 ambient air monitoring in Paramount, California as evidence that metal melting converts chromium to hexavalent chromium. This is improper because heat treating and metal melting are different. Also, CMC is unaware of any ambient air monitoring results from the Paramount ambient air monitoring being traced back to metal melting facilities.

1-10

Conclusion

As a stakeholder, CMC continues to outline numerous comments, questions and concerns that the metals industry has about 1407.1 and a rushed rulemaking process leaves little or no time for discussion and review. This is made even more important by the fact that SCAQMD has failed to respond to several of CMC's letters in writing.

It has been nearly 5 months since CMC offered to fund research at Cal Poly Pomona that will provide currently unavailable data on the potential conversion of chromium to hexavalent chromium during the metal melting process. There are enormous benefits to conducting this research since:

- (1) The SCAQMD does not have any literature supporting the conversion of chromium to hexavalent chromium during the metal melting process;
- (2) The SCAQMD does not have any research to refer to that demonstrates the conversion of chromium to hexavalent chromium during the metal melting process;
- (3) The SCAQMD does not have any acceptable data from metal melting facilities that demonstrates the conversion of chromium to hexavalent chromium during the metal melting process;
- (4) The SCAQMD does not have an approved test method for metal melting to measure the potential conversion of chromium to hexavalent chromium during the metal melting process; and
- (5) The SCAQMD has no answers to the impact of temperature during the metal melting process and no information detailing the chemical reaction where heat may convert chromium to hexavalent chromium during the metal melting process.

And since hexavalent chromium is very unstable (the half-life is 12 hours in the atmosphere) and wants to grab electrons from any surface to change to chrome 3 which is not toxic, unknowns also include the

duration of heat needed to create the conversion, and how cooling impacts the change of hexavalent chromium back to chromium.

According to Cal Poly Pomona's College of Engineering website, "Cal Poly Pomona is the home of the largest and best equipped university foundry in the West...Melting is accomplished using an induction furnace as well as a gas-fired unit." The time is now to take a positive step forward and engage California's finest university for metal melting before making any unfounded conclusions through Proposed Rule 1407.1.

Sincerely,



James Simonelli
CMC Executive Director

Cc: Mike Morris, SCAQMD
Uyen Uyen Vo, SCAQMD
SCAQMD Stationary Source Committee

Response to Comment 1-1

Staff disagrees that the rulemaking has been rushed. Site visits to gather information began in 2015. The first working group meeting was held on September 5, 2017 and there have been seven working group meetings in total and a public workshop. The reference to the April 25, 2018 date is when Proposed Amended Rule 1407 was bifurcated into Proposed Amended Rule 1407 and Proposed Rule 1407.1, as requested by industry stakeholders. The first four working group meetings, held as Proposed Amended Rule 1407, addressed toxic air contaminants (in particular, arsenic, cadmium, hexavalent chromium, and nickel) from ferrous and non-ferrous metal melting operations. Describing the rulemaking process timeframe as “half a year” is misleading as it discounts all the visits, meetings, and discussions that led to the formation of Proposed Rule 1407.1 as meaningless.

Staff agrees with California Metals Coalition (CMC) that the addition of hexavalent chromium requires a thorough investigation. This is precisely the foundation of Proposed Rule 1407.1 as an information gathering rule. Typically this is done as part of the development of the rule, but facilities have declined to allow SCAQMD to conduct the needed source testing as part of the investigation.

Health and Safety Code 40727.2 requires a comparative analysis to be completed 30 days before the adoption of Proposed Rule 1407.1. This comparative analysis is included in the Draft Staff Report for Proposed Rule 1407.1.

Response to Comment 1-2

Staff provided evidence during Working Group Meeting #3 on January 30, 2018 from two source tests of metal melting furnaces indicating that hexavalent chromium is emitted. The source tests showed hexavalent chromium conversion rates of between 3% and 76%. Staff also referenced a tannery sludge study which, as working group members correctly pointed out, is not directly related to metal melting. It was included as background information only and is not used to make any conclusions.

Response to Comment 1-3

At the recommendation of CMC, staff bifurcated the rule so that more information could be gathered regarding hexavalent chromium emissions. At Working Group Meeting #4 on April 25, 2018, staff's initial concepts were to bifurcate the rules into ferrous and non-ferrous metal melting. Staff noted that not all ferrous metals contain chromium (i.e. steel and iron) and that some non-ferrous alloys (superalloys) contain chromium. To better address the potential sources of hexavalent chromium emissions, staff chose not to bifurcate between ferrous and non-ferrous, and instead chose to bifurcate between chromium containing (> 0.5% by weight) and non-chromium alloys; this concept was presented at Working Group Meeting #5 on June 6, 2018. CMC's assertion that non-ferrous metals have lower melting points is incorrect as nickel alloys and superalloys have melting temperatures above 2,000°F.

Response to Comment 1-4

CARB Test Method 425 is the appropriate method to determine hexavalent chromium emissions from stationary sources. CMC's assertion that it has not been approved by CARB, or any other entity, for use in connection with metal melting operations is incorrect. While the method

description notes that it has been “demonstrated for the metal finishing and glass industries”, that does not mean that it isn’t applicable to other stationary sources. CARB Test Method 425 has been used by SCAQMD and other air districts for testing the exhaust of boilers¹¹, testing emissions from a cement plant¹², ash handling systems¹³, steel casting¹⁴, and heat treating operations¹⁵, among others. If facilities wish to use an alternative method, they may do so with approval of the Executive Officer.

Response to Comment 1-5

CMC mischaracterizes SCAQMD’s position regarding laboratory testing in a university setting. Staff does not reject academic research or data generated in a laboratory setting. The letter fails to mention CMC’s verbally stated position during the meeting and public workshop that the laboratory testing should be conducted *instead* of Proposed Rule 1407.1. Staff welcomes the data that would be generated by such a study and is pursuing funding laboratory testing in parallel with the required facility source testing. The laboratory testing could provide relevant supplementary information.

However, staff does not feel that the information generated by the laboratory testing alone would be sufficient to quantify emissions from the variety and scale of equipment used in industrial applications. The 48 pound electric induction furnace at Cal Poly Pomona would not provide suitable emission factors for different types of furnaces (vacuum induction, electric arc, crucible), different refractory types and ages, or much larger furnaces that have up to 360 times greater capacity and greater surface area. Source testing in real-world applications with various capacities and configurations is essential in developing emission factors.

Response to Comment 1-6

Staff has not said that alloy steel and stainless steel facilities are “not regulated”. All stationary sources that generate air pollution emissions are subject to SCAQMD rules. However, alloy steel and stainless steel facilities are not subject to a source-specific regulation for toxic air contaminants. Source-specific regulations include provisions for a particular industry or type of equipment to reduce emissions. Rule 1407 is the source-specific rule for non-ferrous metal melting applications. There is no such rule currently for ferrous metal melting applications.

Response to Comment 1-7

Staff provided information of two source tests during the PAR 1407 working group meeting. The first test was an aluminum furnace with an approximate melting temperature of 1,200°F while the second test was a steel furnace with an approximate melting temperature of 2,500°F. The

¹¹https://rma.org/sites/default/files/TDF-023_-_Evaluation_Test_Report,_Emissions_Tests_of_the_Wheelabrator_Shasta_Energy_Company.pdf

¹² https://rma.org/sites/default/files/TDF-016_.pdf

¹³ http://www.deq.state.mi.us/aps/downloads/SRN/N1604/N1604_TEST_20170626.pdf

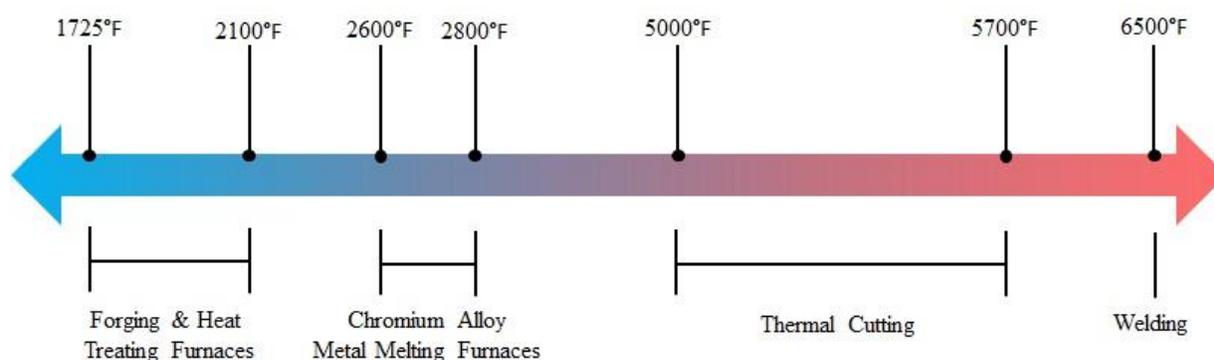
¹⁴ http://www.baaqmd.gov/~media/files/engineering/title-v-permits/e2605-smop/e2605_06_25_18_revision_smop_final_eval_clean_14029-pdf.pdf?la=en

¹⁵ <http://www.aqmd.gov/docs/default-source/compliance/Paramount/source-test-mattco.pdf>

conversion rate from the lower temperature test ranged from 3-18 percent while the conversion rate from the higher temperature test ranged from 31-76 percent. This indicates that higher temperatures likely increases the conversion rate.

The figure below (Figure 1.1) depicts the spectrum of operating temperatures for various metalworking operations. Throughout this temperature spectrum, testing results from SCAQMD or literature developed by other regulatory agencies indicated conversion of chromium to hexavalent chromium.

Figure 1.1: Operating Temperatures of Metal Working Processes



Response to Comment 1-8

SCAQMD has provided source test results on metal melting furnaces, screening test results for heat treating and forging furnaces, and references to other agency data all indicating that high temperatures can lead to the conversion of chromium to hexavalent chromium. CMC has rejected all of the data without providing any evidence that emissions do not occur.

Response to Comment 1-9

See Response to Comment 1-8

Response to Comment 1-10

See Response to Comment 1-8

Comments received verbally from the August 30, 2018 Public Workshop with no corresponding written comments are presented and responded to below.

Comment #2 – Mr. Ryan Pickett, Griswold Industries

Comment 2-1

It is unclear how hexavalent chromium is forming and an academic setting is more appropriate for the type of testing SCAQMD is pursuing.

Comment 2-2

Please better define what finishing activities means.

Comment 2-3

Are there enough companies to do all the testing required in this rule?

Comment 2-4

How will the SCAQMD handle non-detect readings?

Comment 2-5:

What methods are available to test dross and slag?

Response to Comment 2-1

See Response to Comment 1-5

Response to Comment 2-2

A definition has been included in paragraph (c)(13) for mechanical finishing which is defined as a metal removal or reshaping process and includes, abrasive blasting, burnishing, grinding, polishing, and sawing.

Response to Comment 2-3

There are at least nine companies that do the required testing in the SCAQMD Laboratory Approval Program. Only five to eight tests are required over a one-year period.

Response to Comment 2-4

Provisions for non-detection are included in the Testing Methodologies section of SCAQMD Guidelines for the Preparation of Rule 1407.1 Source Test Protocols included in this document in Appendix 1.

Response to Comment 2-5

Test methods for dross and slag are included in paragraph (f)(3).

Comment #3 – Mr. Jim Bonny, Certified Alloyed ProductsComment 3-1

Heat treating is not indicative of our process and information from that type of operation is not applicable to metal melting.

Comment 3-2

Testing scrap, slag, and dross is not necessary. The metal melt and baghouse provide all the relevant information.

Response to Comment 3-1

See Response to Comment 1-7. Heat treating furnaces process materials similar to the metals that are applicable to Proposed Rule 1407.1, but at lower temperatures. For metal forging operations, metals are heated to a soft and workable temperature, but not to a molten stage. Hexavalent chromium emissions were detected at those temperatures. Metal melting operations occur at higher temperatures than heat treating operations. With the higher temperature required for chromium alloy melting, it is expected that hexavalent chromium emissions from melting

operation will be similar or possibly higher. Testing of activities conducted at higher temperatures such as welding also detected emissions of hexavalent chromium.

Response to Comment 3-2

SCAQMD is requiring scrap, slag, and dross to be tested to do a mass balance of materials entering the furnace and exiting the furnace. This will help indicate the fate of materials as they are processed in the furnace.

Comment #4 – Mr. Albert Chung, Keramida

Comment 4-1

Maintaining the pH during the source testing for CARB Method 425 introduces more source test error.

Comment 4-2

Has CARB Method 425 been tested in highly acidic or basic conditions?

Comment 4-3

A university setting is needed to examine an appropriate source test method.

Response to Comment 4-1

The sodium bicarbonate used in the CARB Method 425 keeps the chromium in its current state and does not change its state. The pH of the sample is checked and it must remain within test specification to be a valid source test.

Response to Comment 4-2

Yes. Even in those conditions the sample must remain within test specifications for a valid source test.

Response to Comment 4-3

See Response to Comment 1-5

Comment #5 – Mr. Charles Figueroa, Almega Environmental

Comment 5-1

There are recommended changes to source test provision in subdivision (e) to clarify requirements.

Comment 5-2

The source test protocols for the proposed rule should be presented prior to rule adoption so that the testing requirements can be reviewed.

Response to Comment 5-1

The provisions of subdivision (e) have been clarified as requested.

Response to Comment 5-2

The protocols for source testing have been included in Appendix 1 of this document.

Comment #6 – Mr. James Gutierrez, Strategic Materials CorporationComment 6-1

When will the list of approved labs be made available?

Comment 6-2

Stakeholders have requested that a socioeconomic analysis be provided for the proposed rule. There may be some economic impacts.

Comment 6-3

Supports California Metal Coalitions position that testing should be conducted at Cal Poly Pomona.

Response to Comment 6-1

The list is available on the SCAQMD website at: <http://www.aqmd.gov/docs/default-source/laboratory-procedures/lap-list-by-method.pdf?sfvrsn=4>.

Response to Comment 6-2

Costs and a socioeconomic analysis are included in this report. However, it has been a standard practice for SCAQMD's socioeconomic impact assessments that, when the annual compliance cost is less than one million current U.S. dollars, the Regional Economic Models Inc. (REMI)'s Policy Insight Plus Model is not used to simulate jobs and macroeconomic impacts, as is the case here. This is because the resultant impacts would be diminutive relative to the baseline regional economy.

Response to Comment 6-3

See Response to Comment 1-5

Comment #7 – Mr. Ron Hayes, KeramidaComment 7-1

A source specific test method for metal melting is needed and Cal Poly Pomona is the proper setting for test method development.

Response to Comment 7-1

See Response to Comments 1-4 and 1-5



South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

SUBJECT: NOTICE OF EXEMPTION FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT

PROJECT TITLE: PROPOSED RULE 1407.1 – EMISSIONS OF TOXIC AIR CONTAMINANTS FROM CHROMIUM ALLOY MELTING OPERATIONS

Pursuant to the California Environmental Quality Act (CEQA) Guidelines, the South Coast Air Quality Management District (SCAQMD) is the Lead Agency and has prepared a Notice of Exemption for the project identified above.

SCAQMD staff has reviewed Proposed Rule 1407.1 – Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations, pursuant to: 1) CEQA Guidelines Section 15002(k) - General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA; and 2) CEQA Guidelines Section 15061 - Review for Exemption, procedures for determining if a project is exempt from CEQA.

As provided in CEQA Guidelines Section 15306 - Information Collection, the proposed project is exempt because it will consist of basic data collection, research and resource evaluation activities and will not result in a serious or major disturbance to an environmental resource. CEQA Guidelines Section 15306 exempts such a project for information-gathering purposes, or as part of a study leading to future action which the agency has not yet taken. Furthermore, SCAQMD staff has determined that it can be seen with certainty that there is no possibility that the proposed project may have a significant adverse effect on the environment. Therefore, the project is also considered to be exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Activities Covered by General Rule. Finally, the proposed project is also considered categorically exempt because it contains requirements designed to protect or enhance the environment pursuant to CEQA Guidelines Section 15308 – Actions by Regulatory Agencies for Protection of the Environment.

A Notice of Exemption will be prepared pursuant to CEQA Guidelines Section 15062 - Notice of Exemption. If the project is approved, the Notice of Exemption will be filed with the county clerks of Los Angeles, Orange, Riverside and San Bernardino counties.

Any questions regarding this Notice of Exemption should be sent to Diana Thai (c/o Planning, Rule Development and Area Sources) at the above address. Ms. Thai can also be reached at (909) 396-3443. Ms. Uyen-Uyen Vo is also available at (909) 396-2238 to answer any questions regarding the proposed rule.

Date: October 26, 2018

Signature: 
Barbara Radlein
Program Supervisor, CEQA Section
Planning, Rules, and Area Sources

NOTICE OF EXEMPTION

To: County Clerks
Counties of Los Angeles, Orange,
Riverside, and San Bernardino

From: South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Project Title: Proposed Rule 1407.1 – Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations

Project Location: The SCAQMD has jurisdiction over the four-county South Coast Air Basin (all of Orange County and the non-desert portions of Los Angeles, Riverside and San Bernardino counties), and the Riverside County portions of the Salton Sea Air Basin (SSAB) and Mojave Desert Air Basin (MDAB). The SCAQMD’s jurisdiction includes the federal nonattainment area known as the Coachella Valley Planning Area, which is a sub-region of Riverside County and the SSAB.

Description of Nature, Purpose, and Beneficiaries of Project: The purpose of Proposed Rule (PR) 1407.1 is to gather information and quantify toxic air contaminant emissions of arsenic, cadmium, hexavalent chromium, and nickel from chromium alloy melting operations such as foundries and other metal melting facilities in order to identify the appropriate level of air pollution control. If adopted, PR 1407.1 will: 1) require the submittal of information regarding facility operations including the number and type of furnaces, and the composition of metals melted; 2) require the facility owner/operator to keep records for a 12-month period; 3) require the facility owner/operator to submit a source test protocol, including the identification of the test methods that will be used during the source test; 4) specify the accepted source test methods for the various toxic air contaminants and particulate matter; and 5) allow the facility owner/operator to submit an alternative test method, provided it is approved by the Executive Officer.

Public Agency Approving Project:
South Coast Air Quality Management District

Agency Carrying Out Project:
South Coast Air Quality Management District

Exempt Status:

CEQA Guidelines Section 15306 – Information Collection

CEQA Guidelines Section 15061(b)(3) – Activities Covered by General Rule

CEQA Guidelines Section 15308 – Actions by Regulatory Agencies for Protection of the Environment

Reasons why project is exempt: SCAQMD staff has reviewed PR 1407.1 pursuant to: 1) CEQA Guidelines Section 15002(k) - General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA; and 2) CEQA Guidelines Section 15061 - Review for Exemption, procedures for determining if a project is exempt from CEQA. As provided in CEQA Guidelines Section 15306 - Information Collection, the proposed project is exempt because it will consist of basic data collection, research and resource evaluation activities and will not result in a serious or major disturbance to an environmental resource. CEQA Guidelines Section 15306 exempts such a project for information-gathering purposes, or as part of a study leading to future action which the agency has not yet taken. Furthermore, SCAQMD staff has determined that it can be seen with certainty that there is no possibility that the proposed project may have a significant adverse effect on the environment. Therefore, the project is also considered to be exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Activities Covered by General Rule. Furthermore, the proposed project is considered categorically exempt because it contains requirements designed to protect or enhance the environment pursuant to CEQA Guidelines Section 15308 – Actions by Regulatory Agencies for Protection of the Environment.

Date When Project Will Be Considered for Approval (subject to change):

SCAQMD Governing Board Hearing: November 2, 2018; SCAQMD Headquarters - Auditorium

CEQA Contact Person:
Ms. Diana Thai

Phone Number:
(909) 396-3443

Email:
dthai@aqmd.gov

Fax:
(909) 396-3982

Rule Contact Person:
Ms. Uyen-Uyen Vo

Phone Number:
(909) 396-2238

Email:
uvo@aqmd.gov

Fax:
(909) 396-3823

Date Received for Filing: _____

Signature: _____

(Signed Upon Board Approval)

Barbara Radlein
Program Supervisor, CEQA Section
Planning, Rule Development & Area Sources

Proposed Rule 1407.1

Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations

Governing Board Meeting

November 2, 2018



Regulatory Background

- Existing toxics rules for metal melting cover variety of alloys
 - Rule 1407: Aluminum, Carbon Steel, Brass, and Bronze
 - Rule 1420: Lead, Brass, and Bronze
- A source test has shown 70% conversion of chromium to hexavalent chromium during melting operations
- Proposed Rule 1407.1 begins addressing metal melting of chromium alloys to fill a regulatory gap

Rule 1407 and/or Rule 1420					Proposed Rule 1407.1		
Al & Al Alloys	Carbon Steel	Brass	Bronze	Lead	Stainless Steel	Alloy Steel	Super Alloys

Need for Source Testing

- Source testing is needed to quantify the amount and type of toxic air contaminants
- Typical to conduct source tests at facilities when regulating a new source category
 - Staff has conducted facility source tests for over 15 separate rulemakings
- Throughout the rulemaking process staff has offered to conduct source tests - facilities either declined or were non-responsive
- Some operators have expressed potential risk communication concerns
 - Offers to conduct tests anonymously and/or with alloys not used at the facility still declined

Proposed Rule 1407.1 Approach

Objective of Proposed Rule 1407.1 is to collect emissions data from chromium metal melting

- Requires 8 of the 14 facilities to conduct a source test (6 facilities have no controls or stack)
 - Includes provision to conduct source tests for 3 facilities¹
- Source tests cost \$20,000 to \$30,000
- Data will be used to propose future emissions standards and pollution controls for hexavalent chromium, arsenic, cadmium, and nickel



¹ Testing is done for rule development purposes, not rule compliance

Key Requirements

Source Testing

- One-time source test on one furnace

Materials Composition Testing

- One-time testing of materials

Operational Information Survey

- One-time survey on facility's operations, equipment, and practices

Recordkeeping

- Collect process records for one year



Key Issue #1 – Cal Poly Study

Comment

- Conduct emissions testing at Cal Poly Pomona before proceeding with Proposed Rule 1407.1
- Conduct a study to determine if, how, and ways to stop the conversion of chromium to hexavalent chromium



Response

- Staff initiated contracting with Cal Poly Pomona to conduct emissions tests
- Source testing at facilities is still needed to quantify emissions
 - Actual operations can be significantly larger, diverse, different configurations
 - More representative of actual process— charging, melting, pouring, and casting



Key Issue #2 – CARB Method 425

Comment

- CARB Method 425 (source test for hexavalent chromium) has not been demonstrated to be applicable or appropriate for metal melting operations
- Test method development should occur at Cal Poly Pomona

Response

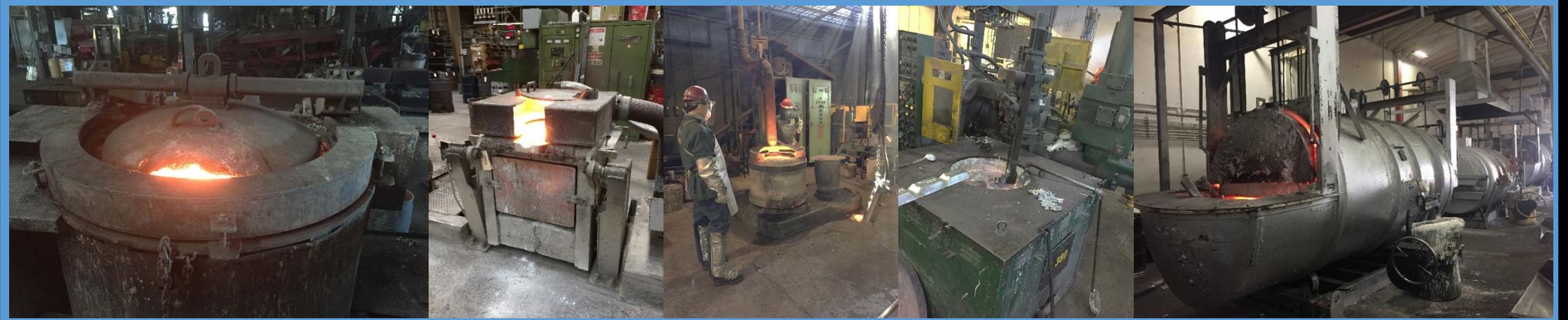
- CARB Method 425 is CARB and EPA approved for determining hexavalent chromium and total chromium emissions from stationary sources*
 - There is no evidence that CARB Method 425 is not the appropriate source test method for metal melting operations
- Proposed Rule 1407.1 includes a provision for alternative sampling and analytical test methods with Executive Officer approval

* https://www.arb.ca.gov/testmeth/vol3/M_425.pdf



Recommended Actions

- Adopt the Resolution to:
 - Determine that Proposed Rule 1407.1 is exempt from CEQA
 - Adopt Rule 1407.1



BOARD MEETING DATE: November 2, 2018

AGENDA NO. 29

PROPOSAL: Certify Revised Final Environmental Assessment and Amend Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations

SYNOPSIS: Proposed Amended Rule (PAR) 1469 proposes new requirements to control hexavalent chromium-containing tanks that are currently not regulated. In addition, PAR 1469 establishes requirements for building enclosures, housekeeping and best management practices, periodic source testing, and parameter monitoring of pollution control equipment. PAR 1469 includes provisions for a revised chemical fume suppressant certification process that further considers toxicity and exposure, provisions to encourage the elimination of hexavalent chromium in Rule 1469 processes, and revisions to align Rule 1469 with the U.S. EPA National Emission Standards for Hazardous Air Pollutants for Chromium Electroplating. This action is to adopt the Resolution: 1) Certifying the Revised Final Environmental Assessment for Proposed Amended Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations; and 2) Amending Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations.

COMMITTEE: Stationary Source, November 17, 2017, February 16, March 16, April 20, July 20, and October 19, 2018, Reviewed

RECOMMENDED ACTIONS:

Adopt the attached Resolution:

1. Certifying the Revised Final Environmental Assessment for Proposed Amended Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations; and

2. Amending Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations.

Wayne Natri
Executive Officer

SN:JW:DG:NF

Background

Rule 1169 – Hexavalent Chromium – Chrome Plating and Chromic Acid Anodizing was adopted on June 3, 1988 and applied to chromium electroplating (hard and decorative) and chromic acid anodizing processes. On October 9, 1998, Rule 1169 was repealed and provisions were incorporated into Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations. Rule 1469 establishes emission standards and housekeeping provisions for hexavalent chromium electroplating and chromic acid anodizing operations and implements the U.S. EPA's National Emission Standards for Hazardous Air Pollutants (NESHAP) for Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks (Chrome Plating) and CARB's Airborne Toxic Control Measure (ATCM) for Chromium Plating and Chromic Acid Anodizing Facilities.

Staff initiated rulemaking activities for Proposed Amended Rule (PAR) 1469 following the discovery of uncontrolled heated sodium dichromate seal tanks that are part of the chromic acid anodizing process that contributed to high hexavalent chromium levels at ambient monitors near three chromic acid anodizing facilities in Newport Beach, Paramount, and Long Beach. In addition, all three facilities had cross-drafts that allowed emissions to flow out of the buildings housing these tanks, resulting in levels of hexavalent chromium as high as 26 ng/m³ at monitors located downwind of a facility. Based on the Multiple Air Toxics Exposure Study IV, the average background level of hexavalent chromium (a potent known human carcinogen) is 0.06 ng/m³ in the South Coast Air Basin.

PAR 1469 affects 115 facilities and has been developed to address heated sodium dichromate seal tanks and other tanks with similar operating properties that were not previously known to be sources of hexavalent chromium emissions. Hexavalent chromium is a toxic air contaminant and inhalation over a long period of time increases the risk of lung cancer and nasal cancer, and can worsen health conditions such as irritation of the nose, throat, and lungs. In addition, PAR 1469 will establish additional requirements such as building enclosures, enhanced housekeeping provisions, and best management practices to minimize the release of fugitive hexavalent chromium emissions. Over the past several years, staff has conducted ambient monitoring and emissions screening tests to identify high emitting tanks that are currently unregulated and uncontrolled. In addition, staff has identified issues with building openings that

created cross-drafts that resulted high ambient levels of hexavalent chromium outside of facilities. Adoption of PAR 1469 is the last step in the process, and is needed to further reduce hexavalent chromium emissions and the impacts to surrounding communities. PAR 1469 also needed to incorporate the changes made to the U.S. EPA Chrome Plating NESHAP amended in September 2012.

Proposal

PAR 1469 establishes requirements for Tier I, II, and III Hexavalent Chromium Tanks. Tier III Hexavalent Chromium Tanks have the highest potential for hexavalent chromium emissions based on their temperature, hexavalent chromium concentration, and other operating parameters. Owners and operators are required to meet a specified emission standard which will require installation of add-on pollution controls for about 100 Tier III Hexavalent Chromium Tanks. Facilities will be required to operate Tier II and Tier III Hexavalent Chromium Tanks within a building enclosure that meets specific requirements, monitor specific parameters of air pollution controls, and to conduct periodic source tests of add-on air pollution control technologies every 5 years for facilities permitted for more than 1,000,000 ampere-hours, and every 7 years for facilities permitted for less than or equal to 1,000,000 ampere-hours. PAR 1469 also requires enhanced housekeeping measures and best management practices to minimize fugitive dust emissions of hexavalent chromium.

During the rulemaking process, concerns were raised that the recently certified non-perfluorooctane sulfonate (PFOS) chemical fume suppressants contain polyfluoroalkyl substances (PFAS) which have similar bio-accumulative toxicity issues to PFOS. Currently under existing Rule 1469, only the smallest facilities are allowed to use chemical fume suppressants as their sole control method as they are a low-cost option and reduce hexavalent chromium emissions by approximately 99 percent. Staff will be working with CARB to re-evaluate chemical fume suppressants taking into account the amount of the chemical fume suppressants that are emitted during plating and anodizing operations as well as the potential health effects. If it is determined that chemical fume suppressants cannot be certified, affected facilities will be required to install an alternative air pollution control technique such as add-on pollution controls by July 1, 2021. PAR 1469 includes a provision that allows the SCAQMD to identify and approve an alternative technology that would be equally effective at reducing hexavalent chromium emissions as chemical fume suppressants. This provision was added to PAR 1469 to allow for the development of a lower cost option, with no additional source testing, for smallest plating facilities in the event chemical fume suppressants are not certified.

PAR 1469 also includes a conditional provision for installation of a permanent total enclosure, provisions to encourage phasing out hexavalent chromium, and additional requirements for facilities near schools and sensitive receptors. Other provisions were incorporated to reflect changes in the U.S. EPA Chrome Plating NESHAP as well as

provisions to improve the clarity and implementation of the rule. Obsolete provisions that are no longer applicable were deleted.

Public Process

PAR 1469 was developed through an extensive public process. A working group was formed to provide the public and stakeholders an opportunity to discuss important details about the proposed amendments to the rule and provide staff with input during the rule development process. The working group was composed of a variety of stakeholders including representatives from industry, consultants, environmental groups, community groups, and public agency representatives. During the rulemaking process, 13 working group meetings were held: March 23, 2017, May 18, 2017, June 29, 2017, August 2, 2017, August 31, 2017, September 20, 2017, in Compton on the evening of October 26, 2017, in Compton on the evening of November 29, 2017, January 4, 2018, February 6, 2018, February 27, 2018, April 4, 2018, and July 17, 2018. Working group meetings for this rulemaking were well attended with approximately 100 people in attendance per meeting and about 40 people participating via teleconference. In addition, three Public Workshops were held: November 1, 2017, December 7, 2017, and February 8, 2018. Two additional evening public informational meetings were also held on August 28, 2018 and August 29, 2018.

Key Issues

Through the rulemaking process staff has worked with stakeholders to resolve a number of issues while ensuring that PAR 1469 requires the installation of pollution controls for unregulated high-emitting hexavalent chromium tanks, the need for basic requirements for building enclosures, and the periodic monitoring of pollution controls. Throughout the rulemaking process, issues regarding non-hexavalent chromium alternatives were discussed. Two remaining key issues are (1) the use of non-PFOS chemical fume suppressants and (2) the economic impact of the rule.

Non-PFOS Chemical Fume Suppressants

Some environmental and community representatives have commented that non-PFOS chemical fume suppressants should be banned due to the potential health impacts. In addition, some industry stakeholders have commented that if non-PFOS chemical fume suppressants cannot be certified, installation of pollution controls may be too costly for smaller facilities and result in facility closures.

In response to environmental and community concerns, PAR 1469 incorporates a schedule to re-evaluate the certification of chemical fume suppressants and if they are not certified, facilities would be required to install pollution controls by July 1, 2021. Through the rule development process, this schedule has been compressed. July 1, 2021 is the earliest date which would allow sufficient time for staff to conduct emissions testing and certification, and allow facilities to design, permit, and install pollution controls, if necessary.

The Metal Finishing Association of Southern California has commented that if chemical fume suppressants are not certified, the cost to install air pollution controls would significantly impact the smallest plating facilities and potentially result in facility closures. In response to these concerns, a provision has been added that if chemical fume suppressants are not certified, the Executive Officer in consultation with CARB may approve an alternative to a chemical fume suppressant that is as equally effective as a previously certified chemical fume suppressant. The objective of this provision is to provide a lower cost solution where the SCAQMD would conduct the emissions testing. Also, similar to the use of certified chemical fume suppressants, no further emissions testing would be required if the operator complies with the conditions approved for the alternative. Additionally, staff has committed to seeking funding sources to help facilities with the installation of add-on air pollution control devices or transition to non-toxic alternatives, where feasible. Staff will also continue to participate in CARB's rulemaking to amend the ATCM for chromium plating and anodizing, and support a statewide effort to phase-out the use of hexavalent chromium in chromium plating and chromic acid anodizing.

Economic Impacts of PAR 1469

Throughout the rule development process, industry stakeholders commented that the costs to comply with the proposed rule amendments are significant. Staff worked with industry stakeholders and made modifications throughout the rule development process to minimize facility costs while maintaining the key provisions to control hexavalent chromium emissions from high emitting tanks. Provisions such as reducing the frequency of periodic source tests, increasing the percentage of allowable openings for the building enclosure, and adding an intermediate Tier II tank that can use lower cost control techniques to reduce hexavalent chromium emissions to lower the compliance costs. Since the September 2018 Public Hearing, staff added a provision that does not require add-on pollution control devices for small, low-use tanks that meet specific conditions to ensure these tanks will meet the same emission limits as Tier III tanks with add-on pollution control devices. As discussed in the Socioeconomic Impact Assessment, the majority of costs are associated with the installation and operation of add-on air pollution control devices for uncontrolled sources of hexavalent chromium at chromic acid anodizing facilities. One of the areas of greatest concern is the potential cost of installation of add-on air pollution control devices to small decorative plating and anodizing facilities that are currently using chemical fume suppressants. As discussed above, if the chemical fume suppressants are not certified, staff is committed to finding low-cost alternatives or funding for these smaller facilities.

AQMP and Legal Mandates

The SCAQMD is required to adopt an AQMP demonstrating compliance with all federal regulations and standards. The SCAQMD is required to adopt rules and regulations that carry out the objectives of the AQMP. PAR 1469 is not a control measure of the 2016 AQMP but is needed to reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing facilities. PAR 1469 will

continue to implement requirements of the CARB ATCM pursuant to Health and Safety Code Section 39666(d) and U.S. EPA's NESHAP promulgated pursuant to Clean Air Act Section 112 (42 U.S.C. § 7412).

California Environmental Quality Act

PAR 1469 is considered to be a "project" as defined by the California Environmental Quality Act (CEQA). CEQA requires the evaluation of potentially adverse environmental impacts of proposed projects and the application of feasible methods to reduce or avoid significant adverse environmental impacts of these projects. PAR 1469 is expected to create an environmental benefit by reducing emissions of toxic air contaminants. The activities that site operators may undertake to comply with PAR 1469 may also create secondary adverse environmental impacts, but not at a significant level. Thus, pursuant to CEQA Guidelines Section 15252 and SCAQMD Rule 110, the SCAQMD has prepared an Environmental Assessment (EA) with less than significant impacts for PAR 1469. Since the environmental analysis in the Draft EA concluded that PAR 1469 would not generate any significant adverse environmental impacts, no alternatives or mitigation measures are required.

The Draft EA was released for a 32-day public review and comment period from February 16, 2018 to March 20, 2018. Two comment letters were received during the public comment period on the analysis in the Draft EA, and the comment letters and responses were included in Appendix E of the Final EA, which was released as part of the Governing Board package for the first Public Hearing on September 7, 2018. Since the release of the Draft EA, modifications were made to the proposed project in response to verbal and written comments which are reflected in the Final EA. Further, subsequent to the release of the Final EA, some modifications were made to PAR 1469 which are reflected in the Revised Final EA.

Staff has reviewed the modifications to the proposed project and concluded that none of the modifications constitute significant new information, or a substantial increase in the severity of an environmental impact, or provide new information of substantial importance regarding the Draft EA, Final EA, or Revised Final EA. In addition, revisions to PAR 1469 in response to verbal and written comments would not create new, avoidable significant effects. As a result, these revisions do not require recirculation of the Draft EA pursuant to CEQA Guidelines Section 15073.5 or 15088.5. Therefore, the Draft EA and Final EA has been revised to reflect the aforementioned modifications and to include the comment letters and responses to comments such that it is now the Revised Final EA (see Attachment I). Prior to making a decision on PAR 1469, the Board must review and certify the Revised Final EA as providing adequate information on the potential adverse environmental impacts of the proposed project.

Socioeconomic Assessment

PAR 1469 would affect 115 facilities that either conduct decorative or hard chromium electroplating or chromic acid anodizing within SCAQMD's jurisdiction. Two cost scenarios were analyzed; a high cost scenario, which represents the highest expected cost of compliance, and a low cost scenario, which represents the costs associated with a

more likely scenario. The affected facilities would incur an average annual aggregate cost totaling \$2.65 to \$4.26 million to comply with proposed requirements within the low and high cost scenarios, respectively. The majority of the compliance costs are capital, installation, and operating and maintenance costs of air pollution control systems. The average annual cost per facility is estimated at \$22,000 to \$36,000 (for the low and high cost scenarios, respectively).

Examination of facility-specific annual cost/revenue impacts indicates an average annual compliance cost impact of 1.8 percent to 3.3 percent of annual revenue for all facilities. Staff worked with a contractor hired by the Metal Finishing Association of Southern California to develop the cost assumptions. The facility category which bears the greatest impact is small decorative plating facilities, which has a range of average cost impacts of 3.4 percent to 7.4 percent of revenue. Many of these facilities could be significantly impacted by PAR 1469 if chemical fume suppressants are not certified and they are required to install air pollution control systems. SCAQMD may approve an alternative technology that would be equally effective as the emission limit required for chemical fume suppressants, and the provision would mitigate costs for the small facilities. Such an alternative may include a combination of mechanical fume suppressants and other measures.

PAR 1469 is expected to result in an average of 37 to 63 to jobs forgone annually, between 2019 and 2035 using the low and high cost scenarios, respectively. The projected jobs forgone represent about 0.001 percent of the total employment in the four-county region.

Implementation and Resource Impact

Existing SCAQMD resources will be used to implement PAR 1469.

Attachments

- A. Summary of Proposal
- B. Key Issues and Responses
- C. Rule Development Process
- D. Key Contacts List
- E. Resolution
- F. Proposed Amended Rule 1469 Rule Language
- G. Proposed Amended Rule 1469 Staff Report
- H. Final Socioeconomic Impact Assessment
- I. Revised Final Environmental Assessment
- J. Board Meeting Presentation

ATTACHMENT A
SUMMARY OF PROPOSAL

Proposed Amended Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations

Emission Standards for Tier III Hexavalent Chromium Tanks

- Maintain existing hexavalent chromium emission standards for plating and anodizing tanks
- New emission limits for Tier III Hexavalent Chromium Tanks (highest emitting tanks):
 - Same emission limits for electrolytic process tanks;
 - 0.20 mg/hr if maximum exhaust rate is 5,000 cfm or less; or
 - 0.004 mg/hr-ft² if maximum exhaust rate is greater than 5,000 cfm
- Special provisions for small, low-use Tier III Hexavalent Chromium Tanks that meet specific criteria

Periodic Source Testing Requirements

- Requires source testing every 60 months (5 years) if total facility permitted throughput is greater than 1,000,000 ampere-hours annually
- Requires source testing every 84 months (7 years) if total facility permitted throughput is less than or equal to 1,000,000 ampere-hours annually
- Allows use of an emissions screening test consisting of a one-run source test

Building Enclosure Requirements

- Requires that Tier II and III Hexavalent Chromium Tanks be operated in a building enclosure
- Limits combined area for all enclosure openings to 3.5% of the building envelope
- Requirements to minimize cross-drafts, openings near sensitive receptors, and roof openings

Conditional Requirements for Permanent Total Enclosure

- Trigger to install a permanent total enclosure based on more than one non-passing source test or failure to shut down a tank after a failed smoke test or failed slot velocity test
- Trigger is more stringent for facilities within 1,000 feet of a sensitive receptor

Housekeeping Requirements

- Added housekeeping requirements for buffing, grinding, or polishing areas and provisions when cutting into roof surfaces
- Provision to remove fabric or fibrous flooring material that cannot be cleaned

Best Management Practices

- Incorporates new best management practices for spray rinsing parts or equipment, tank labeling, provisions for buffing, grinding and polishing, and additional clarifications

Certification of Wetting Agent Chemical Fume Suppressants

- Incorporates provisions from U.S. EPA's Chromium Plating NESHAP which bans PFOS from chemical fume suppressants
- Incorporates a schedule to re-evaluate certification of chemical fume suppressants
- If chemical fume suppressants are not certified, operators must install pollution controls by July 1, 2021 and are allowed to use a chemical fume suppressant on or before July 1, 2022 if phasing out use of hexavalent chromium
 - Incorporates provision for staff in consultation with CARB to approve an alternative to a chemical fume suppressant that is equally effective as chemical fume suppressants, if chemical fume suppressants are not certified

Parameter Monitoring

- Monitor the operation of an add-on air pollution control device including the collection slot velocities and push air manifold pressure conditions
- Additional parameter monitoring required for air pollution control device equipped with HEPA

Other Provisions

- Provisions to encourage phase-out of hexavalent chromium
- Additional provisions for inspection and maintenance
- Clarifies and adds recordkeeping requirements for add-on air pollution control devices
- Remove exemption for process tanks associated with plating or anodizing processes
- Includes a process for a one year extension to install add-on air pollution controls, implement an approved alternative compliance method, or implement an approved Hexavalent Chromium Phase-Out Plan

ATTACHMENT B KEY ISSUES AND RESPONSES

Proposed Amended Rule (PAR) 1469 – Hexavalent Chromium Emissions From Chromium Electroplating And Chromic Acid Anodizing Operations

Use of non-PFOS chemical fume suppressants: Some environmental and community representatives have commented that the non-PFOS chemical fume suppressants should be banned due to the potential health impacts. Additionally, some industry stakeholders have commented that if non-PFOS chemical fume suppressants cannot be certified, installation of pollution controls may be too costly for the smaller facilities and will result in facility closures.

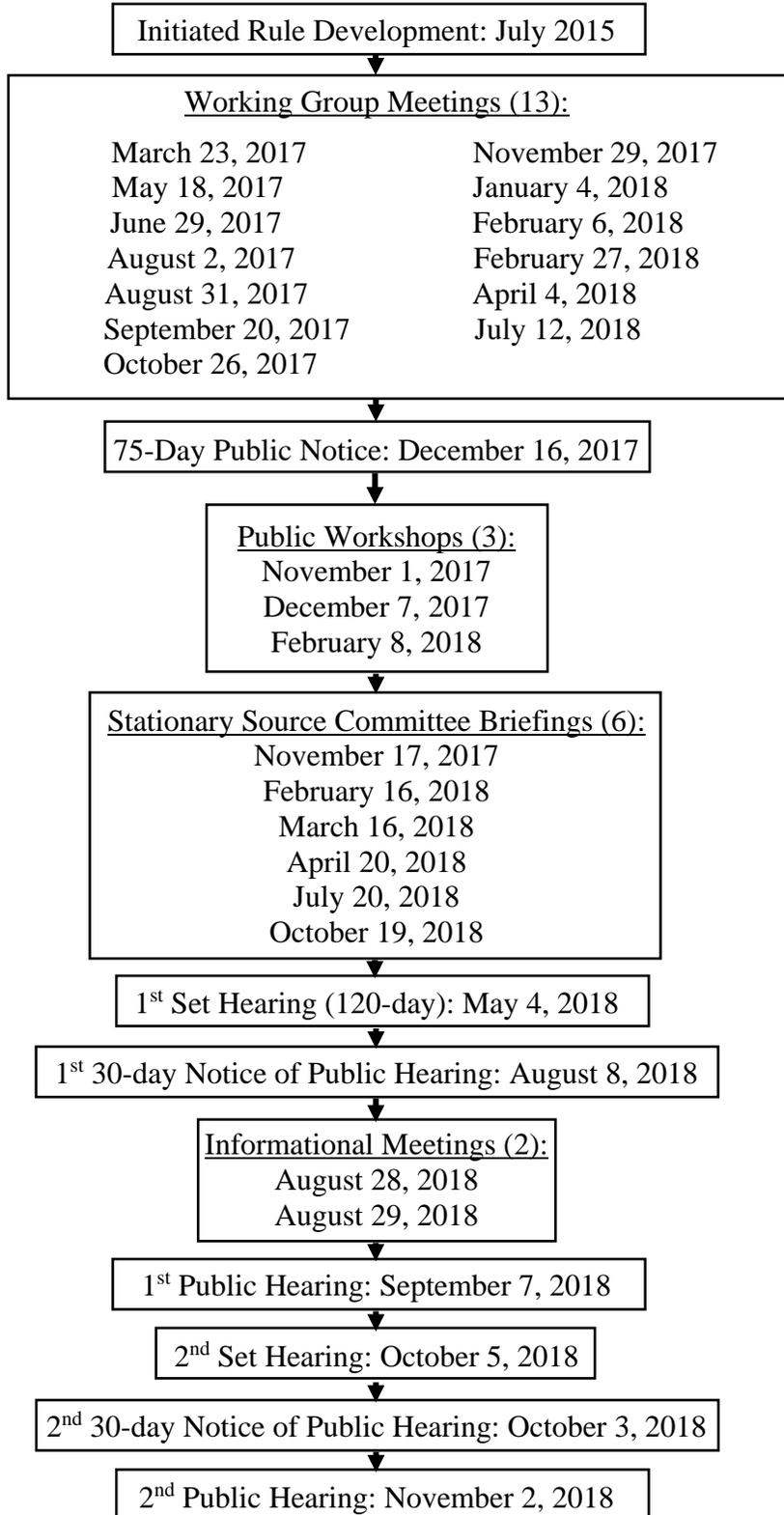
- A schedule has been incorporated into the rule for staff to re-evaluate the certification of chemical fume suppressants and if not certified, facilities would be required to install air pollution controls by July 1, 2021. This date provides the time necessary to conduct emissions testing, certify wetting agent chemical fume suppressants (if any), and allow facilities to design, permit, and install air pollution controls, if needed.
- If a chemical fume suppressant is not certified, the Executive Officer in consultation with CARB may approve an alternative to a chemical fume suppressant that is as equally effective as a previously certified chemical fume suppressant.
- The alternative to a chemical fume suppressant would provide a lower cost solution since the SCAQMD would identify the control options and conduct the emissions testing. Also, no further emissions testing would be required if the operator complies with the conditions for the alternative.

Economic impact of implementation of Proposed Amended Rule 1469: Some industry stakeholders have commented that the cost to comply with the rule is substantial and would result in facility closures in the South Coast Air Basin.

- As identified in the Socioeconomic Impact Assessment, the majority of costs are associated with the installation and operation of add-on air pollution control devices for previously uncontrolled tanks that were identified as sources of hexavalent chromium emissions. Staff added a provision that does not require add-on pollution control devices for small, low-use tanks that meet specific conditions that ensure the same emission levels as Tier III Tanks with add-on pollution control devices. The Metal Finishing Association of Southern California has commented that pollution controls are needed for Tier III Tanks.
- Throughout the rulemaking process, staff worked with stakeholders to reduce the cost of Proposed Amended Rule 1469 by extending the schedule for source testing, including Tier II Tanks which do not require pollution controls but can use lower cost techniques to reduce hexavalent chromium emissions, and modifications to building enclosure requirements, to name a few.
- Owners or operators of facilities are not limited to installing add-on air pollution control devices as they can either reduce or eliminate hexavalent chromium use from the subject tank. By reducing the concentration of hexavalent chromium, the tank may be classified as Tier II Hexavalent Chromium Tank instead of Tier III Hexavalent Chromium Tank. Tier II Hexavalent Chromium Tanks have fewer requirements and do not need an add-on air pollution control device.

**ATTACHMENT C
RULE DEVELOPMENT PROCESS**

**Proposed Amendment to Rule 1469 – Hexavalent Chromium Emissions from Chromium
Electroplating and Chromic Acid Anodizing Operations**



Thirty-nine (39) months spent in rule development

Three (3) Public Workshops

Thirteen (13) Working Group Meetings, including two (2) evening Working Group Meetings in Compton.

ATTACHMENT D
KEY CONTACTS LIST

AAA Plating & Inspection
Accurate Plating
Ace Clearwater
Aircraft X-Ray Labs Inc.
Alco Plating
All Metals Processing
Almega Environmental
Alta Environmental
Anaplex Corporation
Atotech USA Inc.
Aviation Repair Solution
Barry Avenue Plating
Best Air Controls
The Boeing Company
Bowman Plating Co.
California Air Resources Board
California Communities Against Toxics
California Electroplating Inc.
California OSHA (Cal/OSHA)
California Safe Schools
California Small Business Alliance
City of Paramount
Chromal Plating Company
CNC Environmental
Coast Plating
Del Amo Action Committee

Department of Public Works Bureau of Sanitation
Desmond & Desmond
Dixon Hard Chrome
Ducommun
Dynamic Plating
Ecotek
Electrolizing
ECM
E.M.E.
Environomics Embee Processing
Gardena Specialized Plating
General/Brite Plating Company
Hawker Pacific Aerospace
Hixson Metal Finishing
Hightower Plating
Hunter Chemical LLC
K&L Anodizing
MacDermid Enthone
Metal Finishing Association of Southern California
Metal Finishing Marketers
Metal Surfaces Inc.
Michelle Lewis
Montrose
Moore Compliance & Training Inc.
Morrell's Electroplating
Omni Metal
OC Plating
Office of Environmental Health Hazard Assessment
Pentrate Metal Processing

Policy Group
Precision Anodizing and Plating
Products Engineering Corporation
Quaker City Plating
Radcliff & Saiki LLP
Radtech
Size Control Plating
Southern California Air Quality Alliance
Southland Environmental
Sunvair
Teachers Association of Paramount
Tool & Jig
Tox Strategies
Triumph Processing
Trinity Consultant
Universal Metal Plating
Valley Plating
Verne's Chrome

ATTACHMENT E

RESOLUTION NO. 18-_____

A Resolution of the Governing Board of the South Coast Air Quality Management District (SCAQMD) certifying the Revised Final Environmental Assessment (EA) for Proposed Amended Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations.

A Resolution of the SCAQMD Governing Board Adopting Proposed Amended Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations.

WHEREAS, the SCAQMD Governing Board finds and determines with certainty that Proposed Amended Rule 1469 is considered a “project” as defined by the California Environmental Quality Act (CEQA); and

WHEREAS, the SCAQMD has had its regulatory program certified pursuant to Public Resources Code Section 21080.5 and CEQA Guidelines Section 15251(l), and has conducted a CEQA review and analysis of Proposed Amended Rule 1469 pursuant to such program (SCAQMD Rule 110); and

WHEREAS, the SCAQMD staff has prepared a Draft EA pursuant to its certified regulatory program and CEQA Guidelines Sections 15251, 15252, and 15070, setting forth the potential environmental consequences of Proposed Amended Rule 1469 and determined that the proposed project would not have the potential to generate significant adverse environmental impacts; and

WHEREAS, the Draft EA was circulated for a 32-day public review and comment period, from February 16, 2018 to March 20, 2018, and two comment letters were received; and

WHEREAS, the Draft EA has been revised to include comments received on the Draft EA and the responses, which were included in the Final EA and released as part of the Governing Board package for the first Public Hearing on September 7, 2018. Subsequent to the release of the Final EA, some modifications were made to Proposed Amended Rule 1469 which are reflected in the Revised Final EA; and

WHEREAS, it is necessary that the SCAQMD Governing Board review the Revised Final EA prior to its certification, to determine that it provides adequate information on the potential adverse environmental impacts that may occur as a result of adopting Proposed Amended Rule 1469, including responses to comments received relative to the Draft EA; and

WHEREAS, pursuant to CEQA Guidelines Section 15252 (a)(2)(B), since no significant adverse impacts were identified, no alternatives or mitigation measures are required and thus, a Mitigation Monitoring and Reporting Plan pursuant to Public Resources Code Section 21081.6 and CEQA Guidelines Section 15097, has not been prepared; and

WHEREAS, findings pursuant to Public Resources Code Section 21081.6 and CEQA Guidelines Section 15091, and a Statement of Overriding Considerations pursuant to CEQA Guidelines Section 15093, were not prepared because the analysis shows that Proposed Amended Rule 1469 would not have a significant adverse effect on the environment, and thus, are not required; and

WHEREAS, the SCAQMD Governing Board voting to adopt Proposed Amended Rule 1469 has reviewed and considered the information contained in the Revised Final EA and other supporting documentation, prior to its certification, and has determined that the Revised Final EA, including responses to comments, has been completed in compliance with CEQA; and

WHEREAS, Proposed Amended Rule 1469 and supporting documentation, including but not limited to, the Revised Final EA, the Final Staff Report, and the September 7, 2018 Board Letter, were presented to the SCAQMD Governing Board and the SCAQMD Governing Board has reviewed and considered this information, and has taken and considered staff testimony and public comment prior to approving the project; and

WHEREAS, the Revised Final EA reflects the independent judgment of the SCAQMD; and

WHEREAS, the SCAQMD Governing Board finds and determines that all changes made in the Revised Final EA after the public notice of availability of the Draft EA and the Final EA, were not substantial revisions and do not constitute significant new information within the meaning of CEQA Guidelines Section 15073.5 or 15088.5, because no new significant effects were identified, and no new project conditions or mitigation measures were added, and all changes merely clarify, amplify, or make insignificant modifications to the Draft EA and the Final EA, and recirculation is therefore not required; and

WHEREAS, the SCAQMD Governing Board finds and determines, taking into consideration the factors in Section (d)(4)(D) of the Governing Board Procedures (codified as Section 30.5(4)(D)(i) of the Administrative Code), that the modifications which have been made to Proposed Amended Rule 1469 since the notice of public hearing was published adds clarity and a provision in Appendix 10 that does not require hexavalent chromium tanks with a surface area smaller than 4 square feet that are used less than 2.5 hours per week within a specified temperature range to install add-on air pollution controls because their highest potential emissions would be the same as the potential emissions of a larger, higher use tank that is required to install add-on air pollution controls and this provision meets the same air quality objective and is not so substantial as to significantly affect the meaning of the proposed amended rule within the meaning of Health and Safety Code 40726 because: (a) the changes do not impact emission reductions because the highest potential hexavalent chromium emissions would be similar and the rule does not take credit for or quantify emission reductions, (b) the changes do not affect the number or type of sources regulated by the rule and the change would mean compliance with the rule would be less costly for facilities, (c) the changes are consistent with the information contained in the notice of public hearing, and (d) the consideration of the range of CEQA alternatives is not applicable because the effects of Proposed Amended Rule 1469 do not cause significant impacts and therefore, alternatives are not required; and

WHEREAS, Proposed Amended Rule 1469 is not a control measure in the 2012 Air Quality Management Plan (AQMP) and was not ranked by cost-effectiveness relative to other AQMP control measures in the 2016 AQMP, and furthermore, pursuant to Health and Safety Code Section 40910, cost-effectiveness in terms of dollars per ton of pollutant reduced is only applicable to rules regulating ozone, carbon monoxide, sulfur dioxide, and nitrogen dioxide and does not apply to toxic air contaminants; and

WHEREAS, Proposed Rule 1469 reduces hexavalent chromium emissions which is a toxic air contaminant and will not be submitted for inclusion into the State Implementation Plan; and

WHEREAS, the SCAQMD staff conducted public workshops regarding Proposed Amended Rule 1469 on November 1, 2017, December 7, 2017, and February 8, 2018; and

WHEREAS, Health and Safety Code Section 40727 requires that prior to adopting, amending, or repealing a rule or regulation, the SCAQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing and in the Final Staff Report; and

WHEREAS, the SCAQMD Governing Board obtains its authority to adopt, amend or repeal rules and regulations from Health and Safety Code Sections 39002, 39650 et. seq., 40000, 40440, 40441, 40702, 41508, and 41700; and

WHEREAS, the SCAQMD Governing Board has determined that Proposed Amended Rule 1469 is written or displayed so that its meaning can be easily understood by the persons directly affected by it; and

WHEREAS, the SCAQMD Governing Board has determined that Proposed Amended Rule 1469, as proposed to be adopted, is in harmony with, and not in conflict with or contradictory to, existing statutes, court decisions, or state or federal regulations; and

WHEREAS, the SCAQMD Governing Board has determined that Proposed Amended Rule 1469, as proposed to be adopted, implements the state Air Toxics Control Measure (ATCM) 17 CCR 93102-93102.16 and federal National Emission Standards for Hazardous Air Pollutants 40 CFR Part 63, Subpart N for chromium plating and anodizing facilities and imposes the same or more stringent requirements as the existing state or federal regulations, and the proposed project is necessary and proper to execute the powers and duties granted to, and imposed upon, the SCAQMD; and

WHEREAS, the SCAQMD Governing Board has determined that a need exists to amend Rule 1469 to alleviate a problem by establishing emission limits to address tanks containing hexavalent chromium that operate under conditions that previously were not known to be significant sources of hexavalent chromium emissions and to establish additional provisions that minimize the release of hexavalent chromium emissions from electroplating and chromic acid anodizing operations and associated processes; and

WHEREAS, the SCAQMD Governing Board, in adopting this regulation, references the following statutes which the SCAQMD hereby implements, interprets or makes specific: the provisions of the Health and Safety Code Section 41700 (nuisance) and Section 39666 (Airborne Toxic Control Measures) and Federal Clean Air Act Section 112 (Hazardous Air Pollutants) and Section 116 (Retention of State Authority); and

WHEREAS, Health and Safety Code Section 40727.2 requires the SCAQMD to prepare a written analysis of existing federal air pollution control requirements applicable to the same source type being regulated whenever it adopts, or amends a rule, and that the SCAQMD's comparative analysis of Proposed Amended Rule 1469 is included in the Final Staff Report; and

WHEREAS, the SCAQMD Governing Board has determined that the Socioeconomic Impact Assessment of Proposed Amended Rule 1469 is consistent with the March 17, 1989 Governing Board Socioeconomic Resolution for rule adoption; and

WHEREAS, the SCAQMD Governing Board has determined that Proposed Amended Rule 1469 will result in increased costs to chromium electroplating and chromic acid anodizing facilities yet are considered to be reasonable, with a total annualized cost as specified in the Socioeconomic Impact Assessment; and

WHEREAS, the SCAQMD Governing Board has considered the Socioeconomic Impact Assessment and has made a good faith effort to minimize such impacts; and

WHEREAS, the SCAQMD Governing Board has determined that the Socioeconomic Impact Assessment is consistent with the provisions of the Health and Safety Code Sections 40440.8, 40728.5, 40920.6; and

WHEREAS, the SCAQMD Governing Board specifies the Manager overseeing the rule development for Proposed Amended Rule 1469 as the custodian of the documents or other materials which constitute the record of proceedings upon which the adoption of this proposed project is based, which are located at the South Coast Air Quality Management District, 21865 Copley Drive, Diamond Bar, California; and

WHEREAS, a public hearing has been properly noticed in accordance with all provisions of Health and Safety Code Section 40725; and

WHEREAS, the SCAQMD Governing Board has held a public hearing in accordance with all provisions of law.

NOW, THEREFORE BE IT RESOLVED, the SCAQMD Governing Board directs staff to continue to investigate non-toxic alternatives to hexavalent chromium that can be used in electroplating and chromic acid anodizing operations and associated processes; and

BE IT FURTHER RESOLVED, the SCAQMD Governing Board directs staff to initiate a pilot study to identify non-toxic alternatives to hexavalent chromium plating and anodizing operations and to provide a report to the Stationary Source Committee within two years on possible non-toxic alternatives and rule changes, if any; and

BE IT FURTHER RESOLVED, the SCAQMD Governing Board directs staff to continue participating in CARB's rulemaking to amend the ATCM for chromium plating and anodizing and to support a statewide effort to phase-out the use of hexavalent chromium in chromium plating and chromic acid anodizing operations; and

BE IT FURTHER RESOLVED, if non-PFOS chemical fume suppressants are not re-certified, the SCAQMD Governing Board directs staff to work with CARB to identify a low-cost compliance option that is as equally effective as chemical fume suppressants and to seek funding to assist facilities in installation of pollution controls or use of non-toxic alternatives, where feasible; and

BE IT FURTHER RESOLVED, that the SCAQMD Governing Board directs staff to return to the Stationary Source Committee within 12 months to provide an update on implementation of Amended Rule 1469;

BE IT FURTHER RESOLVED, that the SCAQMD Governing Board does hereby certify the Revised Final EA for Proposed Amended Rule 1469 was completed in compliance with CEQA and SCAQMD Rule 110 provisions; and finds that the Revised Final EA, including responses to comments, was presented to the SCAQMD Governing Board, whose members reviewed, considered and approved the information therein prior to acting on Proposed Amended Rule 1469; and

BE IT FURTHER RESOLVED, that because no significant adverse environmental impacts were identified as a result of implementing Proposed Amended Rule 1469, Findings pursuant to Public Resources Code Section 21081.6 and CEQA Guidelines Section 15091, a Statement of Overriding Considerations pursuant to CEQA Guidelines Section 15093, and a Mitigation Monitoring and Reporting Plan pursuant to Public Resource Code Section 21081.6 and CEQA Guidelines Section 15097 are not required; and

BE IT FURTHER RESOLVED, that the SCAQMD Governing Board does hereby adopt, pursuant to the authority granted by law, Proposed Amended Rule 1469 as set forth in Attachment F and incorporated herein by this reference.

DATE: _____

CLERK OF THE BOARDS

ATTACHMENT F

(Adopted October 9, 1998)(Amended May 2, 2003)
(Amended December 5, 2008)(PAR 1469 November 2, 2018)

**PROPOSED HEXAVALENT CHROMIUM EMISSIONS FROM CHROMIUM
AMENDED ELECTROPLATING AND CHROMIC ACID ANODIZING
RULE 1469. OPERATIONS**

(a) Purpose

The purpose of this rule is to reduce hexavalent chromium emissions from facilities that perform chromium electroplating or chromic acid anodizing operations and other activities that are generally associated with chromium electroplating and chromic acid anodizing operations.

(ab) Applicability

(1) This rule shall apply to the owner or operator of any facility performing chromium electroplating or chromic acid anodizing. ~~Compliance with this rule shall be in addition to other applicable rules, such as Rule 1401—New Source Review of Toxic Air Contaminants and Rule 1401.1—Requirements for New and Relocated Facilities Near Schools.~~

(2) ~~Any person who sells, supplies, offers for sale, uses, or manufactures for sale in the District a chromium electroplating or chromic acid anodizing kit.~~

(bc) Definitions

For the purposes of this rule, the following definitions shall apply:

(c) (1) ADD-ON AIR POLLUTION CONTROL DEVICE means equipment installed in the ventilation system of ~~chromium electroplating and anodizing tanks~~ any Tier I, Tier II, or Tier III Hexavalent Chromium Tank(s) for the purposes of collecting and containing chromium emissions from the tank(s).

(c) (2) ADD-ON NON-VENTILATED AIR POLLUTION CONTROL DEVICE means equipment installed on any Tier I, Tier II, or Tier III Hexavalent Chromium Tank(s) for the purposes of collecting, containing, or eliminating chromium emissions that is hermetically sealed and does not utilize a ventilation system.

(c) (23) AIR POLLUTION CONTROL TECHNIQUE means any method, such as an add-on air pollution control device, add-on non-ventilated air pollution control device, mechanical fume suppressant or a chemical fume suppressant, that is used to reduce chromium emissions from one or more

- Tier I, Tier II, or Tier III Hexavalent Chromium Tank(s)chromium electroplating and chromic acid anodizing tanks.
- (c) (34) AMPERE-HOURS means the integral of electrical current applied to an electroplating tank (amperes) over a period of time (hours).
- (c) (45) ANNUAL PERMITTED AMPERE-HOURS means the maximum allowable chromium electroplating or anodizing rectifier production in ampere-hours, on an annual basis as specified in the SCAQMD Permit to Operate, or SCAQMD Permit to Construct, or Compliance Plan for the facility.
- (c) (6) APPROVED CLEANING METHOD means cleaning using a wet mop, damp cloth, wet wash, low pressure spray nozzle, HEPA vacuum, or other method as approved by the Executive Officer.
- (c) (7) ASSOCIATED PROCESS TANK means any tank in the process line of a Tier I, Tier II, or Tier III Hexavalent Chromium Tank.
- (5) ~~AREA SOURCE means any stationary source of hazardous air pollutants that is not a major source as defined in this rule.~~
- (c) (68) BASE MATERIAL means the metal, metal alloy, or plastic that comprises the workpiece.
- (c) (9) BARRIER means a physical divider that can be fixed or portable such as a wall, welding screen, plastic strip curtains, etc.
- (c) (710) BATH COMPONENT means the trade or brand name of each component in trivalent chromium electroplating baths, including the chemical name of the wetting agent contained in that component.
- (8) ~~BREAKDOWN means an unforeseeable impairment of an air pollution control device or related operating equipment which causes a violation of any emission limitation or restriction prescribed by this rule or by State law and which: is not the result of neglect or disregard of any air pollution control law, rule, or regulation; is not intentional or the result of negligence, or improper maintenance; is not a recurrent breakdown of the same equipment; and, does not constitute a nuisance as defined in the State of California Health and Safety Code, Section 41700, with the burden of proving the criteria of this section placed upon the person seeking to come under the provisions of this law.~~
- (c) (11) BUILDING ENCLOSURE means a permanent building or physical structure, or portion of a building, enclosed with a floor, walls, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, run-off), with

limited openings to allow access for people, vehicles, equipment, or parts. A room within a building enclosure that is completely enclosed with a floor, walls, and a roof would also meet this definition.

- (c) (912) CHEMICAL FUME SUPPRESSANT means any chemical agent that) reduces or suppresses fumes or mists at the surface of an electroplating or anodizing bath; another term for fume suppressant is mist suppressant.
- (c) (401) CHROMIC ACID means the common name for chromium anhydride 3) (CrO_3).
- (c) (441) CHROMIC ACID ANODIZING means the electrolytic process by which an 4) oxide layer is produced on the surface of a base material for functional purposes (e.g., corrosion resistance or electrical insulation) using a chromic acid solution. In chromic acid anodizing, the part to be anodized acts as the anode in the electrical circuit, and the chromic acid solution, with a concentration typically ranging from 50 to 100 grams per liter (g/L), serves as the electrolyte.
- (c) (421) CHROMIUM ELECTROPLATING OR CHROMIC ACID ANODIZING 5) TANK means the receptacle or container in which hard or decorative chromium electroplating or chromic acid anodizing occurs.
- (c) (431) COMPOSITE MESH-PAD SYSTEM (CMP) means an add-on air pollution 6) control device typically consisting of several mesh-pad stages. The purpose of the first stage is to remove large particles. Smaller particles are removed in the second stage, which consists of the composite mesh pad. A final stage may remove any re-entrained particles not collected by the composite mesh pad.
- (c) (441) DECORATIVE CHROMIUM ELECTROPLATING means the process by 7) which a thin layer of chromium (typically 0.003 to 2.5 microns) is electrodeposited on a base metal, plastic, or undercoating to provide a bright surface with wear and tarnish resistance. In this process, the part(s) serves as the cathode in the electrolytic cell and the solution serves as the electrolyte. Typical current density applied during this process ranges from 540 to 2,400 Amperes per square meter (A/m^2) for total electroplating times ranging between 0.5 to 5 minutes.
- (c) (451) DRAGOUT means fluid containing hexavalent chromium that drips off from 8) ~~parts being electroplated or anodized~~ parts, or from equipment used to remove electroplated or anodized parts from a tank.

- (c) ~~(161)~~ 9) ELECTROPLATING OR ANODIZING BATH means the electrolytic solution used as the conducting medium in which the flow of current is accompanied by movement of metal ions for the purpose of electroplating metal out of the solution onto a workpiece or for oxidizing the base material.
- (c) ~~(172)~~ 0) EMISSION LIMITATION means, ~~for the purposes of this rule,~~ the concentration of total chromium allowed to be emitted expressed in milligrams per dry standard cubic meter (mg/dscm), or the allowable surface tension expressed in dynes per centimeter (dynes/cm) for decorative chromium electroplating and chromic acid anodizing tanks; and the milligrams of hexavalent chromium per ampere-hour (mg/amp-hr) of electrical current applied to the electroplating tank for hard or decorative chromium electroplating tanks or chromic acid anodizing tanks, or mass emission rate for a Tier II or Tier III hexavalent chromium tank.
- (c) ~~(182)~~ 1) ENCLOSED STORAGE AREA is any space or structure used to contain material that prevents its contents from being emitted into the atmosphere.
- (c) ~~(22)~~ ENCLOSURE OPENING is any permanent opening that is designed to be part of a building enclosure or permanent total enclosure, such as passages, doorways, bay doors, vents, roof openings, and windows. The term excludes openings that are designed to accommodate and generally conform to a stack or duct for a building enclosure or permanent total enclosure.
- (c) ~~(192)~~ 3) EXISTING FACILITY means a facility that is in operation before October 24, 2007.
- (c) ~~(202)~~ 4) FACILITY means ~~at the major or area source at which chromium electroplating or chromic acid anodizing is performed and/or any source or group of sources or other air contaminant emitting activities which are~~ located on one or more contiguous properties within the District, in actual physical contact or separated solely by a public roadway or other public right-of-way, and are owned or operated by the same person (or by persons under common control), or an outer continental shelf (OCS) source as determined in 40 CFR Section 55.2. Such above-described groups, if noncontiguous, but connected only by land carrying a pipeline, shall not be considered one facility. Sources or installations involved in crude oil and gas production in Southern California Coastal or OCS Waters and transport of such crude oil and gas in Southern California Coastal or OCS Waters shall be included in the same facility which is under the same ownership or use entitlement as the crude oil and gas production facility on-shore.

- (c) (212) FIBER-BED MIST ELIMINATOR means an add-on air pollution control device that removes contaminants from a gas stream through the mechanisms of inertial impaction and Brownian diffusion. This device consists of one or more fiber beds and is typically installed downstream of another control device, which serves to prevent plugging, and consists of one or more fiber beds. Each bed consists of a hollow cylinder formed from two concentric screens; the fiber between the screens may be fabricated from glass, ceramic, plastic, or metal.
- (c) (222) FOAM BLANKET means the type of chemical fume suppressant that generates a layer of foam across the surface of a solution when current is applied to that solution.
- (c) (232) FRESH WATER means water, such as tap water, that has not been previously used in a process operation or, if the water has been recycled from a process operation, it has been treated and meets the effluent guidelines for chromium wastewater.
- (c) (242) FUGITIVE EMISSIONS~~DUST~~, ~~for the purpose of this rule~~ means any emissions generated from the operations at a facility, including solid particulate matter, gas, or mist, potentially containing hexavalent chromium that becomes airborne by natural or man-made activities, excluding particulate matter emitted from an exhaust stack.
- (c) (252) HARD CHROMIUM ELECTROPLATING or INDUSTRIAL CHROMIUM ELECTROPLATING means a process by which a thick layer of chromium (typically greater than 1.0 microns) is electrodeposited on a base material to provide a surface with functional properties such as wear resistance, a low coefficient of friction, hardness, and corrosion resistance. In this process, the part serves as the cathode in the electrolytic cell and the solution serves as the electrolyte. Hard chromium electroplating process is performed at current densities typically ranging from 1,600 to 6,500 A/m² for total electroplating times ranging from 20 minutes to 36 hours depending upon the desired plate thickness.
- (c) (263) HEXAVALENT CHROMIUM means the form of chromium in a valence state of +6.
- (c) (273) HIGH EFFICIENCY PARTICULATE ARRESTORS (HEPA) means filter(s) ~~rated that~~ are individually dioctyl phthalate tested and certified by the manufacturer to have a control efficiency of not less than 99.97 percent

- ~~or more efficient in collecting particle sizes on 0.3 microns particles or larger.~~
- (c) (32) HEPA VACUUM means a vacuum that is both designed for the use of and fitted with a HEPA filter.
- (c) (283) LEAK means the release of chromium emissions from any opening in the emission collection system prior to exiting the emission control device.
3)
- (c) (34) LOW PRESSURE SPRAY NOZZLE means a water spray nozzle capable of regulating water pressure to 35 pounds per square inch or less.
- (c) (293) MAJOR SOURCE means any stationary source or group of stationary sources located within a contiguous area and under common control that emits, or has the potential to emit, considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants.
5)
- (c) (303) MAXIMUM CUMULATIVE POTENTIAL RECTIFIER CAPACITY
6) means the summation of the total installed rectifier capacity associated with the hard chromium electroplating tanks at a facility, expressed in amperes, multiplied by the maximum potential operating schedule of 8,400 hours per year and 0.7, which assumes that electrodes are energized 70 percent of the total operating time. The maximum potential operating schedule is based on operating 24 hours per day, 7 days per week, 50 weeks per year.
- (c) (343) MECHANICAL FUME SUPPRESSANT means any physical device, including but not limited to polyballs that reduces fumes or mist at the surfaces of an electroplating or anodizing bath by direct contact with the surface of the bath. ~~Polyballs are the most commonly used mechanical fume suppressant.~~
7)
- (c) (38) METAL REMOVAL FLUID means a fluid used at the tool and workpiece interface to facilitate the removal of metal from the part, cool the part and tool, extend the life of the tool, and to flush away metal chips and debris, but does not include minimum quantity lubrication fluids used to coat the tool work piece interface with a thin film of lubricant and minimize heat buildup through friction reduction. Minimum quantity lubrication fluids are applied by pre-coating the tool in the lubricant, or by direct application at the tool work piece interface with a fine mist.
- (c) (323) MODIFICATION means either:
9)

- (A) ~~any~~ Any physical change in, change in method of operation of, or addition to an existing permit unit subject to this rule that requires an application for a SCAQMD ~~p~~Permit to ~~e~~Construct and/or Operate and results in an increase in hexavalent chromium emissions. Routine maintenance and/or repair shall not be considered a physical change. A change in the method of operation of equipment, unless previously limited by an enforceable permit condition, shall not include:
- (i) ~~an~~ An increase in the production rate or annual ampere-hours, unless such increases will cause the maximum design capacity of the equipment to be exceeded, or will cause a facility to be subject to a different requirement in Table 21 – Hexavalent Chromium Emission Limits for Hexavalent Hard and Decorative Chromium Electroplating and Chromic Acid Anodizing Tanks of ~~paragraph (e)(11)~~; or
 - (ii) ~~an~~ An increase in the hours of operation; or
 - (iii) ~~a~~ A change in ownership of a source;
- (B) ~~the~~ The addition of any new chromium electroplating or anodizing tank at an existing facility which increases hexavalent chromium emissions; or
- (C) ~~the~~ The fixed capital cost of the replacement of components ~~exceedings~~ exceeding 50 percent of the fixed capital cost that would be required to construct a comparable new source.
- (c) (334) MODIFIED FACILITY means any existing facility which has undergone a modification on or after October 24, 2007.
- (c) (344) NEW FACILITY means any facility that begins initial operations on or after 1) October 24, 2007. “New Facility” does not include the installation of a new chromium electroplating or chromic acid anodizing tank at an existing facility or the modification of an existing facility.
- (c) (354) OPERATING PARAMETER VALUE means a minimum or maximum value established to for a monitoring the proper operation of an air pollution control technique, device or process parameter which, if achieved by itself or in combination with one or more other operating parameter values, determines that an owner or operator is in continual compliance with the applicable emission limitation or standard.

- (c) ~~(364)~~ 3) PACKED-BED SCRUBBER means an add-on air pollution control device consisting of a single or double packed-bed that contains packing media on which the chromic acid droplets impinge. The packed-bed section of the scrubber is followed by a mist eliminator to remove any water entrained from the packed-bed section.
- (c) ~~(44)~~ PERFLUOROOCTANE SULFONIC ACID (PFOS) BASED FUME SUPPRESSANT means a fume suppressant that contains 1 percent or greater PFOS (CAS No. 1763-23-1) by weight.
- (c) ~~(45)~~ PERMANENT TOTAL ENCLOSURE means a permanent building or containment structure, enclosed with a floor, walls, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, run-off) that has limited openings to allow access for people and vehicles, that is free of breaks or deterioration that could cause or result in fugitive emissions, and has been evaluated to meet the design requirements set forth in U.S. EPA Method 204, or other design approved by the Executive Officer.
- (c) ~~(374)~~ 6) RESPONSIBLE OFFICIAL means one of the following:
- (A) For a corporation: A president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities and either:
 - (i) The facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars); or
 - (ii) The delegation of authority to such representative is approved in advance by the U.-S. EPA Administrator.
 - (B) For a partnership or sole proprietorship: a general partner or the proprietor, respectively.
 - (C) For a municipality, state, Federal, or other public agency: either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a Federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the

agency (e.g., a Regional Administrator of the ~~U.S. Environmental Protection Agency~~ [U.S. EPA]).

(D) For sources (as defined in this rule) applying for or subject to a Title V permit: “responsible official” shall have the same meaning as defined in ~~District~~SCAQMD’s Regulation XXX.

- (c) (384) 7) SCHOOL means any public or private school, including juvenile detention facilities with classrooms, used for ~~purposes of~~ the education of more than 12 children at the school, ~~including~~ in kindergarten ~~and grades 1 through grade 12, inclusive,~~ School also means an Early Learning and Developmental Program by the U.S. Department of Education or any state or local early learning and development programs such as pre-schools, Early Head Start, Head Start, First Five, and Child Development Centers. A school ~~but~~ does not include any private school in which education is primarily conducted in private homes. The term includes any building or structure, playground, athletic field, or other area of school property, ~~but does not include unimproved school property.~~
- (c) (394) 8) SCHOOL UNDER CONSTRUCTION means any property that meets any of the following conditions:
- (A) ~~construction~~Construction of a school has commenced; or
 - (B) ~~a~~A ~~CEQA~~California Environmental Quality Act Notice for the construction of a school has been issued; or
 - (C) ~~a~~A school has been identified in an approved local government specific plan.
- (c) (404) 9) SENSITIVE RECEPTOR means any residence including private homes, condominiums, apartments, and living quarters; education resources such as preschools and kindergarten through grade twelve (k-12) schools; daycare centers; and health care facilities such as hospitals or retirement and nursing homes. A sensitive receptor includes long term care hospitals, hospices, prisons, and dormitories or similar live-in housing.
- (c) (415) 0) SOURCE means any chromium electroplating or chromic acid anodizing operation and any equipment or materials associated with the ~~selected associated~~ air pollution control technique.
- (c) (425) 1) STALAGMOMETER means a device used to measure the surface tension of a solution by determining the mass of a drop of liquid by weighing a known number of drops, or by counting the number of drops obtained from the weight of each drop, in a given volume of liquid.

- (c) (435) SUBSTANTIAL USE of a SCAQMD Permit to Construct means one or more of the following:
- (A) ~~the~~The equipment that constitutes the source has been purchased or acquired;
 - (B) ~~construction~~Construction activities, other than grading or installation of utilities or foundations, have begun and are continuing; or
 - (C) ~~a~~A contract to complete construction of the source within one year has been entered into.
- (c) (445) SURFACE TENSION means the property, due to molecular forces, that exists in the surface film of all liquids and tends to prevent liquid from spreading.
- (c) (455) TANK OPERATION means the time in which current and/or voltage is being applied to a chromium electroplating tank or a chromic acid anodizing tank.
- (c) (55) TANK PROCESS AREA means the area in the facility within 15 feet of any Tier I, Tier II, or Tier III Hexavalent Chromium Tank(s), or to the nearest wall of a building enclosure or permanent total enclosure, whichever is closer.
- (c) (465) TENSIOMETER means a device used to measure the surface tension of a solution by measuring the force necessary to pull a filament, plate, or ring, or other SCAQMD approved object from the surface of a liquid.
- (c) (57) TIER I HEXAVALENT CHROMIUM TANK means a tank permitted as containing a hexavalent chromium concentration of 1,000 parts per million (ppm) or greater and is not a Tier II or Tier III Hexavalent Chromium Tank.
- (c) (58) TIER II HEXAVALENT CHROMIUM TANK means a tank that is operated or permitted to operate by the SCAQMD within the range of temperatures and corresponding hexavalent chromium concentrations specified in Appendix 10 and is not a Tier III Hexavalent Chromium Tank.
- (c) (59) TIER III HEXAVALENT CHROMIUM TANK means a tank that meets any of the following:
- (A) Is operated or permitted to operate by SCAQMD within the range of temperatures and corresponding hexavalent chromium concentrations specified in Appendix 10; or

- (B) Contains a hexavalent chromium concentration greater than 1,000 ppm, and uses air sparging as an agitation method or is electrolytic;
or
- (C) Is a hexavalent chromium electroplating or chromic acid anodizing tank.
- (c) (476) TRIVALENT CHROMIUM means the form of chromium in a valence state of +3.
- (c) (486) TRIVALENT CHROMIUM PROCESS means the process used for electrodeposition of a thin layer of chromium onto a base material using a trivalent chromium solution instead of a chromic acid solution.
- (c) (496) WEEKLY means at least once every seven calendar days.
- (c) (506) WETTING AGENT means the type of chemical fume suppressant that reduces the surface tension of a liquid.
- (ed) Requirements
The owner or operator of a facility shall:
- (d) (1) ~~The owner or operator of a chromium electroplating tank, chromic acid anodizing tank, or group of such tanks, shall equip~~ Equip each rectified tank with a continuous recording, non-resettable, ampere-hour meter that operates on the electrical power lines connected to the tank or group of tanks. A separate meter shall be hard wired for each ~~rectifier~~ rectifier tank;
- (d) (2) ~~The owner or operator of a source with any electroplating or anodizing tank using a wetting agent chemical fume suppressant shall use~~ Only use wetting agent chemical fume suppressants certified pursuant to subdivision (f) in hexavalent chromium electroplating or chromic acid anodizing tank(s); -
- (d) (3) ~~No hexavalent chromium electroplating or chromic acid anodizing tank shall be~~ Not air sparged a hexavalent chromium electroplating or chromic acid anodizing tank when electroplating or anodizing is not occurring, or while chromic acid is being added;
- (d) (4) Operate any Tier I, Tier II, or Tier III Hexavalent Chromium Tank within a building enclosure beginning [90 days After Date of Rule Adoption]; and
- (d) (5) Operate any Tier II or Tier III Hexavalent Chromium Tank within a building enclosure that meets the requirements of subdivision (e).

- (e) Requirements for Building Enclosures for Tier II and Tier III Hexavalent Chromium Tanks
Beginning [180 Days After Date of Rule Adoption], the owner or operator of a facility shall operate Tier II or Tier III Hexavalent Chromium Tank(s) within a building enclosure that meets the following requirements:
- (e) (1) The combined area of all enclosure openings shall not exceed 3.5% of the building enclosure envelope, which is calculated as the total surface area of the building enclosure's exterior walls, floor, and horizontal projection of the roof on the ground. Information on calculations for the building enclosure envelope, including locations and dimensions of openings that are counted towards the applicable building envelope allowance, shall be provided in the compliance status reports required in paragraphs (p)(2) and (p)(3). Openings that close or use one or more of the following methods for the enclosure opening shall not be counted toward the combined area of all enclosure openings:
- (A) Door that automatically closes; or
 - (B) Overlapping plastic strip curtain; or
 - (C) Vestibule; or
 - (D) Airlock system; or
 - (E) Alternative method to minimize the release of fugitive emissions from the building enclosure that the owner or operator of a facility can demonstrate to the Executive Officer is an equivalent or more effective method(s) to minimize the movement of air within the building enclosure.
- (e) (2) Ensure that any building enclosure openings that open to the exterior and are on opposite ends of the building enclosure where air can pass through are not simultaneously open except during the passage of vehicles, equipment or people, not to exceed two hours per operating day, by using one or more of the following:
- (A) A method specified in subparagraphs (e)(1)(A) through (e)(1)(E) for the enclosure opening(s) on one of the opposite ends of the building enclosure; or
 - (B) Utilize a barrier, such as large piece of equipment that restricts air from moving through the building enclosure.

- (e) (3) Except for the movement of vehicles, equipment or people, close any building enclosure opening or use any of the methods listed in subparagraphs (e)(1)(A) through (e)(1)(E), that directly faces and opens towards the nearest:
- (A) Sensitive receptor, with the exception of a school, that is located within 1,000 feet, as measured from the property line of the sensitive receptor to the building enclosure opening; and
 - (B) School that is located within 1,000 feet, as measured from the property line of the school to the building enclosure opening.
- (e) (4) Close all enclosure openings in the roof that are located within 15 feet from the edge of any Tier II or Tier III Hexavalent Chromium Tank except enclosure openings in the roof that:
- (A) Allow access for equipment or parts; or
 - (B) Provide intake or circulation air for a building enclosure and does not create air velocities that impact the collection efficiency of a ventilation system for an add-on air pollution control device; or
 - (C) Are equipped with a HEPA filter or other air pollution control device.
- (e) (5) Repair any breach in a building enclosure located within 15 feet from the edge of any Tier II or Tier III Hexavalent Chromium Tank within 72 hours of discovery. The owner or operator of a facility may request an extension by calling 1-800-CUT-SMOG. The Executive Officer may approve a request for an extension beyond the 72-hour limit if the request is submitted before the 72-hour time limit has expired and the owner or operator of a facility provides information that substantiates:
- (A) The repair will take longer than 72 hours, or the equipment, parts, or materials needed for the repair cannot be obtained within 72 hours; and
 - (B) Temporary measures are implemented that ensure no fugitive emissions result from a breach.
- (e) (6) The owner or operator of a facility shall notify the Executive Officer if any of the requirements specified in paragraphs (e)(1) through (e)(4) cannot be complied with due to conflicting requirements set forth by the federal Occupational Safety and Health Administration (OSHA), California Division of Occupational Safety and Health (CAL-OSHA), or other municipal codes or agency requirements directly related to worker safety. A Building Enclosure Compliance Plan shall be submitted to the Executive Officer for

review and approval no later than [30 days after Date of Rule Adoption] for facilities existing before [Date of Rule Adoption], and prior to initial start-up for all other facilities. The Building Enclosure Compliance Plan shall be subject to plan fees specified in Rule 306 and include:

- (A) An explanation as to why the provision(s) specified in paragraphs (e)(1) through (e)(4) is in conflict with the requirements set forth by OSHA or CAL-OSHA, or other municipal codes or agency requirements directly related to worker safety; and
 - (B) Alternative compliance measure(s) that will be implemented to minimize the release of fugitive emissions to the outside of the building enclosure.
- (e) (7) The Executive Officer shall notify the owner or operator of a facility in writing whether the Building Enclosure Compliance Plan is approved or disapproved.
- (A) If the Building Enclosure Compliance Plan is disapproved, the owner or operator of a facility shall submit a revised Building Enclosure Compliance Plan within 30 calendar days after notification of disapproval of the Building Enclosure Compliance Plan. The revised Building Enclosure Compliance Plan shall include any information to address deficiencies identified in the disapproval letter.
 - (B) The Executive Officer will either approve the revised Building Enclosure Compliance Plan or modify the Building Enclosure Compliance Plan and approve it as modified. The owner or operator may appeal the Building Enclosure Compliance Plan modified by the Executive Officer to the Hearing Board pursuant to Rule 216 – Appeals and Rule 221 – Plans.
- (e) (8) The owner or operator of a facility shall implement the Building Enclosure Compliance Plan specified in paragraphs (e)(6) and (e)(7), as approved by the Executive Officer, no later than 90 days after receiving notification of approval for facilities existing before [Date of Rule Adoption], and prior to initial start-up for all other facilities. Compliance with the approved alternative compliance measures shall constitute compliance with the applicable provisions of paragraphs (e)(1) through (e)(4).
- (e) (9) The owner or operator of a facility that has applied for an SCAQMD permit to install or is required to install an add-on air pollution control device to control either a Tier II or Tier III Hexavalent Chromium Tank(s) shall be

exempt from paragraphs (e)(1) and (e)(4) until the add-on air pollution control device has been installed and commenced normal operation.

~~(4)~~(f) Housekeeping Requirements:

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An owner or operator of a ~~hexavalent~~-chromium electroplating or chromic acid anodizing facility shall:

- (f) ~~(A)~~ Store chromic acid powder or flakes, or other substances that may contain
- 1) hexavalent chromium, in a closed container in an enclosed storage area when not in use;
 - (f) ~~(B)~~ Use a closed container when transporting chromic acid powder or flakes from
 - 2) an enclosed storage area to chromium electroplating or chromic acid anodizing tanks;
 - (f) ~~(C)~~ Clean-up, using an approved cleaning method, or contain, using a drip tray or
 - 3) other containment device, any liquid or solid material that may contain hexavalent chromium that is spilled immediately and no ~~later~~longer than one hour after being spilled;
 - (f) ~~(D)~~ Clean, using an approved cleaning method, surfaces within the enclosed
 - 4) storage area, open floor area, walkways around the chromium electroplating or chromic acid anodizing tank(s), or any surface potentially contaminated with hexavalent chromium or surfaces that potentially accumulate dust weekly; at least once every seven days in one or more of the following manners: HEPA vacuumed, hand-wiped with a damp cloth, wet-mopped, or maintained with the use of non-toxic chemical dust suppressants; and
 - (f) ~~(E)~~(5) Store, dispose of, recover, or recycle chromium or chromium-containing
 -) wastes generated from housekeeping activities of this subdivision using practices that do not lead to fugitive emissions~~dust.~~ Containers with chromium-containing waste material shall be kept closed at all times except when being filled or emptied;
 - (f) (6) Beginning [30 Days After Date of Rule Adoption], use an approved cleaning method to clean floors within 20 feet of a buffing, grinding, or polishing workstation on days when buffing, grinding, or polishing are conducted; and
 - (f) (7) Beginning [30 Days After Date of Rule Adoption], eliminate all flooring on walkways in the tank process areas that is made of fabric, such as carpets or rugs, where hexavalent chromium containing materials can become trapped.

- (F) ~~Install a physical barrier to separate the buffing, grinding, or polishing area within a facility from the hexavalent chromium electroplating or anodizing operation. The barrier may take the form of plastic strip curtains.~~
- (G) ~~Compressed air cleaning operations shall not be conducted at or adjacent to the buffing and grinding areas or the hexavalent chromium electroplating or anodizing operations.~~
- (f) (8) Abatement of Hexavalent Chromium Prior to Cutting of Roof Surfaces
The owner or operator a facility shall:
- (A) Clean affected surface areas using a HEPA vacuum prior to cutting into a building enclosure roof;
- (B) Minimize fugitive emissions during cutting activities using method(s) such as a temporary enclosure and/or HEPA vacuuming; and
- (C) Notify the Executive Officer at least 48 hours prior to the commencement of any roof cutting activities into a building enclosure by calling 1-800-CUT-SMOG.
- (f) (9) Ensure that if a HEPA vacuum is used, that the HEPA filter is free of tears, fractures, holes or other types of damage, and securely latched and properly situated in the vacuum to prevent air leakage from the filtration system.
- (g) Best Management Practices
- (g) ~~(H)~~ The owner or operator of a facility shall M~~inimize dragout outside of~~from a
 1) chromium the electroplating or chromic acid anodizing tank(s) for: by
 implementing the following practices:
- (i)(A) ~~Facilities with a~~An automated lines shall haveby installing a drip tray, or other containment device installed between the chromium electroplating or chromic acid anodizing tanks so such that the liquid does not fall through the space between tanks. The T~~rays shall be placed such that the liquid is captured and returned~~the liquid to the tank(s), and be cleaned such that there is no accumulation of visible dust or residue on the drip tray or other containment device potentially contaminated with hexavalent chromium.
- (ii)(B) ~~Facilities without~~A non-automated lines shall byhandling each electroplated or anodized part, or equipment used to handle such

these parts, so that liquid containing chromium or chromic acid is not dripped outside the chromium electroplating, or chromic acid anodizing tank,s, including or associated process tanks, unless the liquid is captured by a drip tray or other containment device. Facilities spraying down parts over the chromium electroplating or chromic acid anodizing tank(s) to remove excess chromic acid shall have a splash guard installed at the tank to minimize overspray and to ensure that any hexavalent chromium laden liquid is captured and returned to the chromium electroplating or chromic acid anodizing tank. Splash guards shall be cleaned such that there is no accumulation of visible dust potentially contaminated with hexavalent chromium.

- (g) (2) Beginning [90 Days After Date of Rule Adoption], the owner or operator of a facility that conducts chromium electroplating or chromic acid anodizing operations shall not spray rinse parts or equipment that were previously in a Tier II or Tier III Hexavalent Chromium Tank, unless the parts or equipment are fully lowered inside a tank where the liquid is captured inside the tank. The owner or operator of a facility may alternatively ensure that any liquid containing chromium is captured and returned to the tank by meeting the following conditions when rinsing above a tank:
- (A) Installing a splash guard(s) at the tank that is free of holes, tears, or openings. Splash guards shall be cleaned weekly with water; or
 - (B) For tanks located within a process line utilizing an overhead crane system that would be restricted by the installation of splash guards specified in subparagraph (g)(2)(A), use a low pressure spray nozzle in a manner where water flows off of the part or equipment and into the tank.
- (g) (3) Beginning [60 Days After Date of Rule Adoption], the owner or operator of a facility shall maintain clear labeling of each tank within the tank process area with a tank number or other identifier, SCAQMD permit number, bath contents, maximum concentration (ppm) of hexavalent chromium, operating temperature range, any agitation methods used, and designation of whether it is a Tier I, Tier II, or Tier III Hexavalent Chromium Tank, if applicable.
- (g) (4) Beginning [90 Days After Date of Rule Adoption], the owner or operator of a facility shall conduct all buffing, grinding, and polishing operations within a building enclosure.

- (g) (5) Beginning [90 Days After Date of Rule Adoption], the owner or operator of a facility shall install a barrier to prevent the migration of dust from buffing, grinding, or polishing areas to the chromium electroplating or chromic acid anodizing operation.
- (g) (6) The owner or operator of a facility shall not conduct compressed air cleaning or drying operations within 15 feet of any Tier II or Tier III Hexavalent Chromium Tank(s) unless:
- (A) A barrier separates the compressed air cleaning or drying operation from the Tier II or Tier III Hexavalent Chromium Tank(s). A tank wall may function as the barrier provided the parts being air cleaned or dried are below the lip of the tank; or
- (B) Compressed air cleaning or drying operations are conducted in a permanent total enclosure.
- (h) Air Pollution Control Technique Requirements
- (h) ~~(5)(1)~~ The owner or operator of a facility ~~Add-on air pollution control device(s) for hard or decorative chromium electroplating or chromic acid anodizing tanks~~ shall not be removed or rendered inoperable add-on air pollution control device(s) for hard or decorative chromium electroplating or chromic acid anodizing tanks unless it is replaced by air pollution control techniques meeting the requirements in Table 1 - Hexavalent Chromium Emission Limits for Hexavalent Hard and Decorative Chromium Electroplating and Chromic Acid Anodizing Tanks a higher control efficiency than previously achieved, or an emission rate of 0.0015 milligrams per ampere-hour or less, whichever control efficiency is more effective, as demonstrated by a performance test conducted pursuant to subdivision (e), or unless or the facility is operating under an approved alternative compliance method pursuant to ~~paragraph (d)(6)~~ subdivision (i).
- (6) Add-On Control Requirement for Hard Chromium Electroplating Tanks
 During tank operation, each owner or operator of an existing, modified or new source, except facilities that have applied for and received approval for an alternative compliance method pursuant to paragraph (d)(6) or an existing operation that has applied for and received approval for an interim alternative requirement as specified in paragraph (d)(5), shall control hexavalent chromium emissions discharged to the atmosphere from that source by

~~reducing the hexavalent chromium emissions using an add-on air pollution control device.~~

~~(7) Training and Certification~~

~~(A) Chromium electroplating personnel responsible for environmental compliance, maintaining electroplating bath chemistries, and testing and recording electroplating bath surface tension data shall complete a District approved training program every two years. Initial training shall have been completed prior to May 1, 2004 for facilities existing before that time. For new facilities, initial training must be completed within a period not to exceed two years of start-up.~~

~~(B) Only persons who have completed a District approved training program and have received a certification issued by the District shall be responsible for recordkeeping associated with environmental compliance, maintaining electroplating bath chemistries, and testing and recording electroplating bath surface tension data.~~

~~(C) Notwithstanding subparagraph (c)(7)(B), in the event that all persons who have completed a District approved training program leave employment at a facility, the owner or operator may be responsible for recordkeeping associated with environmental compliance, maintaining electroplating bath chemistries, and testing and recording electroplating bath surface tension data for a period not to exceed two years.~~

~~(8) Interim Emission Standards for Existing Hexavalent Chromium Electroplating and Chromic Acid Anodizing Facilities Located 25 Meters or Less from a Licensed Daycare, Hospital, Convalescent Home, or a Residence, or Located 100 Meters or Less from an Existing, as of May 2, 2003, School. The following emission limitations shall be in effect until the limits of paragraph (c)(11) become effective.~~

~~(A) The owner or operator shall reduce hexavalent chromium emissions to an emission limitation of 0.0015 milligram or less per ampere-hour for each tank, as measured after add-on controls, if any; or~~

~~(B) The owner or operator shall comply with any applicable interim alternative compliance option, as specified in paragraphs (d)(1) through (d)(5).~~

~~(9) Interim Emission Standards for Existing Hexavalent Chromium Electroplating and Chromic Acid Anodizing Facilities Located More than 25 Meters from a Licensed Daycare, Hospital, Convalescent Home, or a Residence, and More than 100 Meters from an Existing, as of May 2, 2003, School.~~

~~The following emission limitations shall be in effect until the limits of paragraph (c)(11) become effective.~~

~~(A) The owner or operator shall reduce hexavalent chromium emissions to an emission limitation of:~~

~~(i) 0.01 milligrams or less per ampere hour for each tank, as measured after add-on controls, if any, when actual consumption of electrical current used by the facility for electroplating or anodizing tanks subject to this rule is less than the threshold given in Table 1, for the appropriate operating scenario and operating schedule, or the applicable distance-adjusted ampere-hour level as specified in Appendix 7; or~~

~~(ii) 0.0015 milligrams or less per ampere-hour for each tank, as measured after add-on controls, if any, when actual consumption of electrical current used by the facility for electroplating or anodizing tanks subject to this rule exceeds the threshold given in Table 1, for the appropriate facility operating scenario and regular operating schedule, or the applicable distance-adjusted ampere-hour level as specified in Appendix 7; or~~

~~(B) The owner or operator shall comply with any applicable interim alternative compliance option, as specified in paragraphs (d)(1) through (d)(5).~~

Table 1

Ampere-Hour Thresholds for Facilities Located More than 25 Meters from a Sensitive Receptor or a Residence

Operating Scenario	Regular Operating Schedule	Ampere-Hour Threshold
Vented to Air Pollution Control Device	More than 12 hours per day	1,800,000 ampere hours/yr
Vented to Air Pollution Control Device	12 hours per day or less	1,600,000 ampere hours/yr

Not Vented to Air Pollution Control Device	Any	1,150,000 ampere-hours/yr
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~~(10) Interim Emission Standards for Existing Facilities Conducting Multiple Hexavalent Chromium Electroplating Processes or Anodizing Processes~~

~~(A) For any facility subject to paragraph (c)(9) where a combination of hexavalent chromium electroplating or chromic acid anodizing is conducted, the owner or operator shall comply with an emission limitation in lieu of the one specified in paragraph (c)(9). The emission limitation shall be determined by calculating weighted facility energy consumption over any calendar year, using the following equation:~~

$$\text{Weighting Factor} = \frac{\text{Tanks Vented to APC Operating } > 12 \text{ hrs/day (Amp-hrs/yr)}}{(1)} + \frac{\text{Tanks Vented to APC Operating } \leq 12 \text{ hrs/day (Amp-hrs/yr)}}{(2)} + \frac{\text{Tanks Not Vented to APC (Amp-hrs/yr)}}{(3)}$$

Where:

- (1) = 1,800,000 ampere-hours per year or applicable distance-adjusted ampere-hour level as specified in Appendix 7.
- (2) = 1,600,000 ampere-hours per year or applicable distance-adjusted ampere-hour level as specified in Appendix 7.
- (3) = 1,150,000 ampere-hours per year or applicable distance-adjusted ampere-hour level as specified in Appendix 7.

~~(B) If weighted source energy consumption is less than or equal to 1, the applicable emission limitation shall be 0.01 milligram or less per ampere-hour for each tank~~

~~(C) If weighted source energy consumption is greater than 1, the applicable emission limitation shall be 0.0015 milligram or less per ampere-hour for each tank, as measured after add-on controls, if any.~~

(h) ~~(11)~~ 2) Emission Standards for Existing Hexavalent Hard and Decorative Chromium Electroplating and Chromic Acid Anodizing Facilities beginning October 24, 2007

- (A) The owner or operator of a facility ~~of an existing facility~~ shall control hexavalent chromium emissions discharged to the atmosphere by meeting the requirements identified below in Table 12 - Hexavalent Chromium Emission Limits for Hard and Decorative Chromium Electroplating and Chromic Acid Anodizing Tanks. Alternatively, a facility can choose to comply by operating under an approved alternative compliance method pursuant to subdivision (i) ~~paragraph (d)(6)~~.

Table 1: Hexavalent Chromium Emission Limits for Hard and Decorative Chromium Electroplating and Chromic Acid Anodizing Tanks

<u>Facility Type</u>	<u>Distance to Sensitive Receptor (feet)</u>	<u>Annual Permitted Amp-Hrs</u>	<u>Hexavalent Chromium Emission Limit (mg/amp-hr)</u>	<u>Minimum Air Pollution Control Technique</u>
<u>Existing Facility</u>	<u>< 330¹</u>	<u>< 20,000</u>	<u>0.01</u>	<u>Use of Certified Chemical Fume Suppressant at or below the certified surface tension.³</u>
<u>Existing Facility</u>	<u>< 330¹</u>	<u>> 20,000</u>	<u>0.0015²</u>	<u>Add-on air pollution control device(s) or add-on non-ventilated air pollution control device(s).</u>
<u>Existing Facility</u>	<u>> 330¹</u>	<u>< 50,000</u>	<u>0.01</u>	<u>Use of Certified Chemical Fume Suppressant at or below the certified surface tension.³</u>
<u>Existing Facility</u>	<u>> 330¹</u>	<u>> 50,000 and < 500,000</u>	<u>0.0015²</u>	<u>Use of an air pollution control technique that controls hexavalent chromium.</u>
<u>Existing Facility</u>	<u>> 330¹</u>	<u>> 500,000</u>	<u>0.0015²</u>	<u>Add-on air pollution control device(s) or add-on non-ventilated air pollution control device(s).</u>
<u>Modified Facility</u>	<u>Any</u>	<u>Any</u>	<u>0.0015²</u>	<u>Using an add-on air pollution control device(s), or an approved alternative method pursuant to subdivision (i).</u>
<u>New Facility</u>	<u>Any</u>	<u>Any</u>	<u>0.0011²</u>	<u>Using a HEPA add-on air pollution control device, or an approved alternative method pursuant to subdivision (i).</u>

¹ Distance shall be measured, rounded to the nearest foot, from the edge of the chromium electroplating or chromic acid anodizing tank nearest the sensitive receptor (for facilities without add-on air pollution control devices), or from the stack or centroid of stacks (for facilities with add-on air pollution control devices), to the property line of the nearest sensitive receptor. The symbol < means less than or equal to. The symbol > means greater than.

² As demonstrated by source test requirements under subdivision (k).

³ Alternatively, a facility may install an add-on air pollution control device(s) or add-on non-ventilated air pollution control device(s) that controls hexavalent chromium emissions to below 0.0015 mg/amp-hr as demonstrated through source test requirements under subdivision (k).

Table 2: Hexavalent Chromium Emission Limits for Existing Tanks

<u>Distance to Sensitive Receptor (meters)</u>	<u>Annual Permitted Ampere-hours</u>	<u>Emission Limit (mg/amp-hr)</u>	<u>Effective Date</u>
<u>≤ 100</u>	<u>≤ 20,000</u>	<u>0.01²</u>	<u>4/24/2008</u>
<u>≤ 100</u>	<u>> 20,000 and ≤ 200,000</u>	<u>0.0015¹</u>	<u>10/24/2010</u>
<u>≤ 100</u>	<u>> 200,000</u>	<u>0.0015¹</u>	<u>10/24/2009</u>
<u>≥ 100</u>	<u>≤ 50,000</u>	<u>0.01²</u>	<u>4/24/2008</u>

>100	> 50,000 and ≤ 500,000	0.0015	10/24/2011
>100	> 500,000	0.0015 ¹	10/24/2009

¹Measured after add-on air pollution control device(s).

²Achieved through use of Certified Chemical Fume Suppressants. Alternatively, a facility may install an add-on air pollution control device(s) that controls emissions to below 0.0015 mg/amp-hr.

(B) ~~The owner or operator of an existing facility shall submit by November 24, 2007, a notification to the District providing distance(s) to the nearest sensitive receptor. Distances shall be measured as follows:~~

- (i) ~~For facilities that do not have an add-on air pollution control device on October 24, 2007, the measurement shall be the distance, rounded to the nearest foot, from the edge of the hexavalent chromium electroplating or anodizing tank nearest the sensitive receptor to the property line of the nearest sensitive receptor that exists on October 24, 2007.~~
- (ii) ~~For facilities with an add-on air pollution control device on October 24, 2007, the measurement shall be the distance, rounded to the nearest foot, from the centroid of the stack to the property line of the nearest sensitive receptor that exists on October 24, 2007.~~

(C) ~~Screening Health Risk Assessment~~

- (i) ~~The owner or operator of an existing facility shall conduct a screening health risk assessment if annual hexavalent chromium emissions from the chromium electroplating and chromic acid anodizing operations exceed 15 grams in the calendar year following the year of the facility's applicable effective compliance date specified in Table 2 of paragraph (c)(11) and any calendar year thereafter.~~
- (ii) ~~The screening health risk assessment shall be conducted for hexavalent chromium emissions from the hexavalent chromium electroplating and chromic acid anodizing operations, and in accordance with the most current version of the District's "Risk Assessment Procedures of Rules 1401 and 212" or "Air Toxics Hot Spots Program Risk Assessment Guidelines" (OEHHA Guidelines).~~

- (iii) ~~The owner or operator shall submit the screening health risk assessment to the Executive Officer within 120 days of the end of the calendar year during which the facility's hexavalent chromium emissions exceeded 15 grams.~~
 - (iv) ~~The owner or operator may comply with clause (c)(11)(C)(i) by using an existing health risk assessment or screening health risk assessment previously approved by the District provided the existing health risk assessment is:~~
 - (I) ~~Based on the most current version of the District's "Risk Assessment Procedures of Rules 1401 and 212" or *OEHHA Guidelines*; and~~
 - (II) ~~representative of the chromium electroplating or chromic acid anodizing operating conditions for the subject year; and~~
 - (III) ~~calculated using an annual hexavalent chromium emission amount that is equal to or greater than the amount of the subject year; and~~
 - (IV) ~~uses receptor distances less than or equal to those for the subject year.~~
- (12) ~~Modified Hexavalent Chromium Electroplating or Chromic Acid Anodizing Facilities~~
- (A) ~~The owner or operator of a modified facility shall, upon start-up of modification, control hexavalent chromium emissions from the electroplating or anodizing tank(s) by:~~
 - (i) ~~Using an add-on air pollution control device(s), or an approved alternative method pursuant to paragraph (d)(6), to control hexavalent chromium emission, and~~
 - (ii) ~~Meeting an emission limit of 0.0015 milligrams per ampere-hour or less.~~
 - (B) ~~When annual emissions of hexavalent chromium after modification are expected to exceed 15 grams per calendar year, the owner or operator shall demonstrate that the modification complies with District Rules 1401, 1401.1 and 1402 prior to initial start-up.~~
- (13) ~~New Hexavalent Chromium Electroplating and Chromic Acid Anodizing Facilities~~

~~(A)~~(B) The owner or operator of a new facility ~~conducting hexavalent chromium electroplating or chromic acid anodizing operations~~ shall:

- (i) Demonstrate in its SCAQMD permit application that the new facility is not located in an area that is zoned for residential or mixed use; and
- (ii) Demonstrate in its SCAQMD permit application that the new facility, ~~determined by the District~~, is not located within 1,000 feet from the boundary of a sensitive receptor, a school under construction, or any area that is zoned for residential or mixed use;
- ~~(iii)~~ Reduce hexavalent chromium emissions discharged to the atmosphere from the electroplating or anodizing tank(s) by installing a HEPA add-on air pollution control device, or an approved alternative method pursuant to paragraph (d)(6);
- ~~(iv)~~ Meet a hexavalent chromium emission rate of ≤ 0.0011 milligrams/ampere-hour as measured after the HEPA add-on air pollution control device;
- ~~(v)~~ Conduct a facility-wide screening health risk assessment for all toxic air contaminant emissions which shall be submitted to the District when filing applications for Permit to Construct/Operate the new equipment. The screening health risk assessment shall be conducted in accordance with the most current version of the District's "Risk Assessment Procedures of Rules 1401 and 212" or *OEHHA Guidelines*; and
- ~~(vi)~~ Comply with District Rules 1401 and 1401.1, if applicable.

~~(B)~~(C) A new facility shall be deemed to meet the requirements specified in clauses ~~(e)(13)(A)(i)(h)(2)(B)(i)~~ and ~~(h)(2)(B)(ii)~~ if one of the following criteria is met, even if the facility does not meet the requirement at the time of initial start-up:

- (i) The requirements specified in clauses ~~(e)(13)(A)(i)(h)(2)(B)(i)~~ and ~~(h)(2)(B)(ii)~~ are met at the time an SCAQMD Permit to Construct is issued ~~by the District~~, and substantial use of the SCAQMD Permit to Construct takes place within one year after it is issued; or

(ii) The requirements specified in clauses ~~(e)(13)(A)(i)~~(h)(2)(B)(i) and ~~(h)(2)(B)(ii)~~ are met at the time an SCAQMD pPermit to eConstruct is issued by the District, and substantial use of the SCAQMD pPermit to eConstruct takes place occurs before any zoning change ~~occurs~~ that affects the operation's ability to meet the requirement at the time of initial start-up.

~~(C)(D)~~ Prior to initial start-up, the owner or operator of a new facility shall demonstrate to the District that the new facility meets the requirements specified in paragraph ~~(e)(13)(h)(2)~~.

(h) ~~(14)~~ 3) Decorative Chromium Electroplating Tanks Using a Trivalent Chromium Bath

~~(A)~~ During tank operation, the owner or operator of a facility shall control chromium emissions discharged to the atmosphere by meeting one or more of the requirements identified below.

Method of compliance	Requirement
Add-on air pollution control device, or chemical fume suppressants forming a foam blanket, or mechanical fume suppressants (i.e. <u>e.g.</u> polyballs)	≤ 0.01 milligrams <u>of total chromium per dry standard cubic meter of air (mg/dscm) (4.4x10-6 gr/dscf) as demonstrated with an initial source test using an approved method pursuant to paragraph (k)(2)</u>
Certified e Chemical fume suppressants containing a wetting agent <u>that is not a PFOS based fume suppressant</u>	Use wetting agent as bath component and comply with recordkeeping and reporting provisions of paragraphs (j)(9)(o)(10) and (k)(p)(5) .

~~(B)~~ New facilities that perform electroplating using a trivalent chromium bath shall conduct a facility wide screening health risk assessment for all toxic air contaminant emissions which shall be submitted to the District when filing applications for Permit to Construct/Operate the new equipment. The screening health risk assessment shall be conducted in accordance with the most current version of the District's "Risk Assessment Procedures of Rules 1401 and 212" or *OEHHA Guidelines*.

(15) ~~Permit Application Submittals~~

~~(A) The owner or operator of a hexavalent chromium electroplating or chromic acid anodizing facility subject to this rule, that either does not have a permitted annual ampere-hour limit, or is requesting a reduction of an existing ampere-hour limit, shall submit an application for administrative change of operating condition subject to fees specified in Rule 301. The application shall be submitted to the District no later than February 24, 2009.~~

~~(B) The owner or operator of an existing hexavalent chromium electroplating or chromic acid anodizing facility shall submit permit applications for all new or modified equipment necessary to comply with the requirements of Table 2 of paragraph (c)(11). Permit applications shall be submitted to the District no later than 8 months prior to the applicable effective date of Table 2.~~

(h) (4) Tier III Hexavalent Chromium Tanks (Excluding Chromium Electroplating and Chromic Acid Anodizing Tanks)

(A) The owner or operator of a facility shall collect and vent hexavalent chromium emissions from any Tier III Hexavalent Chromium Tank, excluding chromium electroplating and chromic acid anodizing tanks subject to paragraph (h)(2), to an add-on air pollution control device, or an approved alternative compliance method pursuant to subdivision (i), that meets the following hexavalent chromium emission limits as demonstrated by source test requirements under subdivision (k):

(i) 0.0015 mg/amp-hr, for existing or modified facilities, if any tank(s) vented to an air pollution control device are electrolytic;

(ii) 0.0011 mg/amp-hr, for new facilities, if any tank(s) vented to an air pollution control device are electrolytic;

(iii) 0.20 mg/hr, if all tanks vented to the add-on air pollution control device are not electrolytic and the ventilation system has a maximum exhaust rate of 5,000 cfm or less; or

(iv) 0.004 mg/hr-ft², with the applicable surface area based on the surface area of all Tier III Hexavalent Chromium Tank(s) and other tanks required to be vented to an add-on air pollution control device with a SCAQMD Permit to

Operate, provided all tanks are not electrolytic, if the ventilation system has a maximum exhaust rate of greater than 5,000 cfm.

- (B) For Tier III Hexavalent Chromium Tanks specified in subparagraph (h)(4)(A) existing prior to [Date of Rule Adoption], the owner or operator of a facility shall submit complete SCAQMD permit applications for add-on air pollution control devices to the Executive Officer as specified below:

Table 2: Permit Submittal Schedule for Add-on Air Pollution Control Devices for Previously Existing Tier III Hexavalent Chromium Tanks¹

<u>Electrolytic Process at the Facility</u>	<u>Compliance Date for SCAQMD Permit Application Submittal for Add-on Air Pollution Control Device</u>
<u>Chromic Acid Anodizing</u>	<u>[180 Days after Date of Rule Adoption]</u>
<u>Hard Chromium Electroplating</u>	<u>[365 Days after Date of Rule Adoption]</u>
<u>Decorative Chromium Electroplating</u>	<u>[545 Days after Date of Rule Adoption]</u>

¹ For multiple electrolytic processes at a facility, the owner or operator shall comply with the earliest compliance date.

- (i) The owner or operator of a facility shall conduct a source test prior to the issuance of a SCAQMD Permit to Operate.
- (ii) Beginning no later than [30 days after Date of Rule Adoption] until the add-on air pollution control device specified in subparagraph (h)(4)(C) has been installed, cover the tank no later than 30 minutes after ceasing operation of the tank. Tank covers shall be free of holes, tears, and gaps.

- (C) The owner or operator of a facility shall:
- (i) Install an add-on air pollution control device to meet the requirements under subparagraph (h)(4)(A) no later than 12 months after a Permit to Construct for the add-on air pollution control device has been issued by the Executive Officer;
 - (ii) Implement the alternative compliance method to meet the requirements under subparagraph (h)(4)(A) based on the

timeframe specified in the approved alternative compliance method; or

(iii) No later than two years after approval, implement an approved Hexavalent Chromium Phase-Out Plan pursuant to subdivision (u).

(D) The owner or operator of a facility shall not be subject to the requirement of subparagraph (h)(4)(A) to vent a Tier III Hexavalent Chromium Tank to an add-on air pollution control device if the uncontrolled hexavalent chromium emission rate of the tank is less than 0.2 mg/hr, as demonstrated by a SCAQMD approved source test. The source test shall be conducted pursuant to the Technical Guidance Document for *Measurement of Hexavalent Chromium Emissions from Chromium Plating and Chromic Acid Anodizing Operations for Certification of Wetting Agent Chemical Mist Suppressant Subject to SCAQMD Rule 1469.*

(h) (5) Tier II Hexavalent Chromium Tank

The owner or operator of a facility shall control hexavalent chromium emissions from a Tier II Hexavalent Chromium Tank by:

(A) Utilizing a tank cover, mechanical fume suppressant, or other method approved by the Executive Officer, no later than [90 Days from Date of Adoption]; or

(B) Meeting the requirements for a Tier III Hexavalent Chromium Tank specified in subparagraphs (h)(4)(A) and (h)(4)(B).

(h) (6) Ventilation Design and Operation of Air Pollution Control Techniques

The owner or operator of a facility shall operate air pollution control techniques required under subdivisions (h) at or above the applicable minimum hood induced capture velocity specified in the most current edition (i.e., at the time the SCAQMD permit application was deemed complete by SCAQMD) of *Industrial Ventilation, A Manual of Recommended Practice for Design*, published by the American Conference of Governmental Industrial Hygienists.

~~(d) Alternative Compliance Options and Methods~~

~~(1) Alternative Interim Compliance Options — Inventory and Health Risk Assessment~~

~~In lieu of complying with the interim requirements of paragraphs (c)(8), (c)(9), or (c)(10) an owner/operator may elect to submit an inventory and health risk assessment prepared pursuant to Rule 1402—Control of Toxic Air Contaminants from Existing Sources, subdivisions (n) [Emissions Inventory Requirements] and (j) [Risk Assessment Procedures].~~

- (A) ~~Health risk assessments approved by the Executive Officer prior to May 2, 2003, shall demonstrate that facility wide emissions of all toxic air compounds result in a cancer risk of:~~
- ~~(i) Less than 25 in a million for facilities located more than 25 meters from a licensed daycare center, hospital, convalescent home, or a residence, and located more than 100 meters from an existing, as of May 2, 2003, school (kindergarten through grade 12).~~
 - ~~(ii) Less than 10 in a million for facilities located 25 meters or less from a licensed daycare center, hospital, convalescent home, or a residence, or located 100 meters or less from an existing, as of May 2, 2003, school (kindergarten through grade 12).~~
- (B) ~~Health risk assessments not approved by the Executive Officer prior to May 2, 2003, shall demonstrate that facility wide emissions of all toxic compounds with existing controls result in a cancer risk of those specified in (d)(1)(A)(i) or (d)(1)(A)(ii) at their respective receptor distances.~~
- ~~(i) The inventory and health risk assessment shall be submitted by January 1, 2004.~~
 - ~~(ii) After review, the Executive Officer will notify the facility in writing whether a health risk assessment conducted pursuant to this paragraph is approved or disapproved.~~
 - ~~(iii) If a health risk assessment conducted pursuant to this paragraph is disapproved, or if the approved cancer risk exceeds those specified in (d)(1)(A)(i) or (d)(1)(A)(ii) at their respective receptor distances, the facility shall comply with the applicable interim requirements of (c)(8), (c)(9), or (c)(10) no later than one year after notification by the District. Within 60 days from the date of disapproval, the owner or operator shall begin use of a wetting agent~~

chemical fume suppressant certified pursuant to subdivision (f).

- (C) ~~The owner or operator of a facility subject to subparagraph (d)(1)(A) or (d)(1)(B) shall comply with enforceable conditions to ensure that controls result in a cancer risk of those specified in (d)(1)(A)(i) or (d)(1)(A)(ii) at their respective receptor distances.~~
 - (D) ~~If a health risk assessment, approved under this paragraph as demonstrating a cancer risk of those specified in (d)(1)(A)(i) or (d)(1)(A)(ii) at their respective receptor distances, is subsequently determined to demonstrate actual cancer risks exceeding 25 in a million or 10 in a million, as applicable, the health risk assessment will be disapproved and the owner or operator of the facility shall comply with the specific applicable interim requirements of (c)(8), (c)(9), or (c)(10) no later than one year after notification of disapproval by the District. Within 60 days from the date of notification, the owner or operator shall begin use of a wetting agent chemical fume suppressant certified pursuant to subdivision (f).~~
- (2) ~~Alternative Interim Compliance Options — Emission Reduction Plan~~
- (A) ~~In lieu of complying with the specific interim requirements of paragraph (c)(8), the owner or operator of a facility located 25 meters or less from a licensed daycare center, hospital, convalescent home, or a residence, or located 100 meters or less from an existing, as of May 2, 2003, school (kindergarten through grade 12) may elect to submit an Emission Reduction Plan identifying potential emission reduction strategies on or before May 1, 2004. The plan shall demonstrate that facility-wide hexavalent chromium emissions result in a cancer risk of ≤ 10 in a million and shall include, but is not limited to, the following areas:~~
 - (i) ~~pollution prevention;~~
 - (ii) ~~voluntary, enforceable reduction in ampere-hour limits; and~~
 - (iii) ~~installation of add-on control.~~
 - (B) ~~Following Executive Officer approval, the owner or operator of a facility that elects to implement an Emissions Reduction Plan shall do the following:~~

- (i) ~~submit all necessary permit applications within 90 days of plan approval; and~~
 - (ii) ~~install necessary control equipment within 15 months from the date of plan approval; and~~
 - (iii) ~~conduct any performance test required for compliance with a permit condition or a compliance plan condition pursuant to subdivision (e).~~
- (3) ~~Alternative Interim Compliance Options — Maximum Installed Controls Effective May 1, 2005, in lieu of complying with the interim requirements of paragraphs (c)(8), (c)(9), or (c)(10) the owner or operator shall use HEPA or an equivalent air pollution control technique and use a wetting agent chemical fume suppressant, certified under subdivision (f), and comply with all applicable permit conditions and approved Compliance Plan conditions.~~
- (4) ~~Alternative Interim Compliance Options — Facility-wide Mass Emission Rate~~
- (A) ~~As an alternative to complying with the interim emission limitation requirements of paragraph (c)(9), the owner or operator of a facility that is located more than 25 meters from a licensed daycare center, hospital, convalescent home, or a residence, and located more than 100 meters from an existing, as of May 2, 2003, school (kindergarten through grade 12) shall provide calculations in the Compliance Plan to demonstrate that facility-wide emissions of hexavalent chromium do not exceed the threshold in Table 3 for the appropriate facility operating scenario and regular operating schedule, or the applicable distance-adjusted annual emission level as specified in Appendix 7.~~

Table 3
Annual Emission Thresholds for Facilities Located More than 25 Meters from a Licensed Daycare Center, Hospital, Convalescent Home, or a Residence

Operating Scenario	Regular Operating Schedule	Annual Emission Threshold
Vented to Air Pollution Control Device	12 hours per day or less	0.036 lbs/yr
Vented to Air Pollution Control Device	More than 12 hours per day	0.04 lbs/yr
Not Vented to Air Pollution Control Device	Any	0.025 lbs/yr

- ~~(B) The owner or operator of a facility complying with this paragraph shall use the Hexavalent Chromium Source Test Parameter Guidance Document to establish testing parameters.~~
- ~~(C) The owner or operator of a facility complying with this paragraph shall update the facility wide emissions calculations every year using process information from the preceding twelve months, and shall provide such calculations upon request.~~
- (5) ~~Alternative Interim Compliance Options—Alternative Standards for Existing Hexavalent Chromium Electroplating and Chromic Acid Anodizing Facilities with Low Annual Ampere Hour Usage~~
 - ~~(A) Until the emission limits of paragraph (c)(11) become effective, the Executive Officer may approve a Compliance Plan specifying interim alternative standards for facilities with actual consumption of electrical current less than or equal to 365,000 ampere-hours for any calendar year. For hard chromium electroplating facilities constructed on or before December 16, 1993, the Executive Officer, with U.S. EPA concurrence shall approve this plan if equivalent results are obtained. Upon approval, the requirements identified in the plan shall be the applicable requirements under this regulation.~~
 - ~~(B) At a minimum, the hexavalent chromium electroplating or chromic acid anodizing tank shall use chemical fume suppressants containing a wetting agent to lower the surface tension of the electroplating bath to no more than 45 dynes per centimeter (dynes/cm) (3.1×10^{-3} pound-force per foot [lbF/ft]), or the surface tension established during testing of a certified fume suppressant under subdivision (f).~~
 - ~~(C) Upon approval of a facility's Compliance Plan, the Executive Officer may require additional emission reduction techniques as necessary to reduce the public health impact of emissions from the operation.~~
 - ~~(D) The owner or operator shall comply with the applicable monitoring [subdivision (g)], recordkeeping [subdivision (j)], and reporting [subdivision (k)] requirements.~~
 - ~~(E) If the facility is located 25 meters or less from a licensed daycare center, hospital, convalescent home, or a residence, or located 100 meters or less from an existing, as of May 2, 2003, school~~

~~(kindergarten through grade 12), and actual consumption of electrical current exceeds 500,000 ampere hours per year after May 2, 2003, the owner or operator shall use HEPA or an equivalent air pollution control technique and use a wetting agent chemical fume suppressant certified under subdivision (f), on all hexavalent chromium electroplating and chromic acid anodizing tanks. An application for a permit to construct the control equipment shall be filed within 90 days of the date of the approved Notice of Violation for the ampere hour threshold exceedance and the control equipment shall be installed within 15 months from the date of the approved Notice of Violation for the ampere-hour threshold exceedance.~~

~~(F) Emission-Related Exceedance~~

~~(i) Effective November 1, 2003, the owner or operator of a facility subject to paragraph (d)(5) located 25 meters or less from a licensed daycare center, hospital, convalescent home, or a residence, or located 100 meters or less from an existing, as of May 2, 2003, school (kindergarten through grade 12) that is using a wetting agent chemical fume suppressant with no associated add-on air pollution control device(s) will begin to accrue notices of violation for emission-related exceedances specified under (d)(5)(F)(ii). The owner or operator of a facility who accrues three or more approved notices of violation for an emission-related exceedance within a five year period shall comply with the emission limitation specified in subparagraph (c)(8)(A) by installing a ventilation system and HEPA controls, or equivalent controls, on all hexavalent chromium electroplating and chromic acid anodizing tanks.~~

~~An application for a permit to construct the control equipment shall be filed within 90 days of the date of the third approved notice of violation and the control equipment shall be installed within 15 months from the date of the third approved notice of violation.~~

~~(ii) An emission-related exceedance, for the purpose of this rule, is defined as:~~

- ~~(I) exceeding the applicable surface tension limit established under subdivision (f) or subparagraph (d)(5)(B) for a wetting agent chemical fume suppressant; or~~
- ~~(II) exceeding the ampere hour limit specified in subparagraph (d)(5)(A) by 135,000 ampere hours per year, or less, or exceeding the ampere hour limit in an approved Compliance Plan condition for any calendar year; or~~
- ~~(III) exceeding the chromic acid weight concentration limit specified in any permit issued after May 2, 2003; or~~
- ~~(IV) a missing stalagmometer, tensiometer, or ampere-hour meter or a broken or inoperable stalagmometer, tensiometer, or ampere-hour meter unless:
 - ~~(a) it is repaired or replaced within one week after its breakdown; or~~
 - ~~(b) the tank or tanks served by the device are removed from service until the device has been repaired or replaced; or~~
 - ~~(c) the owner can provide proof of ordering a new device within 7 days after the device became broken or inoperable, and the device is replaced within 14 days after it became broken or inoperable.~~~~
- ~~(iii) For the purpose of counting notices of violations which may trigger the installation of controls pursuant to this subparagraph, a notice of violation shall be counted as a single emission-related exceedance even if it cites multiple emission-related exceedances as defined in subparagraph (d)(5)(F), provided that the multiple emission-related exceedances are based on a single field inspection conducted in one day.~~
- ~~(iv) The provisions of subparagraph (d)(5)(F) shall apply to an owner or operator of a facility within any five year time period.~~

~~(v) The provisions of this paragraph shall in no way limit the evaluation or prosecution by the District of any notices of violation or any emissions related exceedances contained therein.~~

~~(6)(i~~ Alternative Compliance Methods for Existing, Modified, and New ~~New, Modified~~
~~)~~ ~~and Existing~~ Hexavalent Decorative and Hard Chromium Electroplating and Chromic Acid Anodizing Facilities

The owner or operator of a facility ~~may that elects to submit to the District an~~ alternative compliance method(s) to meet the emission limits specified in paragraphs (h)(2) and (h)(4) to subparagraphs (e)(11)(A) for existing facilities, clause (e)(12)(A)(i) for modified facilities, and clause (e)(13)(A)(iii) for new facilities. In order to operate under this paragraph, the owner or operator shall:

- ~~(i) (A)(~~ Submit an SCAQMD permit application that includes the information
 - 1) contained in Appendix 8-7 to the Executive Officer; and-
 - ~~(i) (B)(~~ Demonstrate that the alternative method(s) is enforceable, provides an equal,
 - 2) or greater hexavalent chromium emission reduction, and provides an equal, or greater risk reduction than would direct compliance with the emission limits requirements of specified in paragraphs (e)(11)(A)(h)(2) and (h)(4) for existing facilities, (e)(12)(A)(i) for modified facilities, and (e)(13)(A)(iii) for new facilities.
- ~~(C)~~ Implement alternative method(s), upon approval by the Executive Officer, within the applicable compliance dates of Table 2 of (e)(11)(A) for existing facilities and prior to initial start-up for new or modified facilities.

~~(j)~~ Training and Certification

- ~~(j)~~ (1) Chromium electroplating and chromic acid anodizing personnel responsible for environmental compliance, maintaining electroplating bath chemistries, and testing and recording electroplating bath surface tension data shall complete a SCAQMD approved training program every two years and receive a certification issued by the Executive Officer. For new facilities, initial training must be completed within a period not to exceed two years from start-up.
- ~~(j)~~ (2) Only persons who have completed a SCAQMD approved training program and have received a certification issued by the Executive Officer shall be responsible for recordkeeping associated with environmental compliance.

maintaining electroplating bath chemistries, and testing and recording electroplating bath surface tension data.

- (j) (3) Notwithstanding paragraph (j)(2), in the event that all persons who have completed a SCAQMD approved training program and received a certification issued by the Executive Officer leaves employment at a facility, the owner or operator of a facility may be responsible for recordkeeping associated with environmental compliance, maintaining electroplating bath chemistries, and testing and recording electroplating bath surface tension data for a period not to exceed two years.

(ek) Performance-Source Test Requirements and Test Methods

(k) (1) Performance-Source Test Requirements

(A) The owner or operator of an existing a facility using add-on air pollution control device(s), foam blanket chemical fume suppressants, or mechanical fume suppressants to comply with the requirements of paragraphs (e)(8) through (e)(11), (d)(5), or any source electing to comply with the mg/dsem emission standard in paragraph (e)(14) required to meet an emission limit pursuant to paragraphs (h)(2) or (h)(4) shall conduct an performanceinitial source test and subsequent source tests pursuant to the schedule specified in Table 3 – Source Tests Schedule. to demonstrate compliance with the applicable emission standards within 180 days after initial startup or before the applicable effective date listed in Table 2 of paragraph (e)(11), whichever is sooner. New or modified facilities complying with the requirements of paragraphs (e)(12) and (e)(13) shall conduct a performance test within 60 days after initial start-up.

Table 3: Source Tests Schedule

<u>Facility-wide Permitted Annual Ampere-Hours</u>	<u>Due Date of Initial Source Test Protocol^a</u>	<u>Initial Source Test Date</u>	<u>Due Date of Subsequent Source Test Protocol</u>	<u>Subsequent Source Tests</u>
<u>> 20,000,000</u>	<u>No later than [180 Days After Date of Rule Adoption]</u>	<u>No later than 120 days after approval of the initial source test protocol.</u>	<u>180 days prior to the due date of the subsequent source test.</u>	<u>No later than 60 months from the day of the most recent source test that demonstrates compliance with all applicable requirements</u>
<u>< 20,000,000 and > 1,000,000</u>	<u>No later than [365 Days After Date of Rule Adoption]</u>			

<p><u>< 1,000,000</u></p>	<p><u>No later than [545 Days After Date of Rule Adoption]</u></p>			<p><u>No later than 84 months from the day of the most recent source test that demonstrates compliance with all applicable requirements</u></p>
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^a New or modified air pollution control techniques used to meet the emission limits under paragraphs (h)(1), (h)(2), or (h)(4) permitted after [Date of Adoption], shall submit the initial source test protocol 60 days after initial start-up of the air pollution control technique.

- (B) The owner or operator of a facility may conduct the initial source test after the 120 days specified in Table 3 – Source Tests Schedule, provided:
 - (i) A written request 30 days before the due date of the source test is submitted to the Executive Officer;
 - (ii) The additional time needed is substantiated by reason(s) outside of their control; and
 - (iii) The Executive Officer approves the request in writing no later than the due date of the source test.
- (C) The owner or operator of a facility may use an existing source test conducted after January 1, 2015 to demonstrate compliance with the initial source test requirements of subparagraph (k)(1)(A), provided:
 - (i) The applicable emission limits in subdivision (h) are demonstrated;
 - (ii) The operating conditions during the source test are representative of the operating conditions as of [Date of Rule Adoption]; and
 - (iii) Test methods specified in paragraph (k)(2) are used.
- (D) No later than [30 days after Date of Rule Adoption], an owner or operator of a facility using a source test pursuant to subparagraph (k)(1)(C) that has not been approved, shall submit the source test to the Executive Officer for approval.
- (E) An owner or operator of a facility that elects to use an existing source test pursuant to subparagraph (k)(1)(C), shall conduct the first subsequent source test no later than January 1, 2024 and conduct all other subsequent source tests pursuant to schedule in Table 3 - Source Tests Schedule.
- (F) An owner or operator of facility that elects to meet an emission limit

specified in paragraph (h)(2) using only a certified wetting agent chemical fume suppressant or a certified alternative to a wetting agent air pollution control techniquechemical fume suppressant shall not be subject to the requirements of subparagraph (k)(1)(A).

~~(2)~~ Use of Existing Performance Test

~~(A) A performance test conducted prior to July 24, 1997 may be used to demonstrate compliance with applicable interim emission standards specified in (e)(8), (e)(9), (e)(10), and (d)(5), or the mg/dscm emission standard in (e)(14) provided the existing source test is approved by the Executive Officer.~~

~~(B) A performance test conducted after January 1, 2000 may be used to demonstrate compliance with emission standards of paragraph (e)(11) or (e)(14) upon District approval. The owner or operator of the facility shall submit the subject performance test to the District's Compliance Division by February 24, 2009 for evaluation, and shall meet, at a minimum, the following criteria:~~

- ~~(i) The test demonstrated compliance with the applicable emission limits of paragraph (e)(11) or (e)(14); and~~
- ~~(ii) The test is representative of the method to control emissions currently in use as of December 5, 2008; and~~
- ~~(iii) The test was conducted using one of the approved test methods specified in paragraph (e)(3).~~

(k) ~~(32)~~ Approved Test Methods

~~(A) Emissions testing shall be conducted in accordance with one of the following test methods:~~

- ~~(i) CARB Test Method 425, last amended July 28, 1997, (section 94135, Title 17, California Code of Regulations (CCR)); or~~
- ~~(ii) U.S. EPA Method 306, (40 CFR 63 Appendix A) with a minimum of three test runs; or~~
- ~~(iii) SCAQMD Method 205.1, for results reported as total chromium.~~

~~(B) Emissions testing from the cover of electroplating and anodizing tanks~~for add-on non-ventilated air pollution control devices shall be conducted in accordance with a Smoke Test for Add-on Non-Ventilated Air Pollution Control Device(s) to Verify the Seal

~~Integrity of Covers Designed to Reduce Chromium Emissions from Electroplating and Anodizing Tanks~~ procedures (See Appendix 5).

- (C) Surface tension using a tensiometer shall be measured in accordance with U.S. EPA Method 306B (40 CFR 63 Appendix A). Surface tension using a stalagmometer shall be measured using the procedure set forth in Appendix 409, or an alternative procedure approved by the ~~District~~ Executive Officer.
- (k) (3) Use of Emissions Screening Tests
- (A) The owner or operator of a facility that elects to use an emissions screening test in lieu of a source test to comply with the subsequent source test requirements in Table 3 - Source Tests Schedule shall conduct an emissions screening test:
- (i) Consisting of one run to evaluate the hexavalent chromium emissions for a Tier II or Tier III Hexavalent Chromium Tank;
- (ii) In accordance with a source test protocol approved by the Executive Officer; and
- (iii) Representative of the operating conditions during the most recent source test.
- (B) The owner or operator of a facility may conduct an emissions screening test in lieu of a source test to comply with the requirements for an initial source test in Table 3 — Source Tests Schedule provided:
- (i) The emissions screening test meets the requirements of clauses (k)(3)(A)(i) through (iii);
- (ii) The owner or operator of a facility conducted a source test after January 1, 2009 that meets the requirements of clauses (k)(1)(C)(i) through (iii); and
- (iii) No later than [30 days after Date of Rule Adoption], an owner or operator of a facility using a source test that is not approved to satisfy clause (k)(3)(B)(ii) shall submit the source test to the Executive Officer for approval.
- (C) Within 30 days of receiving the results, the owner or operator of a facility shall submit the results of the emissions screening test to the Executive Officer.

- (D) The owner or operator of a facility shall conduct a source test using an approved test method specified under paragraph (k)(2) within 60 days of conducting an emissions screening test that:
- (i) Failed the capture efficiency test(s) specified in the source test protocol;
- (ii) Exceeded an emission limit specified in the SCAQMD Permit to Operate; or
- (iii) Exceeded an emission standard specified in subdivision (h).
- (k) (4) Pre-Test~~Source Test~~ Protocol
- ~~(A)~~ ~~Facilities subject to the provisions of paragraph (e)(1), above, that are either installing new equipment or modifying existing equipment, shall submit a pre-test protocol at least 60 days prior to conducting a performance test. Facilities that are conducting a performance test for existing equipment that require no modification, shall submit a pre-test protocol to the District's Compliance Division no later than 8 months prior to the applicable effective date of Table 2 of paragraph (e)(11).~~
- ~~(B)~~(A) The pre-test~~source test~~ protocol shall include the ~~performance~~source test criteriaof the end-user and, all assumptions, required data, and calculated targets for testing the following:
- ~~(i)~~ ~~Target~~Target chromium concentration;
- ~~(ii)~~ ~~Preliminary~~Preliminary chromium analytical data; and
- ~~(iii)~~ ~~Planned~~Planned sampling parameters.
- ~~(C)~~ ~~In addition, the pre-test protocol shall include information on equipment, logistics, personnel, and other resources necessary for an efficient and coordinated test.~~
- ~~(D)~~(B) The most recent SCAQMD approved source test protocol may be used for subsequent source tests, provided there are no changes to the tank dimensions, collection slots, ventilation flow rate, sampling location(s), sampling method, or analytic method(s).
- (k) (5) Emission Points Test Requirements
- Each emission point subject to the requirements of this rule shall be tested unless a waiver is granted by U.S. EPA and approved by the Executive Officer.
- ~~(6)~~ ~~For any interim alternative compliance option in subdivision (d) that requires the results of a performance test to demonstrate facility-wide emissions or~~

~~cancer risk, or any facility operating under an alternative compliance method pursuant to paragraph (d)(6), the owner or operator shall submit a performance test conducted pursuant to subdivision (e).~~

(k) ~~(7)~~ Capture Efficiency

~~(A)~~

6)

The owner or operator of a facility that is required to conduct a source test pursuant to subdivision (k) shall using an add-on air pollution control device to comply with the requirements of paragraphs (e)(8) through (e)(13), (d)(5), (d)(6), or any source electing to comply with the mg/dscem emission standard in paragraph (e)(14), shall that all emissions are captured by using a quantitative measurement approved by the District. The demonstration shall be made during any performance test specified in paragraph (e)(1) conducted after December 5, 2008. An example of an approved quantitative measurement is demonstrating that the capture system meets the design criteria and ventilation velocities specified in the American Conference of Governmental Hygienists Industrial Ventilation, A Manual of Recommended Practice. demonstrate that each add on-air pollution control device meets the design criteria and ventilation velocities specified in *A Manual of Recommended Practice for Design* authored by the American Conference of Governmental Industrial Hygienists or alternative design criteria and ventilation velocities approved by the Executive Officer.

(k) ~~(B)~~ 7) Smoke Test

7)

The owner or operator of a facility ~~subject to (e)(7)(A) shall periodically conduct a smoke test in order to demonstrate continuous compliance with the capture efficiency of the ventilation system air pollution control device or add-on non-ventilated air pollution control device. The test shall be :~~ shall conduct an acceptable smoke test for each add-on air pollution control device pursuant to Appendix 5 and each add-on non-ventilated air pollution control device pursuant to Appendix 8.

- ~~(i) Conducted using the method described in Appendix 9, or any other method deemed acceptable by the Executive Officer;~~

~~(ii)~~ Conducted initially upon start-up for new and modified facilities, and within 60 days of the effective date of this rule for existing facilities; and

~~(iii)~~ Conducted periodically by the facility at least once every six months of a previously conducted test.

~~(C)~~ The owner or operator of a ventilation system that demonstrates non-compliance with any smoke test shall immediately shutdown, upon discovery, all electroplating or anodizing lines associated with such ventilation systems until a smoke test demonstrating full compliance with subparagraph (e)(7)(B) is achieved.

~~(f)~~(1) Certification and Approval of Wetting Agent Chemical Fume Suppressants

~~(1)~~ Any wetting agent chemical fume suppressant used to comply with the requirements of this rule shall be certified by the Executive Officer as able to reduce or suppress hexavalent chromium emissions at the surface of an electroplating or anodizing bath through the reduction of surface tension of the bath to a level at which an emission factor below 0.01 milligrams per ampere hour is achieved. Wetting agent chemical fume suppressants shall meet, at a minimum, a surface tension below 45 dynes/cm, as measured by a stalagmometer, or below 35 dynes/cm, as measured by a tensiometer, unless an alternative is approved pursuant to subdivision (m). The Executive Officer will publish and periodically update a list of certified chemical fume suppressants.

(1) (1) The owner or operator of a facility shall not add PFOS based chemical fume suppressants to any chromium electroplating or chromic acid anodizing bath.

(1) (2) The owner or operator of a facility that elects to use a wetting agent chemical fume suppressant to comply with the requirements of this rule shall only use a wetting agent chemical fume suppressant(s) that:

(A) Reduces or suppresses hexavalent chromium emissions at the surface of an electroplating or anodizing bath to meet an emission factor below 0.01 milligrams per ampere hour,

(B) Meets a surface tension below 40 dynes/cm, as measured by a stalagmometer, or below 33 dynes/cm, as measured by a tensiometer, unless an alternative is approved pursuant to subdivision (q), and

- (C) Has been certified by the Executive Officer based on a certification process conducted by SCAQMD and CARB.
 - (1) (3) The owner or operator of a facility shall use a certified wetting agent chemical fume suppressant in accordance with the certification and applicable manufacturer's specifications.
 - (1) (4) No later than January 1, 2020, the owner or operator of a facility shall be notified by the Executive Officer the status of:
 - (A) Any wetting agent chemical fume suppressant available on and after July 1, 2021 that meets the requirements specified in paragraphs (1)(2); and
 - (B) Any potential wetting agent chemical fume suppressant going through the certification process conducted by SCAQMD and CARB.
 - (1) (5) If a wetting agent chemical fume suppressant will not be available by July 1, 2021, the owner or operator of a facility shall only add a wetting agent chemical fume suppressant to a chromium electroplating or chromic acid anodizing tank based on the information in the notice as specified by paragraph (1)(4) and:
 - (A) On or before July 1, 2021, meet the hexavalent chromium emission limit specified in Table 1 – Hexavalent Chromium Emission Limits for Hard and Decorative Chromium Electroplating and Chromic Acid Anodizing Tanks;
 - (B) On or before July 1, 2022, phase-out the use of hexavalent chromium in the chromium electroplating or chromic acid anodizing tanks that use a wetting agent chemical fume suppressant that meets the requirements of paragraph (1)(6); or
 - (C) On or before July 1, 2021 implement an alternative to a wetting agent chemical fume suppressant that meets the requirements of paragraph (1)(7).
 - (1) (6) The owner or operator of a facility that elects to meet the requirements of paragraph (1)(5) by phasing out the use of hexavalent chromium in a chromium electroplating or chromic acid anodizing tank shall:
 - (i) No later than January 1, 2021, submit a written and signed commitment to the Executive Officer stating that the facility will phase out by July 1, 2022, the use of hexavalent chromium in the

- electroplating or chromic acid anodizing tank(s) that use a wetting agent chemical fume suppressant.
- (ii) No later than July 1, 2022 cease operating and surrender SCAQMD permits to operate the chromium electroplating or chromic acid anodizing tank(s) that use a wetting agent chemical fume suppressant.
- (l) (7) The owner or operator of a facility that elects to meet the requirements of paragraph (l)(5) by implementing an alternative to a wetting agent chemical fume suppressant, shall submit a permit application for the chromium electroplating or chromic acid anodizing tank(s) that includes the alternative and any conditions specified in the approval of the alternative in paragraph (l)(8).
- (l) (8) The alternative to a wetting agent chemical fume suppressant specified in paragraph (l)(7) shall:
- (A) Meet an emission limit that is equally effective as the emission limit required for a wetting agent chemical fume suppressant specified in subparagraph (l)(2)(A);
- (B) Be approved by the Executive Officer in consultation with CARB to meet the requirement specified in subparagraph (l)(2)(A); and
- (C) Be used by the owner or operator in accordance with the approval specified in subparagraph (l)(8)(B).
- (l) (9) An owner or operator of a facility that fails to phase out the use of hexavalent chromium by July 1, 2022 pursuant to paragraph (l)(6) will be required to cease operation of the electroplating or chromic acid anodizing tank that contains hexavalent chromium until the facility can meet the emission limits specified in paragraph (h)(2) for the subject tank.

(gm) Parameter Monitoring

(m) (1) Add-On Air Pollution Control Device(s) and Add-On Non Ventilated Air Pollution Control Device(s)

(A) Pressure Drop

~~The owner or operator shall continuously monitor the pressure drop across an add-on air pollution control device such as a composite mesh pad (CMP), packed bed scrubber (PBS), a CMP/PBS, fiber bed mist eliminator, and a High Efficiency Particulate Arrestors (HEPA) filter with a mechanical gauge. The gauge shall be located~~

~~so that it can be easily visible and in clear sight of the operation or maintenance personnel. The pressure drop shall be maintained within ± 1 inch of water of the value established during the performance test to demonstrate compliance with the emission limitation for CMP, PBS, a CMP/PBS, and a fiber bed mist eliminator. The pressure drop shall be maintained within $\pm 1/2$ times to ± 2 times the inches of water of the value established during the performance test to demonstrate compliance with the emission limitation for HEPA filters.~~

~~(B)~~(A) Inlet Velocity Pressure and Air Flow

~~The owner or operator of a facility shall continuously monitor the operation of the add-on air pollution control device by: continuously monitor the inlet velocity pressure of a packed bed scrubber with a mechanical gauge. The gauge shall be located so that it is easily visible and in clear sight of the operation or maintenance personnel. The inlet velocity pressure shall be maintained within ± 10 percent of the value established during the performance test to demonstrate compliance with the emission limitation.~~

- ~~(i) Installing and maintaining a device to measure the applicable pressures and air flows specified in Table 4 — Pressure and Air Flow Measurement Parameters;~~
- ~~(ii) Installing each device so that it is accessible and in clear sight of the operation or maintenance personnel;~~
- ~~(iii) Maintaining all parameters identified in Table 4 — Pressure and Air Flow Measurement Parameters within the range specified in the facility's SCAQMD Permit to Operate;~~
- ~~(iv) Labeling each mechanical gauge with the corresponding acceptable operating ranges established during the most recent source test and within the range specified in the SCAQMD Permit to Operate; and~~
- ~~(v) Maintaining the mechanical gauges in accordance to the requirements in Appendix 4.~~

Table 4:
Pressure and Air Flow Measurement Parameters

<u>Permitted Air Pollution Control Technique</u>	<u>Location</u>	<u>Parameter Monitored</u>	<u>Units</u>	<u>Monitoring Start Date</u>
<u>Push-Pull Systems</u>	<u>Push Manifold</u>	<u>Static Pressure</u>	<u>Inches of water</u>	<u>60 Days After Completion of Initial Source Test or within [60 Days of Date of Rule Adoption]</u>
<u>All</u>	<u>Collection Manifold or Any Location within the System Using a Flow Meter</u>	<u>Static Pressure or Volumetric Flow Rate</u>	<u>Inches of water or Actual Cubic Feet per Minute</u>	<u>60 Days After Completion of Initial Source Test or within [60 Days of Date of Rule Adoption]</u>
<u>Existing on or Before [Date of Rule Adoption]</u>	<u>Across Each Stage of the Control Device</u>	<u>Differential Pressure</u>	<u>Inches of water</u>	<u>[Date of Rule Adoption]</u>
<u>Installed after [Date of Rule Adoption]</u>	<u>Across Each Stage of the Control Device</u>	<u>Differential Pressure</u>	<u>Inches of water</u>	<u>60 Days After Completion of Initial Source Test</u>

(B) Velocity of Collection Slots

Beginning 60 days after the completion of the initial source test required in Table 3 – Source Tests Schedule and at least once every 180 days thereafter, the owner or operator of a facility shall demonstrate that emissions are captured by the add-on air pollution control device that meets the requirements in Table 5 – Add-on Air Pollution Control Device Parameter Monitoring using any of the following:

- (i) A hot-wire anemometer;
- (ii) A vane anemometer; or
- (iii) A device or method approved by the Executive Officer.

Table 5: Add-on Air Pollution Control Device Parameter Monitoring

	<u>Collection Slot(s) Velocity¹</u>	<u>Push Air Manifold Pressure (for push-pull systems only)</u>	<u>Required Action</u>
<u>Row 1: Acceptable Measurement</u>	<u>> 95% of the most recent passing source test or emission</u>	<u>95-105% compared to the most recent</u>	<u>None</u>

	<u>screening: or $\geq 2,000$ fpm</u>	<u>passing source test or emission screening</u>	
<u>Row 2: Repairable Measurement</u>	<u>90-95% of the most recent passing source test or emission screening test, or $\leq 2,000$ fpm and $> 1,800$ fpm</u>	<u>90-95% or 105-110% of the most recent passing source test or emission screening test</u>	<u>Repair or replace, and re-measure within 3 calendar days of measurement</u>
<u>Row 3: Failing Measurement</u>	<u>$< 90\%$ of the most recent passing source test or emission screening test, or $\leq 1,800$ fpm</u>	<u>$\geq 110\%$ or $< 90\%$ of the most recent passing source test or emission screening test</u>	<u>Immediately shut down any tanks controlled by the add-on air pollution control device that had a failing measurement</u>

¹ If the measured slot velocity appears in multiple rows, the owner or operator shall implement the required action in the lower numbered row. For example the owner or operator would implement the required action in Row 2, if the measured slot velocity shows a repairable measurement (row 2) or a failing measurement (row 3).

(C) Repairable Measurements

The owner or operator of a facility with an add-on air pollution control device for a Tier II or Tier III Hexavalent Chromium Tank that demonstrates a repairable measurement according to Table 5 – Add-on Air Pollution Control Device Parameter Monitoring shall:

- (i) Perform the required action specified in Table 5 – Add-on Air Pollution Control Device Parameter Monitoring for a repairable measurement.
- (ii) Demonstrate an acceptable measurement within the time period established for the required action specified in Table 5 – Add-on Air Pollution Control Device Parameter Monitoring, and
- (iii) Immediately shutdown the Tier II or Tier III Hexavalent Chromium Tank if an acceptable measurement is not demonstrated within the time period established for the required action specified in Table 5 – Add-on Air Pollution Control Device Parameter Monitoring. The tank shall remain shutdown until an acceptable measurement is measured.

(D) Failing Measurement

The owner or operator of a facility with an add-on air pollution control device for a Tier II or Tier III Hexavalent Chromium Tank that demonstrates a failing measurement according to Table 5 – Add-on Air Pollution Control Device Parameter Monitoring shall perform the required action specified in Table 5 – Add-on Air

Pollution Control Device Parameter Monitoring for a failing measurement. The tank shall remain shutdown until an acceptable measurement is measured.

(E) Smoke Test Requirements

Once every 180 days the owner or operator of a facility subject to subparagraph (k)(7) shall conduct a smoke test:

- (i) Using a method described in Appendix 5, Appendix 8, or any other method deemed acceptable by the Executive Officer; and
- (ii) Within 30 days of start-up for new and modified add-on air pollution control devices or add-on non-ventilated air pollution control devices.

(F) Failure of Smoke Test

The owner or operator of a facility shall immediately shut down all Tier II and Tier III Hexavalent Chromium Tanks associated with the add-on air pollution control device or add-on non-ventilated air pollution control device if an acceptable smoke test for each add-on air pollution control device pursuant to Appendix 5 and each add-on non-ventilated air pollution control device pursuant to Appendix 8 is not conducted. The Tier II and Tier III Hexavalent Chromium Tank shall remain shut down until an acceptable smoke test is conducted.

(G) HEPA Filters

Beginning 60 days after completion of the initial source test required by subdivision (k), the owner or operator of a facility with an add-on air pollution control device equipped with HEPA filters shall ensure that the device to monitor pressure drop pursuant to subparagraph (m)(1)(A):

- (i) Is equipped with ports to allow for periodic calibration in accordance with manufacturer specifications;
- (ii) Is calibrated according to manufacturer specifications at least once every calendar year; and
- (iii) Is maintained in accordance with manufacturer specifications.

- (m) (2) Wetting Agent Chemical Fume Suppressants (Excluding Decorative Chromium Electroplating Tanks Using a Trivalent Chromium Bath)

- (A) The owner or operator of a facility shall monitor the surface tension of the chromium electroplating or chromic acid anodizing tank that contains a certified wetting agent chemical fume suppressant with either a stalagmometer or tensiometer using the applicable method pursuant to subparagraph ~~(e)(3)(C)(k)(2)(C)~~. The surface tension shall be maintained below the respective value established in the list of certified wetting agent chemical fume suppressants pursuant to subdivision ~~(f)(1)~~, or at or below a ~~more stringent~~ value specified in the SCAQMD Permit to Operate conditions or approved Compliance Plan conditions. ~~Surface tension shall be measured daily for 20 operating days, and weekly thereafter as long as there is no violation of the surface tension requirement. If a violation occurs, the measurement frequency shall return to daily for 20 operating days, and weekly thereafter.~~
- (B) The owner or operator of a facility shall measure the surface tension every third operating day but not less than once per week.
- (C) If at any time the surface tension required by subparagraph (m)(2)(A) is not maintained, the owner or operator of a facility shall measure the surface tension:
- (i) Daily for 20 consecutive operating days; and
 - (ii) Resume the measurement schedule pursuant to subparagraph (m)(2)(B).
- ~~(DB)~~ The owner or operator of a facility operating under an approved alternative compliance method pursuant to ~~paragraph (d)(6)~~ subdivision (i), and using chemical fume suppressants as all or partial control of hexavalent chromium emissions ~~must shall~~ measure and monitor the surface tension of the electroplating or anodizing ~~bath-bath~~ each operating day daily. The surface tension ~~must shall~~ be maintained at or below the surface tension measured during the ~~performance~~ source test.
- (m) (3) Fume Suppressants Forming a Foam Blanket
- (A) The owner or operator of a facility shall maintain the foam blanket thickness across the surface of the chromium electroplating or chromic acid anodizing tank established during the most recently

approved source test to demonstrate compliance with the emission limit specified in paragraphs (h)(2) or (h)(4).

(B) The owner or operator of a facility shall measure the foam blanket thickness each operating day.

(C) If at any time the foam blanket thickness required by subparagraph (m)(3)(A) is not maintained, the owner or operator of a facility shall measure the foam blanket thickness:

(i) Hourly for 15 consecutive operating days; and

(ii) Resume the measurement schedule pursuant to subparagraph (m)(3)(B).

~~The owner or operator shall monitor the foam blanket thickness across the surface of the chromium electroplating or chromic acid anodizing tank. The foam blanket thickness shall be maintained consistent with the requirements established during the performance test to demonstrate compliance with the emission limitation. Foam thickness shall be measured hourly for 15 operating days, and daily thereafter as long as there is no violation of the foam thickness requirement. If a violation occurs, the measurement frequency shall return to hourly for 15 operating days, and daily thereafter.~~

(m) (4) Polyballs or Similar Mechanical Fume Suppressants

The owner or operator of a facility shall visually inspect the Tier II or Tier III Hexavalent Chromium Tank ~~chromium electroplating or chromic acid anodizing tank for~~ and maintain coverage comparable to the coverage during the performance source test ~~daily~~ each operating day.

~~(h)~~ Inspection, and Operation, and Maintenance Requirements

(n) (1) Inspection and Maintenance

(A) The owner or operator of a facility using an add-on air pollution control device or add-on non-ventilated air pollution control device shall comply with the applicable inspection and maintenance requirements listed in Table 4-1 of Appendix 4.

(B) The owner or operator of a facility using an add-on air pollution control device or add-on non-ventilated air pollution control device custom designed for a specific operation shall develop operating and maintenance requirements for approval by the Executive

Officer. The requirements and frequency of inspection shall be sufficient to ensure compliance.

~~Owners or operators of hexavalent chromium electroplating and chromic acid anodizing operations using an add-on air pollution control device shall comply with the applicable inspection and maintenance requirements listed in Table 4. The owner or operator of an add-on air pollution control device custom designed for a specific operation shall develop operating and maintenance requirements. The requirements shall be submitted to the District for review and approval no later than 120 days after the effective date of this rule for custom systems existing before December 5, 2008, and prior to initial start-up for custom systems installed on or after December 5, 2008. The requirements and frequency of inspection must be sufficient to ensure compliance.~~

Table 4
Summary of Inspection and Maintenance Requirements for Sources Using
Add-on Air Pollution Control Device(s)

Control Technique/Equipment	Inspection and Maintenance Requirements	Frequency
Composite mesh pad (CMP) system.	1. Visually inspect device to ensure that there is proper drainage, no unusual chromic acid buildup on the pads, and no evidence of chemical attack that affects the structural integrity of the device.	1. Once per quarter.
	2. Visually inspect back portion of the mesh pad closest to the fan to ensure there is no breakthrough of chromic acid mist.	2. Once per quarter.

Table 4
Summary of Inspection and Maintenance Requirements for Sources Using
Add-on Air Pollution Control Device(s) (cont)

Control Technique/Equipment	Inspection and Maintenance Requirements	Frequency
	3. Visually inspect ductwork from tank to the control device to ensure there are no leaks. 4. Perform washdown of the composite mesh pads in accordance with manufacturer's recommendations.	3. Once per quarter. 4. Per manufacturer.
Packed bed scrubber (PBS)	1. Visually inspect device to ensure there is proper drainage, no unusual chromic acid buildup on the packed beds, and no evidence of chemical attack that affects the structural integrity of the device. 2. Visually inspect back portion of the chevron blade mist eliminator to ensure that it is dry and there is no breakthrough of chromic acid mist. 3. Same as number 3 above for CMP system. 4. Add fresh makeup water to the packed bed^A.	1. Once per quarter. 2. Once per quarter. 3. Once per quarter. Whenever makeup is added.
PBS/CMP system	1. Same as for CMP system. 2. Same as for CMP system.	1. Once per quarter. 2. Once per quarter.
	3. Same as for CMP system. 4. Same as for CMP system.	3. Once per quarter. 4. Per manufacturer.

^AHorizontal packed bed scrubbers without continuous recirculation must add make up water to the top of the packed bed.

Table 4
Summary of Inspection and Maintenance Requirements for Sources Using
Add-on Air Pollution Control Device(s) (cont)

Control Technique/Equipment	Inspection and Maintenance Requirements	Frequency
Fiber bed mist eliminator ^B	<ol style="list-style-type: none"> 1. Visually inspect fiber bed unit and prefiltering device to ensure there is proper drainage, no unusual chromic acid buildup in the units, and no evidence of chemical attack that affects the structural integrity of the devices. 2. Visually inspect ductwork from tank or tanks to the control device to ensure there are no leaks. 3. Perform washdown of fiber elements in accordance with manufacturer's recommendations. 	<ol style="list-style-type: none"> 1. Once per quarter. 2. Once per quarter. 3. Per manufacturer.
High Efficiency Particulate Arrestors filter (HEPA)	<ol style="list-style-type: none"> 1. Look for changes in the pressure drop. 2. Replace HEPA filter. 	<ol style="list-style-type: none"> 1. Once per week. 2. Per manufacturer's specifications or District's requirement.
Chromium Tank Covers	<ol style="list-style-type: none"> 1. Drain the air inlet (purge air) valves at the end of each day that the tank is in operation. 2. Visually inspect access door seals and membranes for integrity. 3. Drain the evacuation unit directly into the electroplating tank or into the rinse tanks (for recycle into the electroplating tank). 	<ol style="list-style-type: none"> 1. Once per day. 2. Once per week. 3. Once per week.

^B ~~Inspection and maintenance requirements for the control device installed upstream of the fiber bed mist eliminator to prevent plugging do not apply as long as the inspection and maintenance requirements for the fiber bed unit are followed.~~

Table 4
Summary of Inspection and Maintenance Requirements for Sources Using
Add-on Air Pollution Control Device(s) (cont)

Control Technique/Equipment	Inspection and Maintenance Requirements	Frequency
	4. Visually inspect membranes for perforations using a light source that adequately illuminates the membrane (e.g., Grainger model No. 6X971 Fluorescent Hand Lamp). 5. Visually inspect all clamps for proper operation; replace as needed. 6. Clean or replace filters on evacuation unit. 7. Visually inspect piping to, piping from, and body of evacuation unit to ensure there are no leaks and no evidence of chemical attack. 8. Replace access door seals, membrane evacuation unit filter, and purge air inlet check valves in accordance with the manufacturer's recommendations.	4. Once per month. 5. Once per month. 6. Once per month. 7. Once per quarter. 8. Per manufacturer.
Pitot tube	Backflush with water, or remove from the duct and rinse with fresh water. Replace in the duct and rotate 180 degrees to ensure that the same zero reading is obtained. Check Pitot tube ends for damage. Replace Pitot tube if cracked or fatigued.	Once per quarter.
Ampere hour meter	Install and maintain per manufacturer's specifications.	Per manufacturer.

- (n) (2) ~~Hard and decorative chromium electroplating, and chromic acid anodizing operations~~ The owner or operator of a facility using chemical fume suppressants (i.e. wetting agent, foam) or mechanical fume suppressants (i.e., polyballs) shall comply with the applicable inspection and maintenance requirements in Table 4-4 of Appendix 4.
- (n) (3) Beginning [90 Days After Date of Rule Adoption], the owner or operator of a facility operating a Tier II Hexavalent Chromium Tank that is not controlled by an add-on air pollution control device shall comply with the

applicable inspection and maintenance requirements in Table 4-3 of Appendix 4.

- (n) (4) Beginning [90 Days After Date of Rule Adoption], the owner or operator of a facility operating a Tier I, Tier II, and Tier III Hexavalent Chromium Tank shall comply with the applicable inspection and maintenance requirements in Table 4-2 of Appendix 4.

~~Table 5
Summary of Inspection and Maintenance Requirements for Sources Using
Chemical or Mechanical Fume Suppressants~~

Equipment	Inspection and Maintenance Requirement for Monitoring Equipment	Frequency
Ampere-hour meter	Install and maintain per manufacturer's specifications.	Per manufacturer.
Stalagmometer/ Tensiometer	Calibrate and maintain per manufacturer's specifications.	

- ~~(i) Operation and Maintenance Plan Requirements~~
- (n) ~~(1)(5) Operation and Maintenance Plan~~

The owner or operator of a facility subject to the inspection and maintenance requirements of paragraphs ~~(h)(1) and (h)(2)(n)(1), (n)(2), (n)(3), or (n)(4)~~ shall prepare an operation and maintenance plan. For major sources, the plan shall be incorporated by reference into the source's Title V permit. The plan shall incorporate the inspection and maintenance requirements for that device or monitoring equipment, as identified in ~~Tables 4-1, and 4-2, 4-3, and 4-45 of Appendix 4,~~ and shall include the following elements:

- (A) A standardized checklist to document the operation and maintenance of the source, the add-on air pollution control device, and the process and control system monitoring equipment; and
- (B) Procedures to be followed to ensure that equipment is properly maintained.

~~The owner or operator may use applicable standard operating procedure (SOP) manuals, Occupational Safety and Health Administration (OSHA) plans, or other existing plans, provided the alternative plans meet the requirements of this subdivision.~~

- (n) (6) Notwithstanding the operation and maintenance plan required by paragraph (n)(5), the owner or operator of a facility may use applicable standard operating procedure (SOP) manuals, Occupational Safety and Health Administration (OSHA) plans, or other existing plans, provided the alternative plans meet the requirements of this subdivision.
- (n) ~~(2)~~(7) Operation and Maintenance Plan Availability
)
 The owner or operator of a facility shall keep the written operation and maintenance plan on record after it is developed, to be made available for inspection, upon request.
- (n) ~~(3)~~(8) Operation and Maintenance Plan Modifications
)
 Any changes made by the owner or operator of a facility ~~should~~ shall be documented in an addendum to the plan. In addition, the owner or operator of a facility shall keep previous (i.e., superseded) versions of the operation and maintenance plan on record to be made available for inspection, upon request, for a period of 5 years after each revision to the plan.
- ~~(4) Breakdown Provisions In Operation and Maintenance Plan~~
~~The operation and maintenance plan shall be revised as necessary to minimize breakdowns.~~
- (n) (9) Amended Operation and Maintenance Plan
No later than [90 Days After Date of Rule Adoption], the facility's operation and maintenance plan shall be revised and made available upon request to the Executive Officer to reflect the incorporation of the inspection and maintenance requirements for a device or monitoring equipment that is identified in Table 4-2 and Table 4-3 of Appendix 4 and shall include the elements required in subparagraphs (n)(5)(A) and (n)(5)(B).
- (n) (10) Replacement of Ampere-Hour Meter
Prior to replacement of a continuous recording non-resettable ampere-hour meter that is required under paragraph (d)(1), the owner or operator of a facility shall photograph the actual ampere-hour reading of:
 (A) The ampere-hour meter being replaced; and
 (B) The new ampere-hour meter immediately after installation.
- (jo) Recordkeeping

- (o) (1) Inspection ~~Records~~ for ~~Sources~~ Using an Add-on control Air Pollution Control Devices or Non-Ventilated Air Pollution Control Device ~~:~~

The owner or operator of a facility shall maintain inspection records to document that the inspection and maintenance requirements of subdivision ~~(h)(n)~~ and Tables 4 and 5, and that the provisions of the operation and maintenance plan required by subdivision ~~(i)(n)~~ have been met. The record can take the form of a checklist and ~~should~~shall identify:

- (A) ~~The~~ The device inspected;
 - (B) ~~The~~ The date and time of inspection;
 - (C) ~~A~~ A brief description of the working condition of the device during the inspection;
 - (D) ~~Maintenance~~ Maintenance activities performed on the components of the air pollution control system (i.e. duct work replacement, filter pad replacement, fan replacement, etc.); and
 - (E) ~~Any~~ Any actions taken to correct deficiencies found during the inspection.
- (o) (2) Inspection Records for Sources Using Chemical ~~Fume Suppressants (i.e. wetting agent, foam)~~ or Mechanical Fume Suppressants (i.e., ~~polyballs~~).

The owner or operator of a facility shall maintain inspection records to document that the applicable inspection and maintenance requirements of paragraphs ~~(h)(2)(n)(1), (n)(2), (n)(3), and (n)(4)~~ and Tables 4 and 5 have been met. The record can take the form of a checklist.

- (o) (3) ~~Performance-Source Test, Capture Efficiency, and Smoke Test Records~~
- The owner or operator of a facility shall maintain ~~test reports and records~~ documenting the conditions and results of all performance-source tests, capture efficiency tests, emissions screening test, and smoke tests required by subdivision ~~(k)(e)~~. The records shall include ~~performance-source test~~ results required to determine compliance with paragraph ~~(g)(1)(m)(1)~~, including the pressure drop established during the ~~performance-source test~~ to demonstrate compliance with the applicable emission limitation ~~for composite mesh pad (CMP), packed bed scrubber (PBS), and CMP/PBS, and a fiber bed mist eliminator and the inlet velocity pressure established during the performance test to demonstrate compliance with the emission limitation.~~

(o) (4) Monitoring Data Records

The owner or operator of a facility shall maintain records of continuously recorded ampere-hour data required by paragraph ~~(e)~~(d)(1) and monitoring data required by subdivision ~~(m)~~(g) that are used to demonstrate compliance with the requirements of subdivision (c) and subdivision (d), if applicable, including the date and time the data are collected.

(A) Cumulative Rectifier Usage Records

The owner or operator of a facility shall, on a monthly basis, record the actual cumulative rectifier usage expended during each month of the reporting period, and the total usage expended to date.

~~(B)~~ Pressure Drop

~~The owner or operator shall record the pressure drop once a week. The pressure drop shall be recorded daily beginning February 1, 2009.~~

~~(B)~~ Inlet Velocity Pressure and Air Flow Measurements

C)

The owner or operator of a facility shall record the ~~inlet velocity~~applicable pressures and air flow as specified in Table 5 — Add-on Air Pollution Control Device Parameter Monitoring of subdivision (m) once a week. ~~The inlet velocity pressure shall be recorded daily beginning February 1, 2009.~~

(o) (5) Surface Tension Records~~(D)~~

~~(i)~~(A) The owner or operator of a facility shall record the surface tension pursuant to the requirements of paragraph ~~(m)~~(2) daily for 20 operating days, and weekly thereafter as long as there is no violation of the surface tension requirement. If the surface tension exceeds the respective value established in the list of certified chemical fume suppressants pursuant to subdivision (f), or a more stringent value specified in permit conditions or approved Compliance Plan conditions, the owner or operator shall again record the surface tension daily for 20 operating days, and weekly thereafter

~~(ii)~~(B) For facilities operating under an approved alternative compliance method pursuant to ~~paragraph (d)~~(6) subdivision (i), and using chemical fume suppressants as all or partial control of hexavalent chromium emissions, the owner or operator of the facility shall

record the surface tension of the electroplating or anodizing bath daily.

(o) (6) Mechanical Fume Suppressant and Foam Blankets Records

(A) The owner or operator of a facility that is required to measure the foam blanket thickness pursuant to paragraph (m)(3), shall record the foam thickness.

(B) The owner or operator of a facility using polyballs or other mechanical fume suppressants to comply with the emission standards of subdivision (h) or (i), shall record the coverage of the electroplating or anodizing bath daily. Coverage shall be reported as a percentage of bath surface area.

~~(E)~~ ~~Mechanical Fume Suppressant and Foam Blankets~~

~~(i)~~ ~~The owner or operator using a foam blanket to comply with the emission standards of subdivision (c) or (d), shall record the foam thickness, hourly for 15 operating days, and daily thereafter as long as there is no violation of the foam thickness requirement. If a violation occurs, the measurement frequency shall return to hourly for 15 operating days, and daily thereafter.~~

~~(ii)~~ ~~The owner or operator using polyballs or other mechanical fume suppressants to comply with the emission standards of subdivision (c) or (d), shall record the coverage of the electroplating or anodizing bath daily. Coverage shall be reported as a percentage of bath surface area.~~

~~(5)~~ ~~Breakdown Records~~

~~The owner or operator shall maintain records of the occurrence, duration, and cause (if known) and action taken on each breakdown.~~

(o) ~~(6)~~(7) Records of Excesses

)

The owner or operator of a facility shall maintain records of exceedances of: the emission limitations in subdivisions ~~(e) and (d)~~(h) and (i), the parameter monitoring ~~parameter~~-values established under subdivision ~~(g)~~(m), or any site-specific operating parameters established for alternative equipment. The records shall include the date of the occurrence, the duration, cause (if known), and, where possible, the magnitude of any excess emissions.

- (o) (8) Housekeeping and Best Management Practice Records
 (7) The owner or operator of a facility shall maintain records demonstrating compliance with housekeeping practices and best management practices, as required by ~~paragraph (e)(4)~~ subdivisions (f) and (g), including the dates on which specific activities were completed, and records showing that chromium or chromium-containing wastes have been stored, disposed of, recovered, or recycled using practices that do not lead to fugitive emissions ~~dust~~.
- (o) ~~(8)~~(9) Records of Fume Suppressant Additions
)
 For sources using fume suppressants to comply with the standards, the owner or operator of a facility shall maintain records of the date, time, approximate volume, and product identification of the fume suppressants that are added to the electroplating or anodizing bath.
- (o) ~~(9)~~(1) Records of Trivalent Bath Components
 0)
 For sources complying with ~~paragraph (e)(14)~~(h)(3) using trivalent chromium baths, the owner or operator of a facility shall maintain records of the bath components purchased, with the wetting agent clearly identified as a bath constituent contained in one of the components.
- (o) ~~(10)~~(1) Records of Filter Purchase and Disposal
 11)
 For sources using add-on air pollution control devices to comply with the standards, the owner or operator of a facility shall retain purchase orders for filters and waste manifest records for filter disposal.
- ~~(11) New/Modified Source Review Information~~
~~The owner or operator shall maintain records supporting the notifications and reports required by the District's new source review provisions and/or subdivision (l).~~
- (o) (12) Records Retention
 All records shall be maintained for five years, at least two years on site.
- (kp) Reporting
- (p) (1) ~~Performance-Source Test Documentation~~
 (A) Notification of Performance-Source Test

At least 60 calendar days before the source test is scheduled to occur, the owner or operator of a facility shall notify the Executive Officer that a source test will be conducted.

~~(i) The owner or operator of a source shall notify the Executive Officer that a performance test shall be conducted at least 60 calendar days before the performance test is scheduled.~~

~~(ii) The provisions in clause (k)(1)(A)(i), above, do not apply if the performance test was conducted prior to July 24, 1997 and was approved by the Executive Officer and the U.S. EPA.~~

(B) Reports of Performance-Source Test Results

The owner or operator of a facility shall report performance-source test results to the Executive Officer. Reports of performance-source test results shall be submitted no later than 90 calendar days following the completion of the required performance-source test, and shall be submitted as part of the notification of compliance status required by paragraphs ~~(k)(p)(2)~~ and (p)(3).

(C) ~~The content of performance-source~~ test reports shall contain, at a minimum, the information identified in Appendix 1.

(p) (2) Initial Compliance Status Report

An initial compliance status report is required each time that a source becomes subject to the requirements of this rule. The owner or operator of a facility shall submit to the Executive Officer an initial compliance status report, signed by the responsible official who shall certify its accuracy, attesting to whether the source has complied with this rule.

(A) Initial Compliance Status Report Due Date

The initial compliance status report for existing facilities shall be submitted to the Executive Officer no later than April 24, 2008. New or modified facilities shall submit the initial compliance status report upon start-up.

(B) The initial compliance status report shall contain, at a minimum, the information identified in Appendix 2.

(p) (3) Ongoing Compliance Status and Emission Reports

The owner or operator of a facility shall submit a summary report to the Executive Officer to document the ongoing compliance status.

(A) Frequency of Ongoing Compliance Status and Emission Reports

The report shall be submitted each calendar year on or before February 1 for all sources and shall include information covering the preceding calendar year (January 1 through December 31).

- (B) ~~The content of ongoing compliance status and emission reports shall, at a minimum, contain the information identified in Appendix 3.~~

(p) (4) ~~Reports of Breakdowns~~ Notification of Incident

- (A) The owner or operator of a facility shall report breakdowns as required by District Rule 430 notify the Executive Officer within four hours of the incident or within four hours from the time the owner or operator of a facility knew or reasonably should have known of, any failed smoke test, any failed source test, any exceedance of a permitted ampere-hour limit, or any malfunction of a non-resettable ampere-hour meter by calling 1-800-CUT SMOG. In the cases of emergencies that prevent the owner or operator of a facility from reporting all required information within the four hour limit, the Executive Officer may extend the time for reporting the required information provided such owner or operator of a facility has notified the Executive Officer of the incident within 24-hours. The notification shall include the following information-:

- (i) Date and time of the incident and when it was discovered;
- (ii) Specific location and equipment involved;
- (iii) Responsible party to contact for further information;
- (iv) Causes of the incident, to the extent known; and
- (v) Estimated time for repairs and correction.

- (B) Within seven calendar days after a reported incident has been corrected, but no later than thirty calendar days from the initial date of the incident, unless an extension has been approved in writing by the Executive Officer, the owner or operator of a facility shall submit a written incident report to the Executive Officer that includes:

- (i) An identification of the equipment involved in causing, or suspected of having caused, or having been affected by the incident;
- (ii) The duration of the incident;
- (iii) The date of correction and information demonstrating that compliance is achieved;

- (iv) An identification of the types of emissions, if any, resulting from the incident;
 - (v) A quantification of the excess emissions, if any, resulting from the incident and the basis used to quantify the emissions;
 - (vi) Information substantiating that steps were immediately taken to correct the condition causing the incident, and to minimize the emissions, if any, resulting from the incident;
 - (vii) Written verification that the facility is operating in compliance with this rule. If the facility is not in compliance with this rule, provide an approximate date the facility is expected to be in compliance;
 - (viii) A description of the corrective measures undertaken and/or to be undertaken to avoid such an incident in the future; and
 - (ix) Pictures of the equipment that failed, if available.
- (p) (5) Reports Associated with Trivalent Chromium Baths Exclusively Using a Chemical Fume Suppressant Containing a Wetting Agent
- Owners or operators ~~with switching to~~ trivalent chromium baths exclusively using a ~~certified~~ chemical fume suppressant containing a wetting agent to comply with subparagraph ~~(e)(14)(A)(h)(3)(A)~~ are not subject to paragraphs ~~(p)(1) through (p)(3) of this subdivision~~, but shall instead submit the following ~~a~~ reports within 30 days of a change to the trivalent chromium electroplating process that includes:
- (A) ~~Sources Currently Using Trivalent Chromium~~
~~No later than November 24, 2007, the owner or operator of an existing facility shall submit a notification of compliance status that contains the information specified in (k)(5)(A)(i) through (iii). New and modified facilities shall submit this information within 30 days after the effective date of this rule.~~
 - (i) ~~The name and address of each source subject to this paragraph;~~
 - (ii) ~~A statement that a trivalent chromium process that incorporates a wetting agent will be used to comply; and~~
 - (iii) ~~The list of bath components that comprise the trivalent chromium bath, with the wetting agent clearly identified.~~
 - (B) ~~Sources Changing to Trivalent Chromium~~

~~Within 30 days of a change to the trivalent chromium electroplating process, a report that includes:~~

- ~~(A) (i) A description of the manner in which the process has been changed and the emission limitation, if any, now applicable to the source; and~~
- ~~(B) (ii) The notification and reporting requirements of paragraphs (p)(1), (p)(2), and (p)(3) of this subdivision, if the source complies facility complies with the emission limitation option, or paragraph (p)(5) of this subdivision, if the source uses a wetting agent to comply. The report shall be submitted in accordance with the schedules identified in those paragraphs.~~
- (p) (6) Adjustments to the Timeline for Submittal and Format of Reports
The Executive Officer may adjust the timeline for submittal of periodic reports, allow consolidation of multiple reports into a single report, establish a common schedule for submittal of reports, or accept reports prepared to comply with other state or local requirements. Adjustments shall provide the same information and shall not alter the overall frequency of reporting.
- (1) ~~New and Modified Sources~~
 - (1) ~~Notification of Construction~~
~~After the effective date of this rule no person may construct or modify a source, such that it becomes a source subject to this section, without submitting a notification of construction or modification to the Executive Officer and receiving approval in advance to construct or modify the source. The contents of the Notification of Construction shall include information as listed in Appendix 4.~~
 - (2) ~~New Source Review Rules~~
~~In lieu of complying with the requirements in paragraph (1)(1) of this subdivision, a facility may fulfill these requirements by complying with the District's new source review rule or policy, provided similar information is obtained.~~

(mq) Procedure for Establishing Alternative Requirements(q) (1) Request Approval of an Alternative Requirement

Any person may request approval of an alternative requirement. The person seeking such approval shall submit the proposed alternative requirement to the Executive Officer for approval. The request shall include the proposed alternative requirement, the reason for requesting the alternative requirement, and information demonstrating that the criteria for approval identified in Appendix 6 is met.

(q) (2) Approval of an Alternative Requirement

The Executive Officer may approve an alternative requirement if it determines that application of the alternative requirement meets the criteria for approval identified in Appendix 6 and the Executive Officer has submitted the proposed alternative requirements and has received concurrence from the applicable concurring agencies identified in Appendix 6.

(q) (3) Approval Criteria

Nothing in this subdivision prohibits the Executive Officer from establishing approval criteria more stringent than that required in Appendix 6.

(q) (4) Alternatives Already Approved by U.S. EPA

Waivers for alternatives already approved by the U.S. EPA prior to October 24, 2007 shall remain in effect until the effective dates of the specified requirements become effective.

(nr) Exemptions

~~(1) This rule shall not apply to process tanks associated with a chromium electroplating or chromic acid anodizing process in which neither chromium electroplating nor chromic acid anodizing is taking place. Examples of such tanks include, but are not limited to, rinse tanks, etching tanks, and cleaning tanks. Tanks that contain a chromium solution in which no electrolytic process occurs, are not subject to this rule. An example of such a tank is a chromium conversion coating tank where no electrical current is applied.~~

(r) ~~(2)~~(1) The requirements of subdivisions ~~(g), (h), and (i)~~(m) and (n) do not apply to decorative chromium electroplating tanks using a trivalent chromium bath with a wetting agent.

- ~~(3) The requirements of paragraphs (c)(8) through (c)(14), (d)(5) and (d)(6), and subdivision (i) do not apply during periods of equipment breakdown, provided the provisions of District Rule 430 are met, notwithstanding subparagraph (b)(3)(B) of Rule 430.~~
- ~~(r) (2) The requirements of paragraphs (f)(6), (g)(4), and (g)(5) do not apply to buffing, grinding, or polishing operations conducted under a continuous flood of metal removal fluid.~~
- ~~(o) Title V Permit Requirements~~
~~The owner or operator of a major source facility subject to the requirements of this section is required to obtain a Title V permit from the District in accordance with the procedures set forth in District Regulation XXX.~~
- ~~(ps) Rule 1402 Inventory Requirements~~
~~The owner or operator of chromium electroplating or chromic acid anodizing tanks at a facility that is in compliance with this rule will not be required to submit an emission inventory to the Executive Officer for emissions of toxic compounds subject to this rule, pursuant to ~~subparagraph (n)(1)(B)~~ paragraph (p)(1) of Rule 1402 - Control of Toxic Air Contaminants from Existing Sources.~~
- ~~(q) Chromium Electroplating or Chromic Acid Anodizing Kits Requirements~~
- ~~(1) Except as provided in paragraph (q)(2), no person shall sell, supply, offer for sale, or manufacture for sale in the District, any chromium electroplating or chromic acid anodizing kit.~~
- ~~(2) The provisions of paragraph (q)(1) do not apply to any person that sells, supplies, offers for sale, or manufactures for sale in the District a chromium electroplating or chromic acid anodizing kit to the owner or operator of a permitted facility at which chromium electroplating or chromic acid anodizing is performed.~~
- ~~(3) No person shall use a chromium electroplating or chromic acid anodizing kit to perform chromium electroplating or chromic acid anodizing unless these activities are performed at a permitted facility that complies with the requirements of this rule.~~
- ~~(4) For the purposes of this section, “chromium electroplating or chromic acid anodizing kit” means chemicals and associated equipment for conducting chromium electroplating or chromic acid anodizing including, but not limited to, internal and external tank components.~~

- (t) Conditional Requirements for Permanent Total Enclosure
- (t) (1) The owner or operator of a facility shall install a Permanent Total Enclosure that does not exceed 3.5% for all enclosure openings, as specified in paragraph (e)(1) for a Tier III hexavalent chromium tank:
- (A) That results in more than one non-passing source test as required in paragraph (k)(1) occurring within a consecutive 48-month period; or
- (B) That is not immediately shut down pursuant to clause (m)(1)(C)(iii), subparagraph (m)(1)(D) or subparagraph (m)(1)(F):
- (i) More than once within a consecutive 48-month period for a facility that is located more than 1,000 feet from a sensitive receptor; or
- (ii) Once for a facility that is located less than or equal to 1,000 feet from a sensitive receptor.
- (t) (2) Within 30 days of the date of notification by the Executive Officer that a Permanent Total Enclosure is required, the owner or operator of facility may submit a written report to the Executive Officer providing evidence that the installation of a Permanent Total Enclosure is not warranted based on the following criteria:
- (A) The incidents of non-compliance specified in paragraph (t)(1) did not occur; or
- (B) The owner or operator of a facility resolved the incidents of non-compliance specified in paragraph (t)(1) in a timely manner; and
- (C) The owner or operator of a facility implemented specific measures to minimize hexavalent chromium emissions.
- (t) (3) The Executive Officer shall use the information provided by the owner or operator of a facility to determine if a permanent total enclosure is required and will notify the owner or operator of a facility within 90 days of receiving the written report.
- (t) (4) The owner or operator of a facility required to install a permanent total enclosure pursuant to subdivision (t) shall vent the permanent total enclosure to an add-on air pollution control device that is fitted with HEPA filters, or other filter media that is rated by the manufacturer to be equally or more effective; and designed in a manner that does not conflict with requirements or guidelines set forth by OSHA or CAL-OSHA regarding worker safety, or the National Fire Protection Association regarding safety.

- (t) (5) The owner or operator of a facility required to install a permanent total enclosure pursuant to subdivision (t) shall install the permanent total enclosure no later than 12 months after the SCAQMD Permit to Construct is issued by the Executive Officer. The owner or operator of a facility shall submit complete SCAQMD permit applications for the permanent total enclosure to the Executive Officer no later than:
- (A) 180 days after notification by the Executive Officer if the property line of the facility is within 500 feet of the property line of any sensitive receptor.
- (B) 270 days after notification by the Executive Officer for all other facilities.
- (u) Hexavalent Chromium Phase-Out Plan
- (u) (1) The owner or operator of a facility shall not be subject to the requirements of paragraph (h)(4) to vent a Tier III Hexavalent Chromium Tank, existing on or before [Date of Rule Adoption], to an add-on air pollution control device, if the owner or operator of a facility submits a Hexavalent Chromium Phase-Out Plan to the Executive Officer for review and approval no later than [90 Days after Date of Rule Adoption] containing the following:
- (A) A commitment that the facility will permanently eliminate or reduce hexavalent chromium concentrations within the subject tank to below the concentration of the definition of a Tier II or Tier III Hexavalent Chromium Tank;
- (B) A description of the method by which hexavalent chromium concentrations will be permanently eliminated or reduced from the subject tank(s) and the date of final completion, not to exceed two years from approval of the Hexavalent Chromium Phase-Out Plan;
- (C) A list of milestones, including any testing required to meet specifications or quality assurance requirements, to allow the facility to reduce or eliminate hexavalent chromium by the completion date;
- (D) Completion date for each of the milestones listed in subparagraph (u)(1)(C); and
- (E) A list of all control measures that will be implemented for the subject tank(s), including dates of implementation, until the hexavalent chromium-concentration is eliminated or reduced as stated.

- (u) (2) The Hexavalent Chromium Phase-Out Plan shall be subject to the fees specified in Rule 306.
- (u) (3) The Executive Officer shall notify the owner or operator of a facility in writing whether the Hexavalent Chromium Phase-Out Plan is approved or disapproved. Determination of approval status shall be based on, at a minimum, submittal of information that satisfies the criteria set forth in paragraph (u)(1). If the Hexavalent Chromium Phase-Out Plan is disapproved, the owner or operator of a facility shall resubmit the plan, subject to plan fees specified in Rule 306, within 30 calendar days after notification of disapproval of the Hexavalent Chromium Phase-Out Plan. The resubmitted Hexavalent Chromium Phase-Out Plan shall include any information necessary to address deficiencies identified in the disapproval letter.
- (u) (4) Upon approval of the Hexavalent Chromium Phase-Out Plan, the owner or operator of a facility shall implement the approved plan and shall submit a progress report to the Executive Officer by the first day of every calendar quarter indicating the increments of progress for the previous quarter, or submit according to an alternative schedule as specified in the approved plan.
- (u) (5) The Executive Officer shall notify the owner or operator of a facility to submit complete SCAQMD permit applications for an add-on air pollution control device to comply with subdivision (h) if:

 - (A) The owner or operator does not eliminate or reduce hexavalent chromium by the final completion date in the approved Hexavalent Chromium Phase-Out Plan;
 - (B) The Executive Officer denies a resubmitted Hexavalent Chromium Phase-Out Plan; or
 - (C) The owner or operator fails to resubmit a Hexavalent Chromium Phase-Out Plan as required under paragraph (u)(3).
- (u) (6) The owner or operator shall install the add-on air pollution control device specified in the permit application submitted pursuant to paragraph (u)(5) no later than 180 days after a SCAQMD Permit to Construct has been issued.
- (v) Time Extensions
- (v) (1) An owner or operator of a facility may submit a request to the Executive Officer for a one-time extension for up to 12 months to:

- (A) Complete installation of an add-on air pollution control device, implement an approved alternative compliance method, or implement an approved Hexavalent Chromium Phase-Out Plan to meet the requirements under subparagraph (h)(4)(C); or
 - (B) Meet the hexavalent chromium emission limit, phase-out the use of hexavalent chromium, or implement an alternative to a wetting agent chemical fume suppressant required under paragraph (l)(5);
 - (v) (2) An owner or operator of a facility that elects to submit a request for a time extension shall submit the request no later than 90 days before the compliance deadline specified in subparagraph (h)(4)(C) or paragraph (l)(5) and provide:
 - (A) The facility name, SCAQMD facility identification number, and the name and phone number of a contact person;
 - (B) A description of the chromium electroplating or chromic acid anodizing tank and the SCAQMD Permit to Operate and tank number;
 - (C) A description of the emission reduction approach that is being implemented;
 - (D) The specific provision under subparagraph (h)(4)(C) or paragraph (l)(5) for which a compliance extension is being requested;
 - (E) The reason(s) a time extension is needed;
 - (F) Progress in meeting the provisions in subparagraph (h)(4)(C) or paragraph (l)(5) including but not limited to date permit application was submitted to the SCAQMD, date permit to construct was approved, purchase order of equipment, date of service of contractors or consultants to install equipment; and
 - (G) Length of time requested, up to 12 months.
- (v) (3) Approval of Time Extensions

The Executive Officer will review the request for the time extension and will approve the time extension if the owner or operator:

 - (A) Demonstrates that there are specific circumstances beyond the control of the owner or operator that necessitate additional time to meet the compliance dates specified under subparagraph (h)(4)(C) and paragraph (l)(5); and
 - (B) The demonstration is substantiated with information that includes, but is not limited to detailed schedules, engineering designs,

construction plans, permit applications, purchase orders, economic burden, and technical infeasibility.

Appendix 1 – Content of ~~Performance~~Source Test Reports.

~~Performance~~Source test reports shall contain, at a minimum, the following information:

1. A brief process description;
2. Sampling location description(s);
3. A description of sampling and analytical procedures and any modifications to standard procedures;
4. Test results in milligrams/ampere-hour;
5. Quality assurance procedures and results;
6. Records of operating conditions during the test, preparation of standards, and calibration procedures;
7. Original data for field sampling and field and laboratory analyses;
8. Documentation of calculations; ~~and~~
9. Applicable Industrial Ventilation Limits;
10. Collection slot velocities (if applicable);
11. Measured static, differential, or volumetric flow rate at the push manifold, collection manifold, across each stage of the control device, and exhaust stack (if applicable); and
912. Any other information required by the test method.

Note: ~~Test reports consistent with the provisions of ARB Method 425 will fulfill the above performance test report content requirement.~~

Appendix 2 – Content of Initial Compliance Status Reports.

Initial compliance status reports shall contain, at a minimum, the following information:

1. Facility name, SCAQMD ID number, facility address, owner/ and operator name, and telephone number;
2. The distance of the facility to the property line of the nearest commercial/industrial building and sensitive receptor using measurement methods provided in ~~subparagraph (c)(11)(B)~~ paragraph (h)(2);
3. Sensitive receptor locations, if they are located within one-quarter of a mile from the center of the facility;
4. Building parameters
 - Stack height in feet (point sources); or
 - Building area in square feet (volume sources).
5. Maximum potential rectifier capacity per tank and facility maximum operating schedule (more than or less than or equal to 12 hours per day);
6. The applicable emission limitation and the methods that were used to determine compliance with this limitation;
7. Facility-wide emissions ~~established under paragraph (d)(4)~~, if applicable;
8. If a performance source test is required, the test report documenting the results of the performance source test, which contains the elements listed in Appendix 1;
9. If an initial smoke test demonstrating the capture efficiency of a ~~ventilation system~~ the add-on air pollution control device or add-on non-ventilated air pollution control device is required, the test report documenting the results which contain the elements listed in Appendix 89;
10. The type and quantity, in pounds, of hazardous air pollutants emitted by the source. ~~(If the owner or operator is subject to the construction and modification provisions of subdivision (l) and had previously submitted emission estimates, the owner or operator shall state that this report corrects or verifies the previous estimate.);~~
11. For each monitored parameter for which a compliant value is to be established under subdivision (m)~~(g)~~, the specific operating parameter value, or range of values, that corresponds to compliance with the applicable emission limit;

12. The methods that will be used to determine continuous compliance, including a description of monitoring and reporting requirements, if methods differ from those identified in this section;
13. A description of the air pollution control technique for each emission point;
14. A statement that the owner or operator of a facility has completed and has on file the operation and maintenance plan as required by subdivision ~~(n)(i)~~;
15. The actual cumulative ampere-hour usage expended during the preceding calendar year, if operation occurred;
16. Information on calculations for the building enclosure envelope pursuant to paragraph (e)(1), including locations and dimensions of openings that are counted towards the applicable building envelope allowance;
167. A statement that the owner or operator of a facility, or personnel designated by the owner or operator of a facility, has completed a ~~District~~SCAQMD-approved training program pursuant to ~~paragraph (e)(7)~~subdivision (j); and
178. A statement by the owner or operator of a facility as to whether the source has complied with the provisions of this section.

Appendix 3 – Content of Ongoing Compliance Status and Emission Reports.

Ongoing compliance status and emission reports shall, at a minimum, contain the following information:

1. The company name and address of the source;
2. An identification of the operating parameter that is monitored for compliance determination, as required by subdivision ~~(m)~~(g);
3. The relevant emission limitation for the source, and the operating parameter value, or range of values, that correspond to compliance with this emission limitation as specified in the notification of initial compliance status required by Appendix 2;
4. The beginning and ending dates of the calendar year for the reporting period;
5. A description of the type of process performed in the source;
6. The actual cumulative rectifier usage expended during the calendar year of the reporting period, on a month-by-month basis, if the source is a hard or decorative chromium electroplating tank or chromic acid anodizing tank;
7. Updated facility-wide emissions—established under paragraph ~~(d)~~(4), if applicable;
8. Hexavalent chromium and trivalent chromium emissions data in grams per year for the reporting period;
9. Sensitive receptor distances, if they are located within ¼ of mile from the center of the facility and facility maximum operating schedule (more than or less than or equal to 12 hours per day), if changed since submittal of the initial compliance status report or subsequent ongoing compliance status and emission reports. Sensitive receptor distances shall be measured using methods provided in paragraph (h)(2)-(e)(11)(B);
10. A summary of any excess emissions or exceeded monitoring parameters as identified in the records required by paragraph ~~(j)~~(67);
11. A certification by a responsible official that the inspection and maintenance requirements in subdivision ~~(n)~~(h) were followed in accordance with the operation and maintenance plan for the source;
12. If the operation and maintenance plan required by subdivision ~~(n)~~(i) was not followed, an explanation of the reasons for not following the provisions, an assessment of whether any excess emissions and/or monitoring parameter excesses are believed to have occurred, and a copy of the record(s) required by paragraph ~~(o)~~(j)(1) documenting that the operation and maintenance plan was not followed;

13. If applicable, results of periodic smoke tests demonstrating capture efficiency of ~~ventilation system(s)~~an add-on air pollution control device or add-on non-ventilated air pollution control device conducted during the reporting period;
14. A description of any changes in monitoring, processes, or controls since the last reporting period;
15. A statement that the owner or operator of a facility, or personnel designated by the owner or operator of a facility has, within the last 2 years, completed a ~~District~~SCAQMD-approved training program pursuant to ~~paragraph (e)(7)~~subdivision (j);
16. Add-on air pollution ventilation measurements conducted during the most recent successful SCAQMD approved source test that include:
 - (A) The velocity of each collection slot, including the velocity values that would be 95% and 90% of the source-tested value.
 - (B) For push-pull systems, the pressure of each push air manifold, including the pressure values that would be 110%, 105%, 95%, and 90% of the source-tested value;
17. A summary of any pollution prevention measures that the facility has implemented that eliminates or reduces the use of hexavalent chromium in the chromium electroplating or chromic acid anodizing process and associated process tanks.
18. ~~Updated~~ Information on calculations for the building enclosure envelope pursuant to paragraph (e)(1), including locations and dimensions of openings that are counted towards the applicable building envelope allowance.
169. The name, title, and signature of the responsible official who is certifying the accuracy of the report; and
1720. The date of the report.

Appendix 4—Notification of Construction Reports.

Notification of Construction reports shall contain the following information:

- ~~(A) The owner or operator's name, title, and address;~~
- ~~(B) The address (i.e., physical location) or proposed address of the source if different from the owner's or operator's;~~
- ~~(C) A notification of intention to construct a new source or make any physical or operational changes to a source that may meet or has been determined to meet the criteria for a modification;~~
- ~~(D) The expected commencement and completion dates of the construction or modification;~~
- ~~(E) The anticipated date of (initial) startup of the source;~~
- ~~(F) The type of process operation to be performed (hard or decorative chromium electroplating, or chromic acid anodizing);~~
- ~~(G) A description of the air pollution control technique to be used to control emissions, such as preliminary design drawings and design capacity if an add-on air pollution control device is used; and~~
- ~~(H) An estimate of emissions from the source based on engineering calculations and vendor information on control device efficiency, expressed in units consistent with the emission limits of this subpart. Calculations of emission estimates should be in sufficient detail to permit assessment of the validity of the calculations.~~

Note: ~~A facility can fulfill these report content requirements by complying with the District's new source review rule or policy, provided similar information is obtained.~~

Appendix 4 – Summary of Inspection and Maintenance Requirements**Table 4-1:****Summary of Inspection and Maintenance Requirements for Sources Using Add-on Air Pollution Control Device(s) or Add-On Non-Ventilated Air Pollution Control Device(s)**

<u>Control Technique/Equipment</u>	<u>Inspection and Maintenance Requirements</u>	<u>Frequency</u>
<u>Composite mesh-pad (CMP) system.</u>	<u>1. Visually inspect device to ensure that there is proper drainage, no unusual chromic acid buildup on the pads, and no evidence of chemical attack that affects the structural integrity of the device.</u>	<u>1. Once per quarter.</u>
	<u>2. Visually inspect back portion of the mesh pad closest to the fan to ensure there is no breakthrough of chromic acid mist.</u>	<u>2. Once per quarter.</u>
	<u>3. Visually inspect ductwork from tank to the control device to ensure there are no leaks.</u>	<u>3. Once per quarter.</u>
	<u>4. Perform washdown of the composite mesh-pads in accordance with manufacturer's recommendations.</u>	<u>4. Per manufacturer.</u>
<u>Packed-bed scrubber (PBS)</u>	<u>1. Visually inspect device to ensure there is proper drainage, no unusual chromic acid buildup on the packed-beds, and no evidence of chemical attack that affects the structural integrity of the device.</u>	<u>1. Once per quarter.</u>
	<u>2. Visually inspect back portion of the chevron blade mist eliminator to ensure that it is dry and there is no breakthrough of chromic acid mist.</u>	<u>2. Once per quarter.</u>
	<u>3. Same as number 3 above for CMP system.</u>	<u>3. Once per quarter.</u>
	<u>4. Add fresh makeup water to the packed-bed^A.</u>	<u>4. Whenever makeup is added.</u>

^A Horizontal packed-bed scrubbers without continuous recirculation must add make-up water to the top of the packed-bed.

Table 4-1:
Summary of Inspection and Maintenance Requirements for Sources Using Add-on
Air Pollution Control Device(s) or Add-On Non-Ventilated Air Pollution Control
Device(s) (cont)

<u>Control Technique/Equipment</u>	<u>Inspection and Maintenance Requirements</u>	<u>Frequency</u>
<u>PBS/CMP system</u>	<ol style="list-style-type: none"> 1. <u>Same as for CMP system.</u> 2. <u>Same as for CMP system.</u> 	<ol style="list-style-type: none"> 1. <u>Once per quarter.</u> 2. <u>Once per quarter.</u>
	<ol style="list-style-type: none"> 3. <u>Same as for CMP system.</u> 4. <u>Same as for CMP system</u> 	<ol style="list-style-type: none"> 3. <u>Once per quarter.</u> 4. <u>Per manufacturer.</u>
<u>Fiber-bed mist eliminator^B</u>	<ol style="list-style-type: none"> 1. <u>Visually inspect fiber-bed unit and prefiltering device to ensure there is proper drainage, no unusual chromic acid buildup in the units, and no evidence of chemical attack that affects the structural integrity of the devices.</u> 2. <u>Visually inspect ductwork from tank or tanks to the control device to ensure there are no leaks.</u> 3. <u>Perform washdown of fiber elements in accordance with manufacturer's recommendations.</u> 	<ol style="list-style-type: none"> 1. <u>Once per quarter.</u> 2. <u>Once per quarter.</u> 3. <u>Per manufacturer.</u>
<u>High Efficiency Particulate Arrestors filter (HEPA)</u>	<ol style="list-style-type: none"> 1. <u>Look for changes in the pressure drop.</u> 2. <u>Replace HEPA filter.</u> 	<ol style="list-style-type: none"> 1. <u>Once per week.</u> 2. <u>Per manufacturer's specifications or SCAQMD's requirement.</u>

^B Inspection and maintenance requirements for the control device installed upstream of the fiber-bed mist eliminator to prevent plugging do not apply as long as the inspection and maintenance requirements for the fiber-bed unit are followed.

Table 4-1:
Summary of Inspection and Maintenance Requirements for Sources Using Add-on
Air Pollution Control Device(s) or Add-On Non-Ventilated Air Pollution Control
Device(s) (cont)

<u>Control Technique/Equipment</u>	<u>Inspection and Maintenance Requirements</u>	<u>Frequency</u>
<u>Chromium Tank Covers</u>	<ol style="list-style-type: none"> <li>1. <u>Drain the air-inlet (purge air) valves at the end of each day that the tank is in operation.</u> <li>2. <u>Visually inspect access door seals and membranes for integrity.</u> <li>3. <u>Drain the evacuation unit directly into the electroplating tank or into the rinse tanks (for recycle into the electroplating tank).</u> <li>4. <u>Visually inspect membranes for perforations using a light source that adequately illuminates the membrane (e.g., Grainger model No. 6X971 Fluorescent Hand Lamp).</u> <li>5. <u>Visually inspect all clamps for proper operation; replace as needed.</u> <li>6. <u>Clean or replace filters on evacuation unit.</u> <li>7. <u>Visually inspect piping to, piping from, and body of evacuation unit to ensure there are no leaks and no evidence of chemical attack.</u> <li>8. <u>Replace access door seals, membrane evacuation unit filter, and purge air inlet check valves in accordance with the manufacturer's recommendations.</u> 	<ol style="list-style-type: none"> <li>1. <u>Once per day.</u> <li>2. <u>Once per week.</u> <li>3. <u>Once per week.</u> <li>4. <u>Once per month.</u> <li>5. <u>Once per month.</u> <li>6. <u>Once per month.</u> <li>7. <u>Once per quarter.</u> <li>8. <u>Per manufacturer.</u>
<u>Pitot tube</u>	<u>Backflush with water, or remove from the duct and rinse with fresh water. Replace in the duct and rotate 180 degrees to ensure that the same zero reading is obtained. Check Pitot tube ends for damage. Replace Pitot tube if cracked or fatigued.</u>	<u>Once per quarter.</u>
<u>Ampere-hour meter</u>	<u>Install and maintain per manufacturer's specifications.</u>	<u>Per manufacturer.</u>

Table 4-2:
Additional Inspection and Maintenance Requirements for Tier I, II, and III
Hexavalent Chromium Tank(s)

<u>Control Technique/Equipment</u>	<u>Inspection and Maintenance Requirements</u>	<u>Frequency</u>
<u>Temperature Gauge</u>	1. <u>Install and maintain per manufacturer's specification at each Tier I, II, and III Hexavalent Chromium Tank.</u>	1. <u>Per manufacturer.</u>
	2. <u>Calibrated or confirmed to be accurate.</u>	2. <u>Once per year.</u>
<u>Collection Slots and Push Air Manifolds for Push-Pull Systems</u>	1. <u>Visually inspect slots and push air manifolds to ensure that there are no obstructions or clogs.</u>	1. <u>Once per week.</u>
	2. <u>Clean slots or push air manifolds.</u>	2. <u>Once every 180 days.</u>
	3. <u>Measure slot velocity of each slot and pressure at each push air manifold using a hot-wire anemometer, vein anemometer, or approved device</u>	3. <u>Once every 180 days.</u>
<u>Air Flow Gauges</u>	<u>Install and maintain per manufacturer's specifications.</u>	<u>Per manufacturer</u>

Table 4-3**Summary of Inspection and Maintenance Requirements for Sources Not Using Add-on Air Pollution Control Devices to Control Tier II Hexavalent Chromium Tank(s)**

<u>Equipment</u>	<u>Inspection and Maintenance Requirement for Monitoring Equipment</u>	<u>Frequency</u>
<u>Temperature Data Logger</u>	<u>1. Install and maintain per manufacturer's specification at each Tier II Hexavalent Chromium Tank.</u>	<u>1. Per manufacturer.</u>
	<u>2. Calibrate or confirm to be accurate.</u>	<u>2. Per manufacturer.</u>

Table 4-4**Summary of Inspection and Maintenance Requirements for Sources Using Chemical or Mechanical Fume Suppressants**

<u>Equipment</u>	<u>Inspection and Maintenance Requirement for Monitoring Equipment</u>	<u>Frequency</u>
<u>Ampere-hour meter</u>	<u>Install and maintain per manufacturer's specifications.</u>	<u>Per manufacturer.</u>
<u>Stalagmometer/ Tensiometer</u>	<u>Calibrate and maintain per manufacturer's specifications.</u>	<u>Per manufacturer.</u>

Appendix 5 – Smoke Test for ~~Chromium Tank Covers~~ Add-on Non-Ventilated Air Pollution Control Device

SMOKE TEST TO VERIFY THE SEAL INTEGRITY OF COVERS DESIGNED TO REDUCE CHROMIUM EMISSIONS FROM ~~ELECTROPLATING AND ANODIZING~~ TIER III HEXAVALENT CHROMIUM TANKS

1. Applicability and Principle

1.1 Applicability. This ~~alternative~~ method is applicable to all ~~hard chromium electroplating and anodizing operations~~ Tier III Hexavalent Chromium Tanks where a chromium tank cover or add-on non-ventilated air pollution control device is used on the tank for reducing chromium emissions.

1.2 Principle. During ~~chromium electroplating or anodizing~~ electrolytic operations, gas bubbles of hydrogen and oxygen gas generated during the process rise to the surface of the tank liquid and burst. Non-electrolytic tanks that are either heated or air sparged generate bubbles that rise to the surface. Upon bursting, tiny droplets of chromic acid (chromium mist) or hexavalent chromium laden liquid become entrained in the air above the tank. Because the chromium tank cover completely encloses the air above the tank, the chromium mist either falls back into the solution because of gravity or collects on the inside walls of the chromium tank cover and runs back into the solution. A semi-permeable membrane allows passage of the hydrogen and oxygen out of the chromium tank cover. A ~~lit~~ smoke device is placed inside the chromium tank cover to detect leaks at the membrane, joints, or seals.

2. Apparatus

2.1 Smoke device. Adequate to generate 500 to 1000 ft³ of smoke/20 ft² of tank surface area (~~e.g., Model #1A=15 SECONDS from Superior Signal, New York~~).

2.2 Small container. To hold the smoke device.

3. Procedure

Place the small container on a stable and flat area at center of the chromium tank cover (you can use a board and place it on the buss bars). Place the smoke device inside the container. After ~~lighting~~ activating the smoke device, quickly close the access door to avoid smoke from escaping. Let smoke device ~~completely burn; fill~~ the entire space under the chromium tank cover will now be filled with the smoke. ~~Observe for~~ An acceptable smoke test shall demonstrate no leaks of smoke from each seal, joint, and membrane of the chromium tank cover. Record these observations including the locations and a qualitative assessment of any leaks of smoke.

When all seals, joints, and membranes have been observed, evacuate the unit to remove the smoke from the chromium tank cover.

Appendix 6 – Approval of Alternatives for Specific Requirements

Section	Requirement	Description of Authority	Approving Agency	Concurring Agency
(a b)	Applicability	Assisting an owner or operator of a facility in determining whether a facility is subject to the ATCM rule	Distriet <u>SCAQMD</u>	
(e)(h)	Standards	Approving alternative standards	Distriet <u>SCAQMD</u>	U.S. EPA
(e)(1)(k)(<u>1</u>)	Performance <u>Source Test</u> Requirement	Waiving a performance-source test requirement	Distriet <u>SCAQMD</u>	
(e)(2)(k)(<u>1</u>)	Use of Existing Performance <u>Source</u> Tests	Approving the use of existing performance test results to demonstrate compliance, based on the “Description of the Technical Review Protocol for Performance Tests of California Chrome Plating Sources” (see Attachment 2 of the July 10, 1998 memorandum from John S. Seitz entitled, “Delegation of 40 CFR Part 63 General Provisions Authorities to State and Local Air Pollution Control Agencies.”)	Distriet <u>SCAQMD</u>	
(e)(3)(k)(<u>2</u>)	Test Method	Approving site-specific alternatives to test methods	Distriet <u>SCAQMD</u> for minor ¹ or intermediate ² changes	U.S. EPA for major ³ changes, and ARB
(e)(4)(k)(<u>4</u>)	Pre-Test Protocol	Approving pre-test protocols	Distriet <u>SCAQMD</u>	
(e)(5)(k)(<u>5</u>)	Test All Emission Points	Waiving the requirement to test all emission points	Distriet <u>SCAQMD</u>	
(e)(g)(m)	Parameter Monitoring	Approving site-specific changes in monitoring methodology	Distriet <u>SCAQMD</u> for minor ¹ or intermediate ⁴ changes	U.S. EPA for major ³ changes
(h)(n)	Inspection and Maintenance Requirements	Approving site-specific changes to inspection and maintenance requirements	Distriet <u>SCAQMD</u>	

Section	Requirement	Description of Authority	Approving Agency	Concurring Agency
(i) (n)	Operation and Maintenance Plans	Approving or requiring site-specific changes to operation and maintenance plans	District <u>SCAQMD</u>	
(j)(1)- (10)(o)(1) - (o)(11)	Recordkeeping	Waiving or altering recordkeeping requirements	District <u>SCAQMD</u>	U.S. EPA for major ³ changes
(j)(12)(o)(12)	Retention of Records	Waiving or altering the requirement to retain records for 5 years	District <u>SCAQMD</u>	U.S. EPA for major ³ changes
(k) (p)	Reporting	Waiving or altering reporting requirements	District <u>SCAQMD</u>	U.S. EPA ⁵ for major ³ changes

- 1 Minor change to a test method or monitoring is a modification to a federally enforceable test method or monitoring that (a) does not decrease the stringency of the emission limitation or standard or the compliance and enforcement measures for the relevant standard; (b) has no national significance (e.g., does not affect implementation of the ~~application~~-applicable regulation for other affected sources, does not set a national precedent, and individually does not result in a revision to the test method or monitoring requirement); and (c) is site specific, made to reflect or accommodate the operation characteristics, physical constraints, or safety concerns of an affected source.
- 2 Intermediate change to a test method is a within-method modification to a federally enforceable test method involving “proven technology” (generally accepted by the scientific community as equivalent or better) that is applied on a site-specific basis and that may have the potential to decrease the stringency of the associated emission limitation or standard. Intermediate changes are not approvable if they decrease the stringency of the standard.
- 3 Major change to a test method or monitoring is a modification to a federally enforceable test method or federally required monitoring that uses unproven technology or procedures or is an entirely new method (sometimes necessary when the required test method is unsuitable).
- 4 Intermediate change to monitoring is a modification to federally required monitoring involving “proven technology” (generally accepted by the scientific community as equivalent or better) that is applied on a site-specific basis and that may have the potential to decrease the stringency of the compliance and enforcement measures for the relevant standard.
- 5 U.S. EPA concurrence is not needed for adjustments made according to paragraph ~~(k)~~(p)(6).

**~~Appendix 7—Distance-Adjusted Ampere-Hour and Annual Emissions Limits
For Facilities Located More Than 25 Meters from a Residence or Sensitive
Receptor.~~**

~~Facilities subject to the interim requirements of paragraph (c)(9) or complying with the interim facility wide mass emission rate in paragraph (d)(4) may adjust the ampere hour or annual emission limits according to actual receptor distance. Ampere hour limits refer to actual consumption of electrical current from all hexavalent chromium electroplating and chromic acid anodizing operations at a facility.~~

~~Use the following tables to determine the appropriate ampere hours or annual emissions for compliance with the interim emission limitations in paragraph (c)(9), or compliance with the interim facility wide mass emission rate in paragraph (d)(4) according to the distance to the nearest receptor. Receptor distance is measured as follows:~~

**Table 7-1
Measuring Receptor Distance**

Source Type	Measure From:	Measure To:
Point Source, Single Stack	Stack	Property Line of Nearest Receptor
Point Source, Multiple Stacks	Centroid of Stacks	Property Line of Nearest Receptor
Volume Source No Stack	Center of Building	Property Line of Nearest Receptor

Table 7-2
Hexavalent Chromium Electroplating and Chromic Acid Anodizing
Operation Vented to Air Pollution Control Device(s) Normally Operating 12
Hours Per Day or Less

Distance to Nearest Receptor (m)	25	30	35	40	45	50	55	60
Ampere Hours/yr (x10⁶)	1.60	1.74	1.88	2.03	2.22	2.44	2.69	2.98
Annual Emissions (lbs/yr)	0.036	0.039	0.042	0.045	0.049	0.054	0.060	0.066
Distance to Nearest Receptor (m)	65	70	75	80	85	90	95	100
Ampere Hours/yr (x10⁶)	3.36	3.84	4.48	4.87	5.33	5.88	6.56	7.42
Annual Emissions (lbs/yr)	0.074	0.085	0.099	0.108	0.118	0.130	0.145	0.164

Table 7-3
Any Hexavalent Chromium Electroplating and Chromic Acid Anodizing
Operation Vented to Air Pollution Control Device(s) Normally Operating
More Than 12 Hours Per Day

Distance to Nearest Receptor (m)	25	30	35	40	45	50	55	60
Ampere Hours/yr (x10⁶)	1.80	1.80	1.80	1.80	1.80	1.80	1.92	2.05
Annual Emissions (lbs/yr)	0.039	0.039	0.039	0.039	0.039	0.039	0.042	0.044
Distance to Nearest Receptor (m)	65	70	75	80	85	90	95	100
Ampere Hours/yr (x10⁶)	2.20	2.38	2.58	2.74	2.92	3.12	3.35	3.62
Annual Emissions (lbs/yr)	0.048	0.051	0.056	0.059	0.063	0.068	0.073	0.078

Table 7-4
Decorative Chromium Electroplating and Chromic Acid Anodizing
Operations Without Air Pollution Control

Distance to Nearest Receptor (m)	25	30	35	40	45	50	55	60
Ampere Hours/yr (x10⁶)	1.15	1.31	1.52	1.80	2.22	2.89	3.19	3.56
Annual Emissions (lbs/yr)	0.025	0.028	0.033	0.039	0.048	0.063	0.069	0.077
Distance to Nearest Receptor (m)	65	70	75	80	85	90	95	100
Ampere Hours/yr (x10⁶)	4.03	4.64	5.47	5.92	6.46	7.10	7.88	8.87
Annual Emissions (lbs/yr)	0.088	0.101	0.119	0.129	0.140	0.154	0.171	0.193

**Appendix 78 – Information Demonstrating an Alternative Method(s) of
Compliance Pursuant to ~~Paragraph (d)(6)~~.Subdivision (i)**

The owner or operator of a facility applying for approval of an alternative method of compliance must submit to the ~~District Executive Officer~~ the following information.

1. A ~~performance source~~ test as specified in subdivision (e) ~~i~~ that is submitted after receipt of the SCAQMD Permit to Construct. The test shall have been conducted in a manner consistent with normal electroplating or anodizing operations.
2. A demonstration that the alternative method achieves an equal or greater amount of reductions in hexavalent chromium emissions than would be achieved with direct compliance with the applicable emission rate in paragraphs (e)(11)(A), (e)(12)(A)(ii), or (e)(13)(A)(iv)(h)(2) or (h)(4).
3. Calculations based on scientifically valid risk assessment methodologies demonstrating that the alternative method results in reducing risk equally or greater than the risk reduction that would be achieved by direct compliance with the applicable emission rate ~~in Table 2 of subparagraph (e)(11)(A), (e)(12)(A)(ii), or (e)(13)(A)(iv)~~. A facility using in-tank controls shall only be modeled as a volume source and the resulting risk shall be compared to the same facility modeled as a point source.
4. Documentation which demonstrates that the method is enforceable, including an operation and maintenance plan, an inspection and maintenance schedule, and a recordkeeping plan.
5. A demonstration that the facility is at least 275 metersfeet from a sensitive receptor.

Appendix ~~89~~ – Smoke Test to Demonstrate Capture Efficiency for ~~Ventilation Systems of an~~ Add-on Air Pollution Control Device(s) Pursuant to Paragraph ~~(ek)(76)~~.

1. Applicability and Principle
 - 1.1 Applicability. This method is applicable to all hard and decorative chromium electroplating and chromic acid anodizing operations where an add-on air pollution control device is used to reduce chromium emissions from the chromium electroplating or anodizing tank.
 - 1.2 Principle. During chromium electroplating or anodizing operations, bubbles of hydrogen and oxygen gas generated during the process rise to the surface of the tank liquid and burst. Upon bursting, tiny droplets of chromic acid (chromium mist) become entrained in the air above the tank. Collection of this chromium mist is achieved ~~by the ventilation system associated with the add-on air pollution control device for the tank(s) where chromium emissions are reduced downstream.~~ Emission control efficiency at the exhaust of an add-on control device is related to capture efficiency at the inlet of the ventilation system add-on air pollution control device. For this reason, it is imperative that 100% capture efficiency is maintained. A smoke device placed within the area where collection of chromic mist by the ~~ventilation system~~ add-on air pollution control device occurs reveals this capture efficiency.
2. Apparatus
 - 2.1 Smoke Generator. Adequate to produce a persistent stream of visible smoke ~~(e.g., Model #15-049 Tel-Tru™ T-T Smoke Sticks from E. Vernon Hill, Incorporated).~~
3. Testing Conditions

The smoke test shall be conducted while the add-on air pollution control device is in normal operation and under typical draft conditions representative of the facility's chromium electroplating and/or chromic acid anodizing operations. This includes cooling fans and openings affecting draft conditions around the tank area including, but not limited to, vents, windows, doorways, bay doors, and roll-ups. The smoke generator must be at full generation during the entire test and operated according to manufacturer's suggested use.
3. Procedure

The smoke test shall be conducted over a minimum twelve point matrix evenly distributed over the entire liquid surface of each chromium electroplating or chromic acid anodizing tank vented to the add-on air pollution control device. Place the aperture of the smoke device at each point of the matrix at a height within one inch

above the tank top. Observe collection of the smoke to the collection location(s) of the ~~ventilation system~~add-on air pollution control device. An acceptable smoke test shall demonstrate a direct stream to the collection location(s) of the ~~ventilation system~~add-on air pollution control device without meanderings out of this direct path. Record these observations at each of the points on the matrix providing a qualitative assessment of the collection of smoke to the ~~ventilation system~~add-on air pollution control device. The test shall also be documented by photographs or video at each point of the matrix.

Appendix 910 – Surface Tension Measurement Procedure for a Stalagmometer

The stalagmometer shall first be properly cleaned before being used for the first time and after a period of storage. Properly clean the stalagmometer using the following procedure:

1. Set up stalagmometer in stand in a fume hood.
2. Place a clean 150 mL beaker underneath the stalagmometer then fill with reagent grade concentrated nitric acid. Immerse bottom tip (approximately ½”) of stalagmometer into the beaker.
3. Squeeze rubber bulb and pinch at the arrow up (1) position to collapse. Place bulb end securely on top end of stalagmometer. Carefully draw the nitric acid by pinching the arrow up (1) position until the level is above the top etched line.
4. Allow nitric acid to remain in stalagmometer for 5 minutes and then carefully remove the bulb allowing the acid to completely drain.
5. Fill a clean 150 mL beaker with distilled or deionized water. Using the rubber bulb per the instructions in Step #3, rinse and drain stalagmometer with deionized or distilled water until the inside is “water break” free.
6. Fill a clean 150 mL beaker with isopropyl alcohol. Again using the rubber bulb per Step #3, rinse and drain stalagmometer twice with isopropyl alcohol and allow the stalagmometer to dry completely.
7. Take a sample of the solution to be tested and adjust the solution to room temperature. Measure the specific gravity and record reading.
8. Fill a clean 150 mL beaker with solution to be tested. Immerse bottom end of stalagmometer into the beaker. Fill the stalagmometer per instructions in Step #3, making sure that the solution level is above the top etched line.
9. Raise the stalagmometer so that the bottom end is completely out of solution. Remove bulb and immediately place a finger on the top end of the stalagmometer. Carefully use the finger to bring the solution level down to the top etched line. Do not release finger at this time.
10. “Wipe” the excess solution on the lower tip by touching it against the side of the beaker.
11. Release fingertip to allow solution to drain and count number of drops until the level reaches the bottom etched line.

Calculations for Surface Tension

$$\text{Surface tension (dynes/cm)} = \frac{S_w * N_w * D}{N * D_w}$$

S_w = Surface tension of water at 25°C or 77°F (72.75 dynes/cm)

N_w = water drop number etched on instrument

D = measured specific gravity (g/ml)

N = # of solution drops

D_w = water density (1.0 g/mL)

PRECAUTIONS:

1. Make sure the stalagmometer is clean (no sludge or film)
2. No chips, cracks, etc
3. Vertical placement
4. No vibration
5. 20 drops per minute rate (10 dynes/cm) +/- 1 drop per minute
6. Performance checked with water. The number of drops etched on the instrument shall be verified with deionized water to +/- 1 drop. If the number of drops are not within 1 drop, then the stalagmometer shall be cleaned. If the cleaning process does not bring the drop count within 1 drop of the etched number on the instrument, then the operator shall:
 - a) Purchase a new stalagmometer; or
 - b) Use the number of drops recorded for the distilled water run as (N_w) in the equation instead of the number of drops etched on the stalagmometer.
7. Sample at room temperature.

Appendix 10 – Tier II and Tier III Hexavalent Chromium Tank Thresholds

1. Tier II Tank hexavalent chromium concentrations shall remain in the concentration range for the specified temperature and be required to comply with ~~subparagraph (h)(45)(B)~~. Tanks that exceed the hexavalent chromium concentration for a corresponding temperature for Tier II Tanks shall be considered a Tier III Tank and shall be required to comply with subparagraph (h)(4)(A).

<u>Temperature (° F)</u>	<u>Tier II Tank Hexavalent Chromium Concentration (ppm)</u>	<u>Tier III Tank Hexavalent Chromium Concentration (ppm)</u>
<u>140 to <145° F</u>	<u>5,200 to <10,400</u>	<u>≥10,400</u>
<u>145 to <150° F</u>	<u>2,700 to <5,500</u>	<u>≥5,500</u>
<u>150 to <155° F</u>	<u>1,400 to <2,900</u>	<u>≥2,900</u>
<u>155 to <160° F</u>	<u>700 to <1,600</u>	<u>≥1,600</u>
<u>160 to <165° F</u>	<u>400 to <800</u>	<u>≥800</u>
<u>165 to <170° F</u>	<u>180 to <400</u>	<u>≥400</u>
<u>≥170° F</u>	<u>≥100 to <200</u>	<u>≥200</u>

2. Electrolytic tanks, such as chromium electroplating or chromic acid anodizing tanks, with hexavalent chromium concentration greater than 1,000 ppm shall be considered a Tier III tank regardless of operating temperature.
3. Air sparged tanks with a hexavalent chromium concentration greater than 1,000 ppm shall be considered a Tier III tank regardless of operating temperature.
4. The owner or operator of a facility shall not be subject to the requirement of subparagraph (h)(4)(A) to vent a Tier III Hexavalent Chromium Tank to an add-on air pollution control device for one tank at a facility if the tank meets the following requirements:
- The surface area is less than or equal to four (4) square feet;
 - The hexavalent chromium concentration is less than or equal to 11,000 ppm;
 - The tank is operated and permitted at less than or equal to 210° F;
 - The tank is operated at a temperature between 170-210° F for less than or equal to two and one-half (2.5) hours per week; and
 - The tank complies with the tank cover requirements in paragraph (h)(5) and the temperature data logger requirements in paragraph (n)(3), and the data logger must log the duration of time and temperature of the tank to demonstrate compliance with (d) above.

A Tier III Tank that fails to comply with any of the conditions listed in a through e shall be subject to subparagraph (h)(4)(A).

ATTACHMENT G

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final Staff Report

**Proposed Amended Rule 1469 – Hexavalent Chromium Emissions
from Chromium Electroplating and
Chromic Acid Anodizing Operations**

November 2018

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	ES-1
CHAPTER 1: BACKGROUND	
INTRODUCTION	1-1
BACKGROUND	1-1
HEXAVALENT CHROMIUM	1-3
REGULATORY HISTORY	1-4
AMBIENT AIR MONITORING NEAR CHROMIC ACID ANODIZING FACILITIES	1-9
AFFECTED RULE 1469 FACILITIES	1-12
PROCESS DESCRIPTION	1-14
SCAQMD SAMPLING	1-16
SUMMARY OF SOURCE TEST RESULTS FOR PLATING AND ANODIZING TANKS	1-24
SITE VISITS	1-26
NEED FOR PROPOSED AMENDMENTS TO RULE 1469	1-28
CONTROL TECHNOLOGIES	1-30
CHAPTER 2: SUMMARY OF PROPOSED AMENDED RULE 1469	
PROPOSED AMENDMENTS TO RULE 1469	2-1
CHAPTER 3: IMPACT ASSESSMENT	
AFFECTED SOURCES	3-1
EMISSION IMPACTS	3-1
CALIFORNIA ENVIRONMENTAL QUALITY ACT	3-1
SOCIOECONOMIC IMPACT ASSESSMENT	3-1
DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY CODE SECTION 40727	3-1
COMPARATIVE ANALYSIS	3-2
REFERENCES	R-1
APPENDIX A: RESPONSE TO COMMENTS	A-1

TABLES AND FIGURES

- Figure 1-1:** Annual Average Hexavalent Chromium Levels at Newport Beach Facility
- Figure 1-2:** Photograph Taken During Tank Testing
- Figure 1-3:** Categorization of Tier I, Tier II, and Tier III Hexavalent Chromium Tanks
- Figure 1-4:** Differences Among Tier I, Tier II, and Tier III Hexavalent Chromium Tanks
- Figure 1-5:** Distribution of Most Recent Source Tests
- Figure 1-6:** Slot Velocity Measurements of Emission Collection Systems at Multiple Facilities
- Figure 1-7:** PAR 1469 Approach
- Figure 1-8:** Photographs of Trivalent Chromium Electroplated Products
- Figure 2-1:** Roof View of Stack Opening and Enclosure Opening
- Figure 2-2:** Building Enclosure Openings Required To Be Closed
- Figure 2-3:** Compressed Air Drying Near Tier II or Tier III Tank
- Figure 2-4:** Table 1: Hexavalent Chromium Emission Limits for Hexavalent Hard and Decorative Chromium Electroplating and Chromic Acid Anodizing Tanks
- Figure 2-5:** Table 2: Permit Submittal Schedule for Add-on Air Pollution Control Devices for Previously Existing Tier III Hexavalent Chromium Tanks
- Figure 2-6:** Flowchart Showing Source Test Requirements
- Figure 2-7:** Revised Certification Timeline
- Figure 2-8:** Table 4: Pressure and Air Flow Measurement Parameters
- Figure 2-9:** Table 5: Add-on Air Pollution Control Device Parameter Monitoring
-
- Table 1-1:** 2012 NESHAP Revised Emission Limits
- Table 1-2:** Newport Beach Facility Hexavalent Chromium Emissions 4/4/14
- Table 1-3:** Newport Beach Facility Hexavalent Chromium Emissions 4/16/14
- Table 1-4:** NAICS Codes for PAR 1469 Affected Facilities
- Table 1-5:** SCAQMD Sample Results of Sealing Tanks
- Table 1-6:** SCAQMD Sample Results of Chromate Conversion and Dye Tanks
- Table 1-7:** SCAQMD Sample Results of Rinse, Cleaner, and Desmutt Tanks
- Table 1-8:** SCAQMD Sample Results of Passivation, Etch, Neutralizer, and Stripping Tanks
- Table 1-9:** Results for Electrolytic Tier III Tank
- Table 1-10:** Results of Sampling of Tanks at Various Temperature
- Table 1-11:** Operational Conditions That Result in Hexavalent Chromium Emissions ≥ 0.20 mg/hr
- Table 1-12:** Chemical Fume Suppressants Approved for Use at Specific Surface Tensions
- Table 1-13:** Summary Table of Trivalent Chromium Electroplating
- Table 1-14:** PAVCO's Comparison of Trivalent Chromium and Hexavalent Chromium Electroplating
- Table 2-1:** Hexavalent Chromium Emission Limits for Existing Tanks
- Table 2-2:** Permit Application Submittal Schedule for Add-On Air Pollution Control Device
- Table 2-3:** Submittal Dates of Source Test Protocol
- Table 2-4:** Periodic Measurement to Demonstrate Capture Efficiency
- Table 2-5:** Pressure and Air Flow Measurement Parameters

EXECUTIVE SUMMARY

South Coast Air Quality Management (SCAQMD) Rule 1169 – Hexavalent Chromium – Chrome Plating and Chromic Acid Anodizing was adopted on June 3, 1988 and applied to chromium electroplating (hard and decorative) and chromic acid anodizing processes. On October 9, 1998, Rule 1169 was repealed and provisions were incorporated in Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations as part of Regulation XIV. This regulation includes rules regulating toxics and non-criteria pollutants.

Based on sampling, emissions testing, and ambient monitoring conducted near several facilities subject to Rule 1469 it was determined that increased concentrations of hexavalent chromium in a tank and application of heat and/or air sparging can result in significant emissions from a hexavalent chromium containing tank depending on the hexavalent chromium concentration and temperature. Proposed Amended Rule 1469 (PAR 1469) addresses hexavalent chromium containing tanks not previously known to be sources of hexavalent chromium emissions and includes requirements such as building enclosures, best management practices, and housekeeping provisions that minimize the release of fugitive emissions from chromium electroplating and chromic acid anodizing operations. PAR 1469 also has provisions to ensure continuous proper operation of point source pollution controls and contingency provisions to add pollution controls for a building enclosure for any facility that repeatedly fails to comply with the point source emission requirements or fails to shut down a tank after not passing a test to evaluate the collection efficiency of a tank with pollution controls.

PAR 1469 also incorporates the changes made to the United States Environmental Protection Agency's (U.S. EPA's) Chrome Plating National Emission Standards for Hazardous Air Pollutants (NESHAP) amended in September 2012. The NESHAP achieves further hexavalent chromium emission reductions by requiring more stringent emission limits for all facilities. For facilities that utilize chemical fume suppressants, surface tension limits have been lowered. Under Title 42 of the United States Code (U.S.C.) Section 7416, SCAQMD has the authority to adopt and enforce either equally effective or more stringent regulations than the NESHAP. Under California Health and Safety Code (H&SC) Section 39666(d), SCAQMD has the authority to adopt and enforce either equally effective or more stringent regulations than the NESHAP or the state Airborne Toxic Control Measure (ATCM).

This Draft Staff Report is organized into three chapters. Chapter 1 provides background information regarding PAR 1469 and provides a general description of electroplating and chromic acid anodizing operations and associated hexavalent chromium generating tanks. Chapter 1 also provides the results of ambient monitoring and emissions testing that SCAQMD staff has conducted at and near Rule 1469 facilities. Chapter 2 provides a summary and explanation of provisions in PAR 1469. Chapter 3 provides a summary of the impact assessments, which includes the environmental analysis and socioeconomic impact assessment, draft findings, and the comparative analysis of PAR 1469.

CHAPTER 1: BACKGROUND

INTRODUCTION

BACKGROUND

HEXAVALENT CHROMIUM

REGULATORY HISTORY

**AMBIENT MONITORING NEAR CHROMIC ACID ANODIZING
FACILITIES**

AFFECTED RULE 1469 FACILITIES

PROCESS DESCRIPTION

SCAQMD SAMPLING

**SUMMARY OF SOURCE TEST RESULTS FOR PLATING AND
ANODIZING TANKS**

SITE VISITS

NEED FOR PROPOSED AMENDMENTS TO RULE 1469

CONTROL TECHNOLOGIES

INTRODUCTION

SCAQMD Rule 1469 establishes emission limits for hard and decorative electroplating and chromic acid anodizing operations based on throughputs and proximity to sensitive receptors and requires ongoing monitoring, initial performance testing of add-on control devices, housekeeping, reporting, and recordkeeping. The most recent amendment in 2008 incorporated the most stringent requirements of the amended state ATCM for Chrome Plating and Chromic Acid Anodizing Operations. The state ATCM had additional provisions to minimize hexavalent chromium emissions from compressed air cleaning, requirements for new facilities and record retention, and requirements for increased monitoring of air pollution controls.

PAR 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations is designed to reduce emissions from point sources that previously were not known to be significant sources of hexavalent chromium and to establish additional provisions to minimize the release of fugitive hexavalent chromium emissions from electroplating and chromic acid anodizing operations and associated processes. Off-site ambient monitoring and source testing near three chromic acid anodizing facilities identified uncontrolled sodium dichromate tanks to be the source of substantial hexavalent chromium emissions. These tanks need additional emission controls. Based on results from ambient monitoring and additional emissions testing and sampling, PAR 1469 establishes new requirements for certain hexavalent chromium process tanks associated with electroplating and chromic acid anodizing operations, incorporates additional requirements for building enclosures, provides comprehensive housekeeping requirements, and includes periodic source testing, and updates monitoring and reporting requirements to better control point and fugitive hexavalent chromium emissions. PAR 1469 is also designed to harmonize Rule 1469 with the 2012 National Emission Standards for Hazardous Air Pollutants (NESHAP) for Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks (Chrome Plating NESHAP).

BACKGROUND

Rule 1169 – Hexavalent Chromium – Chrome Plating and Chromic Acid Anodizing was adopted on June 3, 1988 and applies to chromium electroplating (hard and decorative) and chromic acid anodizing processes. On October 9, 1998, Rule 1169 was repealed and provisions were incorporated in Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations as part of Regulation XIV. This regulation includes rules regulating toxics and non-criteria pollutants.

Rulemaking for PAR 1469 was initiated by SCAQMD staff in 2015 as a result of findings from ambient air monitoring and sampling near a chromic acid anodizing facility in Newport Beach. SCAQMD staff had been conducting ambient air monitoring near the Newport Beach facility since 2009. In 2012 and 2013, levels of hexavalent chromium increased substantially. These increases triggered a series of further evaluations by SCAQMD staff, including additional monitoring, sampling, and engineering evaluations, which identified several conditions that contributed to the elevated hexavalent chromium levels. For example, cross-drafts in the building that housed the chromic acid anodizing process allowed emissions to escape out of the building and also interfered with the collection efficiency of pollution controls. High hexavalent chromium emissions from a heated sodium dichromate seal tank that was not regulated under Rule 1469 also contributed to the elevated levels. SCAQMD and the Newport Beach facility entered into a stipulated Order for

Abatement requiring the facility to shut down when ambient monitors detect an average ambient concentration exceeding a specified threshold level. As a result, the Newport Beach facility implemented significant changes to address hexavalent chromium emissions such as additional pollution controls for its chromic acid anodizing process line (including the heated sodium dichromate seal tank), and construction of a building enclosure under negative air vented to pollution controls. Average levels of hexavalent chromium near the Newport Beach facility have greatly declined since the facility implemented these changes and modified their operations.

In 2015, SCAQMD rules staff began site visits at other Rule 1469 facilities to get a better understanding of current operating conditions, such as types of building enclosures, and housekeeping practices, and to also evaluate other process tanks that could also be sources of hexavalent chromium emissions similar to a heated sodium dichromate seal tank. During this initial phase of the rule development process, SCAQMD staff, in a separate program was conducting air monitoring in the city of Paramount to investigate potential sources of hexavalent chromium near a metal forging facility. In October 2016, SCAQMD expanded its monitoring network in Paramount and began monitoring near a chromic acid anodizing facility. Initial monitored concentrations of hexavalent chromium were 26 nanograms per cubic meter (ng/m^3) near a Paramount facility. For comparison, the background levels of hexavalent chromium, based on the nearest Multiple Air Toxic Emission Study IV monitor data (Compton), was $0.1 \text{ ng}/\text{m}^3$. Further evaluation of the source of emissions again pointed to a heated sodium dichromate seal tank, combined with cross-drafts near a chromic acid anodizing tank and heated sodium dichromate seal tank that allowed emissions to flow directly out of the facility's building, as the main contributor.

Based on ambient monitoring data, sampling, and emissions testing, the application of heat and/or air sparging can result in substantial hexavalent chromium emissions from tanks. These emissions increase proportionately with the temperature and concentration of hexavalent chromium in the tank. PAR 1469 addresses tanks that were not previously known to be sources of hexavalent chromium emissions. It requires building enclosures, best management practices, and housekeeping provisions to minimize the release of fugitive emissions from these operations. PAR 1469 also has provisions to ensure the continuous proper operation of point source pollution controls.

PAR 1469 also incorporates the changes made to the U.S. EPA's Chrome Plating NESHAP amended in September 2012. The NESHAP achieves further hexavalent chromium emission reductions by requiring more stringent emission limits for all facilities. In addition to emission limit reductions, housekeeping measures have also been made more stringent. For facilities that utilize chemical fume suppressants, surface tension limits have been lowered. Under Title 42 of the U.S.C. Section 7416, SCAQMD has the authority to adopt and enforce either equally effective or more stringent regulations than the NESHAP. Under H&SC Section 39666(d), SCAQMD has the authority to adopt and enforce either equally effective or more stringent regulations than the NESHAP or the state ATCM.

Public Process

PAR 1469 is being developed through an extensive public process. A working group was formed to provide the public and stakeholders an opportunity to discuss important details about the

proposed amendments to the rule and provide SCAQMD staff with input during the rule development process. The working group is comprised of a variety of stakeholders including representatives from industry, consultants, environmental groups, community groups, and public agency representatives. SCAQMD has held 13 working group meetings on March 23, 2017, May 18, 2017, June 29, 2017, August 2, 2017, August 31, 2017, September 20, 2017, October 26, 2017, November 29, 2017, January 4, 2018, February 6, 2018, February 27, 2018, April 4, 2018, and July 17, 2018. Working group meetings for this rulemaking were well attended with approximately 100 people in attendance per meeting and another 35 people on the phone. On average, working group meetings were 3 to 4 hours long. In addition, SCAQMD held three Public Workshops on November 1, 2017, December 7, 2017, and February 8, 2018. Two additional public outreach meetings were held in August 2018 at the request of Supervisor Solis to better inform the public about PAR 1469.

HEXAVALENT CHROMIUM

A “toxic air contaminant” is defined as an “air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health” (H&SC Section 39655(a)). In 1986, CARB identified hexavalent chromium as a carcinogenic toxic air contaminant based on a review of available scientific evidence.

Hexavalent chromium was measured in each of SCAQMD’s Multiple Air Toxics Exposure Studies (MATES). These studies measured levels of air toxics in mostly residential or commercial areas. While MATES showed that hexavalent chromium levels have decreased over the past couple decades, this air pollutant was still the seventh largest contributor to air toxics cancer risk in the South Coast Air Basin (Basin) in the most recent MATES (MATES IV).

Hexavalent chromium may occur as aerosols or particulate matter in the air, which can be inhaled directly or deposited on soil or water, which can then be ingested. Contact with soil containing hexavalent chromium may transfer to the hands and then to the mouth. Young children may put their hands in their mouths more frequently than adults and therefore are more likely to consume contaminated soil. Chromic acid, a form of hexavalent chromium, is created as a mist during electroplating, which can be inhaled. Chromic acid can be absorbed through skin and ingested if deposited on the skin. Exposure to hexavalent chromium can increase the risk of developing certain types of cancer or result in other adverse health effects.

Inhalation of hexavalent chromium can cause both cancer and non-cancer health effects. Inhalation of hexavalent chromium over a long period of time increases the risk of lung cancer and nasal cancer. The non-cancer effects of being exposed to hexavalent chromium at high levels over time can cause or worsen health conditions such as irritation of the nose, throat and lungs; allergic symptoms (wheezing, shortness of breath); and nasal sores and perforation of the membrane separating the nostrils (for example, at very high air levels in workplaces).

California Environmental Protection Agency’s Office of Environmental Health Hazard Assessment (OEHHA) has developed cancer potency factors which can be used to estimate the cancer risk associated with exposure to hexavalent chromium. Based on OEHHA’s methodology to estimate health risk, the continual exposure to 0.045 ng/m^3 of hexavalent chromium for 30 years

would increase the cancer risk by 25 in a million for a residential or sensitive receptor. Exposure over shorter periods of time would be associated with smaller increases in cancer risk. In MATES IV, the average levels of hexavalent chromium in mostly residential and commercial areas across the South Coast Basin was 0.06 ng/m³. SCAQMD staff has taken measurements very close to facilities emitting hexavalent chromium and has found that hexavalent chromium levels near such facilities can be substantially higher than the background levels measured in MATES IV.

REGULATORY HISTORY

Chrome plating and chromic acid anodizing facilities are subject to local, state, and federal requirements. Rule 1469 incorporates provisions that are equal to or more stringent than the Chrome Plating state ATCM and federal NESHAP.

U.S. EPA NESHAP: Plating and Polishing Industry

In January 1995, the U.S. EPA promulgated the NESHAP for Chromium Emissions from Hard and Decorative Chromium Plating and Chromic Anodizing Tanks.

On June 12, 2008, the U.S. EPA issued 40 CFR Part 63 Subpart WWWW, the Plating and Polishing NESHAP for area sources. It addressed national air toxics standards for smaller-emitting sources, known as area sources, in the plating and polishing industry. The requirements apply to existing and new area sources in the plating and polishing rule. The rule affected existing and new plating and polishing facilities and applies to plating and polishing tanks, dry mechanical polishing operations, and thermal spraying operations that use or emit compounds of one or more of the following metal toxic air pollutants: cadmium, chromium, lead, manganese, and nickel. It includes management practices such as use of wetting agent/fume suppressants, use of tank covers or control devices, and capture and control of emissions from thermal spraying and dry mechanical polishing.

In September 2012, U.S. EPA amended 40 CFR Part 63.340, the NESHAP for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks. The federal regulation reduced emission limits, decreasing a facility's mass emissions. Chromium electroplating and chromic acid anodizing which utilize chemical fume suppressants must maintain their electroplating bath to 40 dynes/cm or less. The addition of perfluorooctane sulfonic acid (PFOS) based fume suppressants would be prohibited (see Chemical Fume Suppressants section under Control Technologies below).

The 2012 NESHAP for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks (Chrome Plating NESHAP) reduced emission limits for total chromium as shown in Table 1-1.

Table 1-1: 2012 NESHAP Revised Emission Limits

Operation	Previous Total Chromium Limits	2012 Total Chromium Limits
Large Hard Chromium Electroplating	0.015 mg/dscm	0.011 mg/dscm
Small Hard Chromium Electroplating	0.030 mg/dscm	0.015 mg/dscm
Decorative Chromium Electroplating	0.010 mg/dscm	0.007 mg/dscm
Chromium Anodizing	0.010 mg/dscm	0.007 mg/dscm

Housekeeping practices were added in Table 2 to 40 CFR 63.342, which applies to all source categories and are summarized below:

- Store any substance used in an affected chromium or chromium anodizing tank that contains hexavalent chromium in a closed container in an enclosed storage area and use a closed container when transporting.
- Install technology and implement practices to minimize spills of bath solution and reduce drag out when parts are being moved or rinsed from the tank.
- Clean-up spills from an affected chromium electroplating or chromium anodizing tank within 1 hour.
- Clean surfaces regularly.
- Prohibit buffing, grinding, or polishing operations in the same room as anodizing or electroplating unless a physical barrier is in place.
- Store chromium containing wastes generated from housekeeping activities in a manner that does not generate fugitive dust.

Chromium Plating ATCM

In February 1988, the California Air Resources Board (CARB) adopted the Chromium Plating ATCM to reduce emissions of hexavalent chromium from hard and decorative chromium electroplating and chromic acid anodizing operations. The ATCM required that all hard plating tanks and anodizing tanks be vented to emission collection systems and established best available control technology (BACT) for the equipment. It also established control efficiency limits for add-on air pollution control devices and alternative emission limits based on the annual hexavalent chromium emissions of plating and anodizing shops. More stringent limits were required of larger facilities than those of smaller facilities, with the goal of reducing emissions from plating and anodizing tanks by at least 95 percent.

On May 21, 1998, CARB amended the Chrome Plating ATCM to consolidate the requirements from both the state and federal chrome plating regulations. Emission limits for decorative chrome and chromic acid anodizing were replaced with emissions limits from the federal chrome plating regulation. The amendment also expanded the rule's applicability to trivalent chrome operations while continuing to regulate hexavalent chrome operations. It added performance test requirements, inspection and maintenance requirements, monitoring provisions, recordkeeping and reporting requirements, and provisions for requesting alternative requirements.

On October 24, 2007, CARB amended the ATCM a second time. The amended ATCM provided further hexavalent chromium emission reductions by requiring more stringent emission limits for some facilities and ensured that construction of new facilities are not sited near sensitive receptors.

Generally, except for small facilities, the limits required the installation or upgrade of add-on air pollution control devices at plating tanks. The amendment required the use of HEPA filters, which were found to reduce emissions by over 99.9 percent, or the use of controls that resulted in equivalent emissions reductions, at many facilities. In addition to emission limit changes, the ATCM also added housekeeping measures.

SCAQMD Rules

Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations is the primary air toxics rule that affects chromium electroplating and chromic acid anodizing operations. In addition to Rule 1469, Rule 1402 - Control of Toxic Air Contaminants from Existing Sources also applies to Rule 1469 facilities as discussed below.

Rule 1469 – Hexavalent Chromium

In January 1986, CARB identified hexavalent chromium as a toxic air contaminant in accordance with H&SC Sections 39650, *et seq.* Rule 1169 – Hexavalent Chromium – Chrome Plating and Chromic Acid Anodizing was one of the first source-specific toxic rules and was adopted on June 3, 1988 to reduce hexavalent chromium emissions from chromium electroplating (hard and decorative) and chromic acid anodizing processes. SCAQMD amended Rule 1169 in September 1989 and December 1990.

On October 9, 1998, SCAQMD adopted Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations and repealed Rule 1169. The 1998 adoption of Rule 1469 combined the requirements of Rule 1169, the Chrome Plating state ATCM, and federal NESHAP. Under H&SC Section 39666, air districts have the option of either directly enforcing the ATCM without adopting a regulation, or adopting an equally effective or more stringent regulation. Rule 1469 also included additional monitoring, recordkeeping and reporting requirements, and additional emission standards that in some cases are more stringent than existing requirements for hard and decorative chrome plating operations, and additional requirements for trivalent chrome plating operations, which were already widely practiced by the chrome plating industry.

On May 2, 2003, Rule 1469 was amended. The public rulemaking process included industry representatives, environmental and community groups, staff from SCAQMD and other agencies, technical experts, representatives from the Small Business Alliance and the Ethnic Community Advisory Group, a facilitator, and an independent observer. The proposed amendments set general requirements for all facilities and more stringent requirements for facilities for which the nearest residence or sensitive receptor is within 25 meters or for which the nearest school is within 100 meters. Facilities were required to meet an ampere-hour threshold that is based on a calculated cancer risk of 10 in a million or install controls. In general, facilities were required to meet an emission limit based on ampere-hour thresholds or estimate their cancer risk directly through an emissions inventory and health risk assessment. The 2003 amendments required installation of ampere-hour meters on plating and anodizing tanks, use of certified chemical fume suppressants, housekeeping practices, operating training and certification, and emission limits based on the distance to the nearest residence or sensitive receptor.

On December 5, 2008, Rule 1469 was amended to be consistent with the recently amended Chrome Plating state ATCM. The amendment further reduced hexavalent chromium emissions by setting lower emission limits for some operators and establishing more stringent housekeeping requirements. Additional provisions beyond the ATCM were also incorporated such as more detailed housekeeping requirements, enhanced monitoring, recordkeeping for waste materials, and testing of add-on air pollution control devices. These requirements were intended to ensure compliance and minimize drag-out emissions during chromium electroplating and chromic acid anodizing operations.

Rule 1402 – Control of Toxic Air Contaminants from Existing Sources

Rule 1402 – Control of Toxic Air Contaminants from Existing Sources was adopted by the SCAQMD Governing Board in 1994 and last amended in 2016. The objective of Rule 1402 is to minimize health risks from air toxics. This rule applies to existing facilities within SCAQMD’s jurisdiction whose facility-wide toxic air contaminant emissions exceed specific risk levels. Rule 1402 is designed to implement the Air Toxics Hot Spots Program (AB 2588) and requires risk reduction measures if applicable. AB2588 is a statewide program that collects emissions data of air toxics, identifies facilities having localized impacts, determines health risks, and notifies affected individuals. Individual facilities found to emit high levels of air toxics must submit a Health Risk Assessment to estimate the health risks to the surrounding communities. AB 2588 also allows for air districts to designate “industry-wide source” facilities, where compliance may be handled collectively, rather than individual compliance that would impose severe economic hardships. SCAQMD has identified metal plating and finishing facilities as an industry-wide source category.

Although Rule 1469 facilities are in general identified as industry-wide sources under AB 2588, there are approximately 24 Rule 1469 facilities that are in the core AB 2588 program. Facilities in the core AB 2588 program are generally larger chromium plating or anodizing facilities and are required to report air toxic emissions annually and provide a more detailed air toxics emissions inventory every fourth year (i.e. quadrennial reporting). The AB 2588 emissions reporting covers Rule 1469 equipment as well as other air toxics emitting sources that are not covered under Rule 1469 such as chromium spraying operations, nickel and cadmium plating operations, and any other air toxics emitting processes or equipment. During this quadrennial toxics emissions reporting, SCAQMD staff calculates the facility’s priority score. If the priority score is over 10, the facility is required to submit an Air Toxics Inventory Report and Health Risk Assessment. Under Rule 1402, if the cancer health risk is above the action risk level (25 in a million), the facility must submit and implement a Risk Reduction Plan. The Health Risk Assessment is based upon emissions from all processes at the facility, in addition to Rule 1469 sources.

On October 7, 2016, Rule 1402 was amended to add provisions for Potentially High Risk Level Facilities where SCAQMD has evidence that the facility is contributing to a significant health risk – cancer risk greater than 100 in-a-million. Rule 1402 sets the hexavalent chromium reporting thresholds at 0.002 lb/yr; which once exceeded, requires a facility to submit a total facility air toxics emissions inventory to SCAQMD. In addition, state law (H&SC Section 44391) requires any facility with significant risk (100 in a million cancer risk or a chronic hazard index of 5.0 for Rule 1402) to reduce risk.

Other SCAQMD Toxics Rules Regulating Metal Particulates

PAR 1469 includes requirements that are generally based on provisions in other SCAQMD toxics rules, such as, building enclosures, housekeeping measures, best management practices and compliance plans. Examples of rules that include these types of provisions include Rule 1420.2 – Emission Standards for Lead from Metal Melting Facilities and Rule 1430 – Control of Emissions from Metal Grinding Operations at Metal Forging Facilities.

Rule 1420.2 addressed fugitive lead emissions through housekeeping and maintenance requirements, and total enclosures of areas where metal melting operations and associated operations are conducted. Additional requirements included a permanent total enclosure with negative air. Rule 1430 required the installation and implementation of point source controls for grinding operations, enclosures, and housekeeping measures at metal forging facilities. Both rules included parameter monitoring to provide greater assurance of continued compliance with point source add-on pollution control equipment.

2015 OEHHA Guidelines

On March 6, 2015, OEHHA approved revisions to their Risk Assessment Guidelines (2015 OEHHA Guidelines). The 2015 OEHHA Guidelines were triggered by the passage of the Children’s Health Protection Act of 1999 (SB 25, Escutia) requiring OEHHA to ensure infants and children are explicitly addressed in assessing risk. Over the past decade, advances in science have shown that early-life exposures to air toxics contribute to an increased estimated lifetime risk of developing cancer, or other adverse health effects, compared to exposures that occur in adulthood. The revised risk assessment methodology incorporates the most recent data on infants and childhood and adult exposure to air toxics. The 2015 OEHHA Guidelines incorporate age sensitivity factors and other methodology changes increases the estimated cancer risk for residential and sensitive receptors by more than three times for air toxics such as hexavalent chromium which have multiple pathways of exposure in addition to inhalation. Health risks for off-site worker receptors are similar between the previous and 2015 OEHHA Guidelines because the methodology for adulthood exposures remains relatively unchanged. Even though there may be no increase in air toxics emissions at a facility, the estimated cancer risk using the 2015 OEHHA Guidelines is expected to increase.

European Union’s European Chemicals Agency

On April 17, 2013, the European Union’s (EU’s) regulatory authority that implements legislation on chemical safety—the European Chemicals Agency (ECHA)—placed several of the most common forms of hexavalent chromium on its “Authorisation List,” citing them as carcinogenic and mutagenic, and classifying them as “substances of very high concern.” The compounds that ECHA singled out are chromium trioxide, acids generated from chromium trioxide, sodium dichromate, potassium dichromate, ammonium dichromate, potassium chromate, and sodium chromate. Several of these compounds are used extensively in the chrome electroplating and anodizing processes.

After an established sunset date, chemicals that are placed on the Authorisation List are prohibited from use in, and importation into the EU, unless companies that produce or use them submit applications to exempt them for specific uses. If an application is approved by ECHA, the chemical will continue to be permitted for those uses and in some cases for both upstream

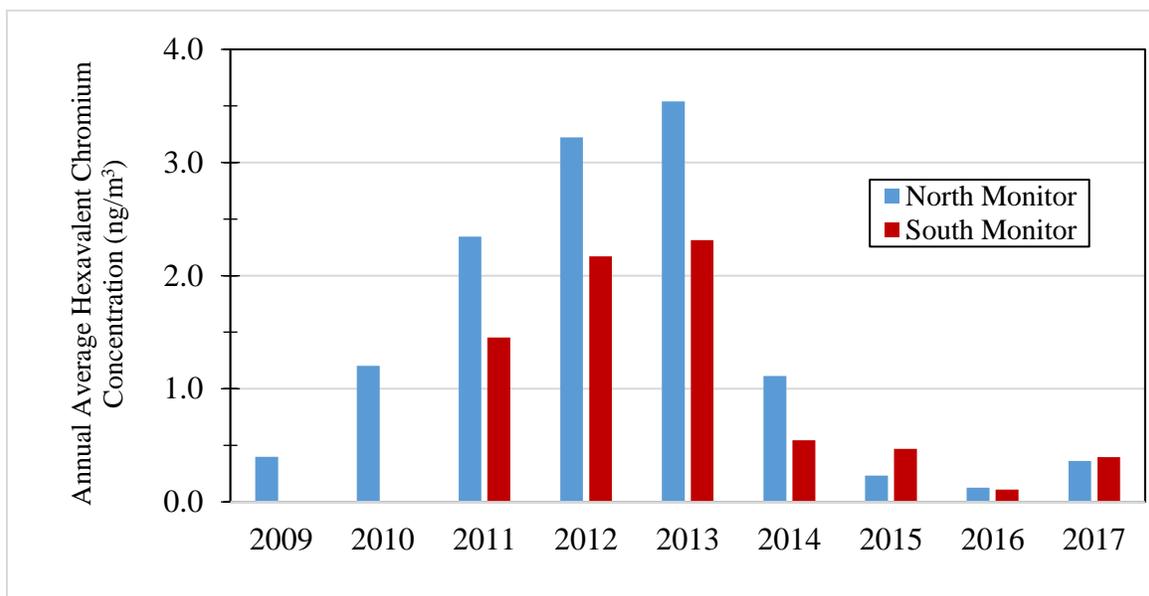
producers and downstream users. The sunset date for hexavalent chromium compounds was September 21, 2017.

The EU's Committees for Risk Assessment and Socio-economic Analysis have approved a number of authorisations or exemptions with specific conditions for use of hexavalent chromium applied to the surface of products. These authorisations cover a broad range of industry sectors such as car manufacturing, aerospace, aeronautics but also the manufacture of metals and construction equipment and is made on behalf of a number of downstream users. For more information on the EU's program and authorisations, please refer to their website at <https://echa.europa.eu>.

AMBIENT MONITORING AND SAMPLING NEAR AND AT CHROMIC ACID ANODIZING FACILITIES

SCAQMD staff conducted ambient monitoring of hexavalent chromium near five chromic acid anodizing facilities located in various cities in the Basin: a facility in Newport Beach, a facility in Paramount, a facility in Long Beach, and two facilities in Compton. Hexavalent chromium levels were elevated near the Newport Beach, Paramount, and Long Beach facilities. Based on the 10 monitoring sites in SCAQMD's MATES IV study, average hexavalent chromium levels in the Basin are approximately 0.06 ng/m³. None of the MATES IV monitors are near Rule 1469 facilities and are generally sited in both residential and light commercial areas throughout the Basin. The MATES IV study can be found here: <http://www.aqmd.gov/home/library/air-quality-data-studies/health-studies/mates-iv>.

Levels near the Newport Beach facility, as measured by monitors north and south of the facility, were averaging 0.4 ng/m³ in 2009 (as measured by the north monitor), and rose to over 3.5 ng/m³ in 2013. The facility began implementing changes to their operational procedures and by the end of 2016 installed and operated control equipment to minimize emissions; the average annual concentration dropped steadily from 2013 to 2016. Average concentration levels were below 0.2 ng/m³ in 2016. Average emissions in 2017 saw a slight rise to below 0.4 ng/m³. The increase in emissions in the year, including the more dramatic increase seen in July of 2017, may be attributed to construction work where concrete was being broken up, and the rubble was being removed from the facility.

Figure 1-1: Annual Average Hexavalent Chromium Levels at Newport Beach Facility

On April 4, 2014 and April 16, 2014, SCAQMD staff conducted source testing at the Newport Beach facility. The purpose of the testing was to identify potential causes of elevated ambient hexavalent chromium levels measured. Previously at this facility, high air monitoring results had been reduced by upgrading the filtration system and implementing various control methods to reduce emissions from chromate coating operations. The monitor locations were chosen based on the highest hexavalent chromium ambient monitoring results detected at the facility's Building #2 monitors, and previous highest glass plate sampling results taken by SCAQMD inspectors from Building #2 and #3 locations. Table 1-2 summarizes the results of the first round of emissions testing.

**Table 1-2: Newport Beach Facility
Hexavalent Chromium Emissions Test Results from April 4, 2014**

Summary of Emissions	Measured Concentration (ng/m ³)	Mass Emission Rate (lb/hr)	Emission Rate (mg/A-hr)
Emissions from Anodizing Tank	222,000	No Data	No Data
Emissions from Sodium Dichromate Seal Tank	217,000	No Data	No Data
Building #2 Roof Vent	6,520	6.82E-04	No Data
Anodizing Tank Control System Exhaust	66.3	7.19E-07	0.0068
Building #3 Roof Vent	18.6	No Data	No Data

SCAQMD staff determined that the fugitive emissions from the chromic acid anodizing process resulted from air agitation, lack of mist suppressant, incomplete emissions capture, and crossdrafts in the room. During the April 4, 2014 test, the anodizing tank was in operation. A second set of

tests were conducted when the anodizing tank was not in operation and Table 1-3 provides a summary of the results to better understand the contribution of other sources.

**Table 1-3: Newport Beach Facility
Hexavalent Chromium Emissions Test Results from April 16, 2014**

Summary of Emissions	Measured Concentration (ng/m ³)	Mass Emissions Rate (lb/hr)
Emissions from Sodium Dichromate Seal Tank	97,200	No Data
Building #2 Roof Vent	2,510	1.64E-04
Spray Booth #1 Control System Exhaust	36.0	1.43E-06
Interior of Building #3 Above Tap Water Rinse Tank	14.0	No Data
Spray Booth #2 Control System Exhaust	10.8	4.58E-07

The measured concentration from the sodium dichromate seal tank were less than half of the first test results. As noted above, during this emissions test the nearby anodizing tank was not in operation, indicating that previous emissions test results from the sodium dichromate seal tank may have been elevated due to crossdrafts that transported emissions from the anodizing tank. Since the sodium dichromate tank is an electro-less tank process, it is not regulated under Rule 1469. The elevated levels of hexavalent chromium emissions coming from the sodium dichromate seal tank was more than 13 times the NESHAP's 7,000 ng/m³ concentration limit for a controlled chromic acid anodizing tank. The elevated levels indicated a need to control these tanks.

Ambient monitoring levels near the Paramount facility were initially near 11 ng/m³ when monitoring began in the latter part of 2016, and they currently averaged below 0.25 ng/m³. In addition, ambient monitoring levels near the Long Beach facility were initially near 0.9 ng/m³ when monitoring began in May 2017, and they currently average below 0.4 ng/m³. These facilities had various types of equipment subject to SCAQMD rules and regulations and permit requirements. Some of the potential on-site sources of emissions include the chrome anodizing line, nickel and cadmium plating, curing and drying ovens, paint spray booths, abrasive blasting equipment, waste water treatment system, and miscellaneous natural gas combustion sources. In addition, equipment such as tanks, racks, and drums, and operations such as packaging, product transfer, and maintenance and cleaning activities may have the potential to contribute to fugitive emissions. Information on ambient air monitoring in the communities can be found here: <http://www.aqmd.gov/home/library/clean-air-plans/air-toxics-action-plan>.

Ambient monitoring can provide information about sources that were not known and verification of compliance with an existing rule or regulation. Ambient monitoring near the Rule 1469 facilities in Newport Beach, Paramount, and Long Beach provided information about previously unknown sources of hexavalent chromium emissions. Ambient monitoring was also used to determine emission trends from facilities after they implemented control measures and installed add-on controls. There are limitations with ambient monitoring, particularly if the monitor cannot be sited in a location that will capture the maximum ground-level concentration for a specific site or if there are multiple sources that are contributing to the reading at the same ambient air monitor. Through the rulemaking for PAR 1469, it was determined that there is sufficient evidence based on ambient monitoring, emissions testing, and other investigative activities that there are tanks that

were not previously known that have significant hexavalent chromium emissions that need pollution controls. As a result, the focus of PAR 1469 is to require pollution controls on these tanks. SCAQMD staff will address ambient air monitoring in a separate rulemaking process under Proposed Rule 1480 – Air Toxics Metals Monitoring, which will include a variety of industry sources that have toxic metal particulate emissions.

AFFECTED RULE 1469 FACILITIES

PAR 1469 will affect chromium electroplating or chromic acid anodizing facilities. Based on SCAQMD permitted equipment data and internet searches, industry representatives provided lists of potential Rule 1469 facilities. SCAQMD staff followed up with phone calls to the facility operators inquiring about their operations, and if there was sufficient information indicating the facility could potentially be a Rule 1469 facility, SCAQMD staff visited the facility. SCAQMD staff identified 115 facilities that either conduct decorative or hard chromium electroplating or chromic acid anodizing operations within SCAQMD's jurisdiction. Of the 115 affected facilities, 47 facilities conduct decorative hexavalent chromium plating, 31 facilities conduct hard hexavalent chromium plating, 31 facilities conduct chromic acid anodizing, four facilities conduct trivalent chromium plating only, and two facilities that conduct both chromic acid anodizing and hard hexavalent chromium plating. All 115 facilities are categorized using North American Industry Classification System (NAICS) code listed below in Table 1-1.3. This universe of facilities and tanks were obtained via SCAQMD's equipment permitting database and staff-conducted surveys of facilities.

The majority of chromium electroplating and chromic acid anodizing facilities are considered job shops, which typically perform a wide range of metal finishing services in addition to chromium electroplating (i.e. nickel plating, copper plating) and offer these services for contract. Job shops are independent operators that serve a variety of industries. The most common electroplating processes in job shops include nickel, copper, zinc and chromium. The automotive, computer/electronics, machinery/industrial equipment and defense/government are the four largest segments of industry served by all electroplaters and anodizers. In addition, fasteners are a large industry segment for job shops.

Different from job shops are captive shops used in industries where chromium electroplating is used as a secondary process to aid in production. Captive shops are found within companies that manufacture products rather than specialize in metal plating. In captive shops, the most common processes include nickel, chromium and zinc electroplating and anodizing. Captive shops typically have a higher degree of automation, due to their more predictable finishing requirements.

Table 1-4: NAICS Codes for PAR 1469 Affected Facilities

Industry	NAICS Code	# of Facilities
Fabricated Metal Manufacturing	332	93
Metal Crown, Closure, and Other Metal Stamping (except Automotive)	332119	1
Saw Blade and Hand Tool Manufacturing	332216	1
Machine Shops	332710	3
Bolt, Nut, Screw, Rivet, and Washer Manufacturing	332722	2
Metal Coating, Engraving (except Jewelry and Silverware), and Allied Services to Manufacturers	332812	2
Electroplating, Plating, Polishing, Anodizing, and Coloring	332813	82
Plumbing Fixture Fitting and Trim Manufacturing	332913	2
Other Manufacturing	333-337	12
Other Industrial Machinery Manufacturing	333249	1
Special Die and Tool, Die Set, Jig, and Fixture Manufacturing	333514	1
Cutting Tool and Machine Tool Accessory Manufacturing	333515	1
Other Measuring and Controlling Device Manufacturing	334519	2
Motor and Generator Manufacturing	335312	1
Motor Vehicle Gasoline Engine and Engine Parts Manufacturing	336310	1
Other Motor Vehicle Parts Manufacturing	336390	1
Aircraft Manufacturing	336411	1
Other Aircraft Parts and Auxiliary Equipment Manufacturing	336413	2
Showcase, Partition, Shelving, and Locker Manufacturing	337215	1
Wholesale and Retail Trade	42, 44	2
Transportation Equipment and Supplies (except Motor Vehicle) Merchant Wholesalers	423860	1
Motorcycle, ATV, and All Other Motor Vehicle Dealers	441228	1
Professional, Scientific, and Technical and Other Services	54, 56	5
All Other Professional, Scientific, and Technical Services	541990	1
All Other Support Services	561990	4
Repair and Maintenance	811	3
Automotive Body, Paint, and Interior Repair and Maintenance	811121	1
Other Electronic and Precision Equipment Repair and Maintenance	811219	1
Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	811310	1
Total		115

PROCESS DESCRIPTION

Chromium electroplating and chromic acid anodizing are electrolytic processes, where parts and substrates are submerged in a bath containing chromic anhydride (CrO_3), commonly called chromic acid. Many of the Rule 1469 facilities have other plating tanks using metals such as nickel and cadmium. Those tanks are covered under a separate rule, Rule 1426.

Hard Chromium Electroplating

Hard chromium electroplating involves depositing a “thick” layer of chromium (measured in thousandths of an inch) on a part, imparting corrosion protection, wear resistance, and lubricity and oil retention, among other properties. Examples of parts which are hard chromium electroplated include engine parts and industrial machinery and tools. It is nearly always applied to parts made of steel. Because of the thickness of the electroplating layer, electroplating duration is measured in hours or days.

Decorative Chromium Electroplating

Decorative chromium electroplating involves depositing a thin layer of chromium (measured in millionths of an inch), which gives a decorative and protective finish. Examples of parts which are decorative chromium electroplated include furniture components, bathroom fixtures, and car bumpers and wheels. Electroplating duration is measured in seconds or minutes.

Chromic Acid Anodizing

Chromic acid anodizing involves electrolytic oxidation of a surface to produce a wear and corrosion resistant surface without depositing a metallic chromium layer. Anodizing is an electrochemical process during which aluminum is the anode. When an electric current passes through the electrolyte, it converts the metal surface to a durable aluminum oxide. The difference between electroplating and anodizing is that the oxide coating is integral to the metal substrate as opposed to being a metallic coating deposition. The oxidized surface is hard and abrasion resistant, and it provides some degree of corrosion resistance.

Electrolytic Tanks

During the electroplating process, hydrogen gas forms very small bubbles, which have high misting potential. The gas bubbles entrain chromic acid and form chromic acid mist at the surface of the electroplating bath. A similar process occurs as oxygen bubbles break the surface of the electroplating bath. The magnitude of emissions depends on several electroplating variables, including the concentration of chromic acid in the bath, ampere-hours used during electroplating, bath temperature, bath purity, and surface tension. Bubble formation due to electrolysis is the primary mechanism by which hexavalent chromium emissions are generated (chemical fume suppressants, discussed at greater length in the Control Technologies Section below, are added to electrolytic tanks to prevent and control bubble formation).

Non-Electroplating or Non-Anodizing Tanks

Chromium electroplating and chromic acid anodizing facilities may have multiple tanks that are in the process line. The tanks either prepare or finish parts that will be anodized or electroplated, but are not considered anodizing or electroplating tanks themselves. Some of these have been identified to contain hexavalent chromium. The tanks contain hexavalent chromium as a by-product of the operation, intentional or unintentional contamination from the previous tank, or

hexavalent chromium is a constituent of the material in the tank. Hexavalent chromium tanks may be heated, air sparged, or rectified. Heated tanks can cause the tanks to reach temperatures that generate bubbles. The gas bubbles contain hexavalent chromium and rupture at the surface, generating hexavalent chromium emissions. Air sparging is the process of agitating the tank bath to create an even mixture. The tank is aerated and bubbles are generated and as a result release hexavalent chromium emissions when they reach the surface. SCAQMD staff identified several tank operations that can be sources of hexavalent chromium emissions, which are discussed below:

- *Drag-Out/Rinse Tanks*
Following the anodizing or electroplating of a part, the part can be placed in a drag-out/rinse tank. This tank collects liquid from the previous tank and rinses the part. The drag-out tank is a rinse tank initially filled with pure water. Air agitation is often used to aid the rinsing process because there is no water flow in the tank to cause turbulence. The rinse tanks may also be heated, depending upon the operation. As the plating line is operated, no additional water is added to the tank, thus the chemical concentration and the amount of metals in the tank increase as more work is processed. The liquid can remain in the tank or be processed as waste.
- *Seal Tanks*
Sealing closes the porous surface generated during the anodizing process, which gives the product maximum corrosion resistance and minimizes the wear resistance of the anodized oxide layer. The anodized part is immersed in either hot water, nickel acetate, or dichromate seal. The seal tanks are heated to near boiling temperatures.
- *Passivation Tanks*
Passivation is a chemical process designed to increase the corrosion resistance of parts. Parts are placed in the tank solution and submerged in a nitric acid bath. A hard non-reactive surface film that inhibits further corrosion forms on the surface. Sodium dichromate can be a constituent in the tank.
- *Stripping Tanks*
Parts may have an existing layer of chrome coating on them that must be stripped prior to plating. The stripping process may either use a chemical process or use an electrical current to remove the layer. The concentration of hexavalent chromium in stripping tanks can vary by facility. These tanks are often electrolytic as well.
- *Chromate Conversion Tanks*
Chromate conversion tanks are also referred to as “chem film” tanks. The conversion process converts the surface properties of the substrate by applying a thin protective coating utilizing bath chemistry rather than an electrolytic process.

Rinse Process

Counter-flow Rinsing

Counter-flow rinsing is the process of utilizing multiple rinse tanks connected in series. Fresh water flows into the rinse tank located furthest from the process tank and overflows, in turn, to the rinse tanks closer to the process tank. This technique is called counter-flow rinsing because the work piece and the rinse water move in opposite directions. Over time, the first rinse becomes contaminated with drag-out. The second rinse tank has an even lower concentration of hexavalent chromium compared to the first rinse tank. The more counter-flow rinse tanks, the lower the water flow needed for adequate removal of the process solution.

Spray Rinsing

Spray rinsing is the use of spray nozzles to rinse parts over process tanks or in a tank. Spray rinsing can significantly decrease drag-out, however, too high a water pressure can cause water that is laden with hexavalent chromium to ricochet off the parts. Hexavalent chromium-laden water that dries on surfaces has the potential to become fugitive emissions. Some facilities use a variety of techniques to contain the hexavalent chromium-laden water spray, such as spray rinsing in a tank or using barriers to contain the spraying operation.

Waste Processing

During hexavalent chromium electroplating or chromic acid anodizing, some portion of the materials used in production is not totally captured as product and can exit the process in wastewater and solid waste. Solids in the plating solution are precipitated out with the addition of chemicals. Further, a multi-stage clarifying system can be used so that a large portion can settle to the bottom as sludge. The sludge is a very wet metal hydroxide mixture that is removed from the treatment tank and can be “dewatered” in filter presses, leaving a wet mud that is generally 25 percent solids by weight. The sludge can be further dried to further reduce moisture content and weight by using a heated dryer. The sludge is stored in containers, such as “super sacks” or larger “roll off boxes,” and sent to facilities that are permitted to process hazardous waste.

A difference between hexavalent chromium facilities and other metal plating facilities is the practice to reduce hexavalent chromium to trivalent chromium if the facility processes wastewater on-site. This process is conducted prior to precipitation of solids. A reducing agent, such as sodium bisulfite, is added and reduces hexavalent chromium to trivalent chromium. The hexavalent chromium to trivalent chromium reduction reaction yield is not 100 percent. Hexavalent chromium electroplating and chromic acid anodizing facilities identify the sludge as regulated solid waste F006 and F007 under 40 CFR Section 261.31.

SCAQMD SAMPLING OF HEXAVALENT CHROMIUM IN TANKS

To better identify the potential sources of elevated concentrations of hexavalent chromium, SCAQMD staff conducted hexavalent chromium emission and fluid sampling at various tanks that could potentially be sources of hexavalent chromium emissions. Tables 1-5 through 1-9 summarize the results.

Table 1-5: Results of Sealing Tanks Sampling

Tank Type	Facility	Hexavalent Chromium Content (ppm)	Tank Operating Temperature (°F)	Air Sparging	Surface Area (ft²)
Sodium Dichromate ¹	Facility B	80,400	200	No	12
Sodium Dichromate	Facility C ³	Not Recorded	Not Measured	No	12
Sodium Dichromate	Facility E ³	53,000 ²	203	No	12
Sodium Dichromate	Facility D	32,000	194-212	No	32
Sodium Dichromate	Facility B	24,200	200	No	12
Sodium Dichromate	Facility A	17,000	196	Yes	30
Dilute Chromate	Facility A	100	203	Not Recorded	30
Teflon	Facility C	5	Not Measured	Not Recorded	4.5
Hot Deionized (DI) Water	Facility C	<1	Heated (assumed)	Not Recorded	Not Recorded
Nickel Acetate	Facility B	<1	Heated	Not Recorded	12
Nickel Acetate	Facility C	<1	Not Measured	Not Recorded	11
Nickel Acetate	Facility A	<1	170	Not Recorded	30
Nickel Acetate	Facility F	ND ⁴	Heated	Not Recorded	8

¹ Dow #7 (Type III) – used in magnesium anodizing process lines

² Highest value taken of a triplicate run

³ Hexavalent chromium air concentration measurement

⁴ Not Detectable

Table 1-6: Results of Chromate Conversion and Dye Tanks Sampling

Tank Type	Facility	Hexavalent Chromium Content (ppm)	Tank Operating Temperature (°F)	Air Sparging	Surface Area (ft²)
Chem Film	Facility G	2880	Ambient	No	3.75
Chem Film	Facility C	4	Not Measured	Not Recorded	Not Recorded
Chromate Film	Facility D ¹	Not Measured	Ambient	Yes	32
Alodine Clear	Facility F	300	Ambient	Not Recorded	8
Gold Dye	Facility C	8	Not Measured	Not Recorded	Not Recorded
Blue Dye	Facility C	2	Not Measured	Not Recorded	Not Recorded
Black Dye	Facility C	<1	Not Measured	Not Recorded	Not Recorded
Red Dye	Facility C	<1	Not Measured	Not Recorded	Not Recorded
Green Dye	Facility C	<1	Not Measured	Not Recorded	Not Recorded
Heated Dye	Facility F	ND ²	Heated	Not Recorded	8

¹ Hexavalent chromium air concentration measurement

² Not Detectable

Table 1-7: Results of Rinse, Cleaner, and Desmutt Tanks Sampling

Tank Type	Facility	Hexavalent Chromium Content (ppm)	Tank Operating Temperature (°F)	Air Sparging	Electrolytic	Surface Area (ft²)
Rinse	Facility G	23,200	Heated	No	No	24
Rinse	Facility C	4	Not Measured	Not Recorded	No	Not Recorded
Rinse	Facility D	2	Not Measured	Not Recorded	No	Not Recorded
Rinse	Facility F	<1	Not Measured	Not Recorded	No	Not Recorded
Rinse	Facility C	<1	Not Measured	Not Recorded	No	Not Recorded
DI Rinse	Facility C	<1	Heated	Not Recorded	No	8
DI Rinse	Facility C	2,300	Not Measured	Not Recorded	No	Not Recorded
DI Rinse	Facility C	19	Not Measured	Yes	No	9
Cleaner	Facility C	10	Not Measured	Not Recorded	No	29
Cleaner	Facility H	6	Heated	Not Specified	Yes	24
Desmutt	Facility C	0	Not Measured	Not Recorded	No	3

Table 1-8: Results of Passivation, Etch, Neutralizer, and Stripping Tanks Sampling

Tank Type	Facility	Hexavalent Chromium Content (ppm)	Tank Operating Temperature (°F)	Air Sparging	Electrolytic	Surface Area (ft ²)
Chrome Stripping	Facility I	47,400	Not Measured	No	Yes	64
Chrome Stripping	Facility I	37,000	Not Measured	Not Recorded	Yes	42
Chrome Stripping	Facility M	2,300	Not Measured	Not Recorded	Yes	7.5
Passivate	Facility F	10,100	Heated	No	No	8
Passivate	Facility L	7,200	Not Measured	Not Recorded	No	Not Recorded
Passivate	Facility L	ND ¹	Not Measured	Not Recorded	No	Not Recorded
Passivate Rinse	Facility G	210	Not Measured	Yes	No	9
Etch Tank	Facility C	9	Not Measured	Not Recorded	Not Recorded	29
Acid Neutralizer	Facility C	<1	Not Measured	Not Recorded	Not Recorded	6

¹ Not Detectable

Table 1-9: Results for Electrolytic Tier III Tank

Facility	Electrolytic Tank Type	Hexavalent Chromium Results (ppm)	Solution Type
Decorative 1	Stripping	100	Acidic
Hard 1	Stripping	64,000	Caustic
Decorative 2	Stripping	7,000	Caustic
Decorative 3	Stripping	1	Acidic
Decorative 4	Stripping	110	Caustic
Hard 2	Stripping	33,000	Caustic
Decorative 5	Electropolishing	3,000	Caustic
Decorative 6	Electropolishing	860	Caustic
Hard 3	Stripping	37,000/76,000	Caustic
Decorative 7	Electropolishing	3,200	Caustic

Emissions are a greater concern for those tanks that are heated, air sparged or electrolytic as explained earlier in this chapter. High concentrations of hexavalent chromium were found in sodium dichromate seal tanks, electrolytic chrome stripping tanks, electropolishing tanks, passivation tanks, and some rinse tanks. Depending on the design of the facility, rinse waters can have a large variability of hexavalent chromium concentrations. Another factor that contributes

to the hexavalent chromium concentration is the frequency of rinse water change-out for the respective tank. Chem film tanks, dye tanks, and most tanks used in the cleaning process (i.e. several rinse tanks, and cleaner and desmutt tanks) were generally found to have low hexavalent chromium concentrations. Chromate conversion and dye operations are chemical processes that have specific concentrations of hexavalent chromium that are dependent on the required specifications of the bath. Sampling results showed a large variation of hexavalent chromium between various “chem films,” but typically a low concentration of hexavalent chromium in dye operations.

Additional sampling was conducted to define the relationship between temperature and tank concentration of hexavalent chromium to the level of hexavalent chromium emissions. SCAQMD staff conducted sampling at different temperature ranges with similar concentrations of hexavalent chromium and the results are shown in Table 1-9 above.

Table 1-10: Results of Sampling of Tanks at Various Temperatures

Tank Type	Tank Hexavalent Chromium Content (ppm)	Tank Operating Temperature (°F)	Run	Tank Hexavalent Chromium Emission Concentration (ng/m ³)	Tank Hexavalent Chromium Emission Rate (mg/hr)	Tank Hexavalent Chromium Emission Rate per Ft ² (mg/hr-ft ²)
Alodine Tank	347	150	1	37.9	0.037	3.75E-3
			2	25.7	0.025	2.53E-3
			3	58.8	0.054	5.40E-3
			AVG	40.8	0.039	3.89E-4
Alodine Tank	333	160	1	72.7	0.083	8.33E-3
			2	51.3	0.058	5.80E-3
			3	134.9	0.156	1.56E-2
			AVG	86.3	0.099	9.92E-3

SCAQMD staff utilized emission factors to determine what tank concentrations would exceed 0.20 mg/hr. At 150° F, 0.20 mg/hr would be exceeded when tank hexavalent chromium concentrations exceed 1,780 ppm. At 160° F, 0.20 mg/hr would be exceeded when tank hexavalent chromium concentrations exceed 673 ppm. Tanks that operate below 140° F that are not electrolytic nor utilize air sparging would likely not be a source of hexavalent chromium emissions, regardless of the hexavalent chromium concentration in the tank. SCAQMD staff developed a temperature range with corresponding maximum hexavalent chromium concentration for operation of tanks, so that when it was operated it would emit less than 0.20 mg/hr. Figure 1-2 shows steam rising from a heated tank.

Figure 1-2: Photograph Taken During Tank Testing**Table 1-11: Operating Conditions Resulting in Hexavalent Chromium Emissions ≥ 0.20 mg/hr**

Temperature of Tank	Maximum Hexavalent Chromium Concentration in Tank
140-150°F	1,500 PPM
150-160°F	500 PPM
>160°F	100 PPM

Industry stakeholders requested a more comprehensive chart by using a curve or formula that would fill in the gaps between specific data points to more finely define operating conditions. Industry stakeholders also commented that add-on controls are expensive for tanks that narrowly meet the definition of a Tier II Hexavalent Chromium Tank and emit at a low uncontrolled emission rate.

SCAQMD staff revised the approach for the tiered tanks by adding an intermediate tier. The uncontrolled emission rate for the intermediate tier is 0.20-0.40 mg/hr. The intermediate tier would not require the use of add-on air pollution controls, but would require the use of other low-cost air pollution control techniques, such as mechanical fume suppressants and tank covers, that would reduce hexavalent chromium emissions to below 0.20 mg/hr. During the permitting process, SCAQMD staff currently uses an emission reduction factor of 0.50 for tank covers and 0.70 for mechanical fume suppressants.

SCAQMD staff used emissions data from source testing of multiple tanks at various hexavalent chromium concentrations and bath temperatures to generate a formula that was then used to develop a table that identified concentration and operating temperature ranges that would result in an uncontrolled emission rate of 0.20-0.40 mg/hr. Staff developed the following two equations based on an uncontrolled emission rate range of 0.20-0.40 mg/hr to define Tier II and Tier III Tanks when considering specific operating temperatures.

$$\text{Lower Concentration Limit (ppm)} = 1.92 * 1042 * [\text{Operating Temp } ^\circ\text{F}]^{-17.92} - 105.9$$

$$\text{Upper Concentration Limit (ppm)} = 2 * (1.92 * 1042 * [\text{Operating Temp } ^\circ\text{F}]^{-17.92} - 105.9)$$

Temperature and hexavalent chromium concentrations were developed for temperatures between 140-170° F in increments that would define Tier II and Tier III Tanks.

Table 1-12: Tier II and Tier III Tank Concentration and Temperature Thresholds

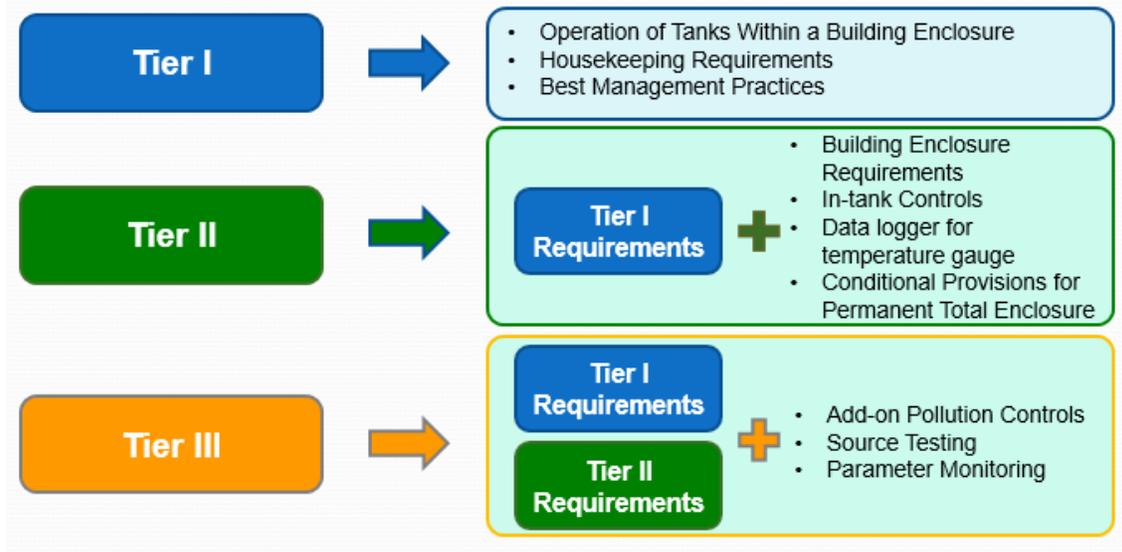
<u>Temperature (° F)</u>	<u>Tier II Tank Concentration (ppm)</u>	<u>Tier III Tank Concentration (ppm)</u>
140 to <145° F	5,200 to <10,400	≥10,400
145 to <150° F	2,700 to <5,500	≥5,500
150 to <155° F	1,400 to <2,900	≥2,900
155 to <160° F	700 to <1,600	≥1,600
160 to <165° F	400 to <800	≥800
165 to <170° F	180 to <400	≥400
≥170° F	≥100 to <200	≥200

Tier I, Tier II, and Tier III Tanks were divided into the corresponding categories as shown in Figure 1-3.

Figure 1-3: Categorization of Tier I, Tier II, and Tier III Hexavalent Chromium Tanks



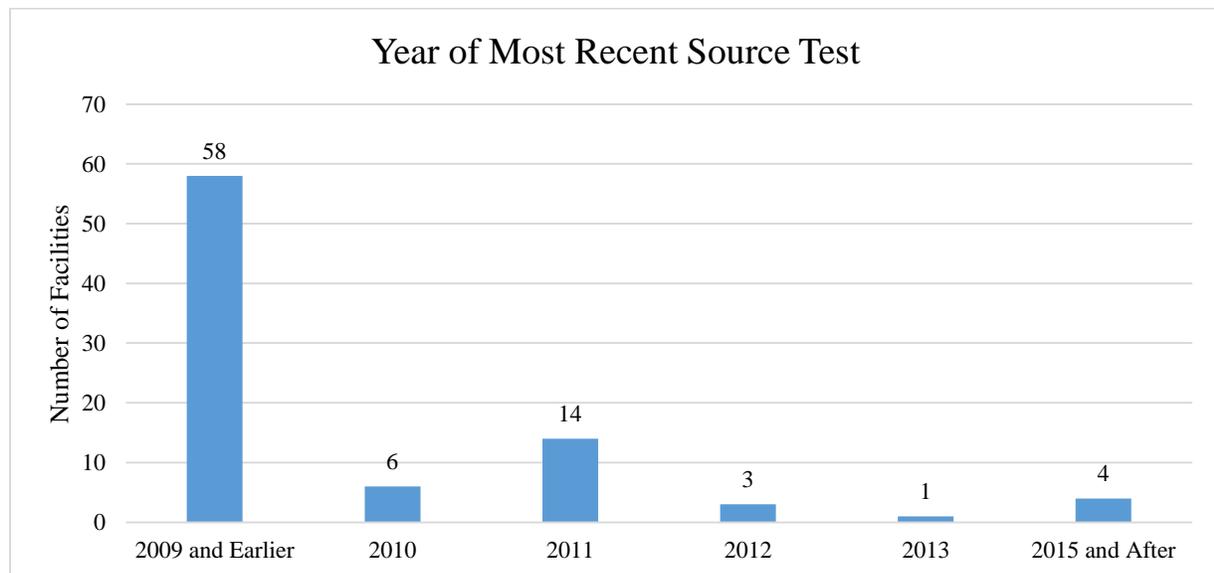
Figure 1-4: Differences between Tier I, Tier II, and Tier III Hexavalent Chromium Tanks



SUMMARY OF SOURCE TEST RESULTS FOR PLATING AND ANODIZING TANKS

Rule 1469 requires owners or operators to comply with emission rate standards that are demonstrated to be achieved through either in-tank controls, add-on controls, or a combination of methods. Facilities required to achieve the 0.01 mg/amp-hr emission rate may use a certified chemical fume suppressant which has been certified to meet the emission rate at specific surface tension. Facilities required to achieve a more stringent emission rate must verify the performance of control methods or add-on controls through a source test. Rule 1469 currently does not require periodic source testing.

Figure 1-5: Distribution of Most Recent Source Tests



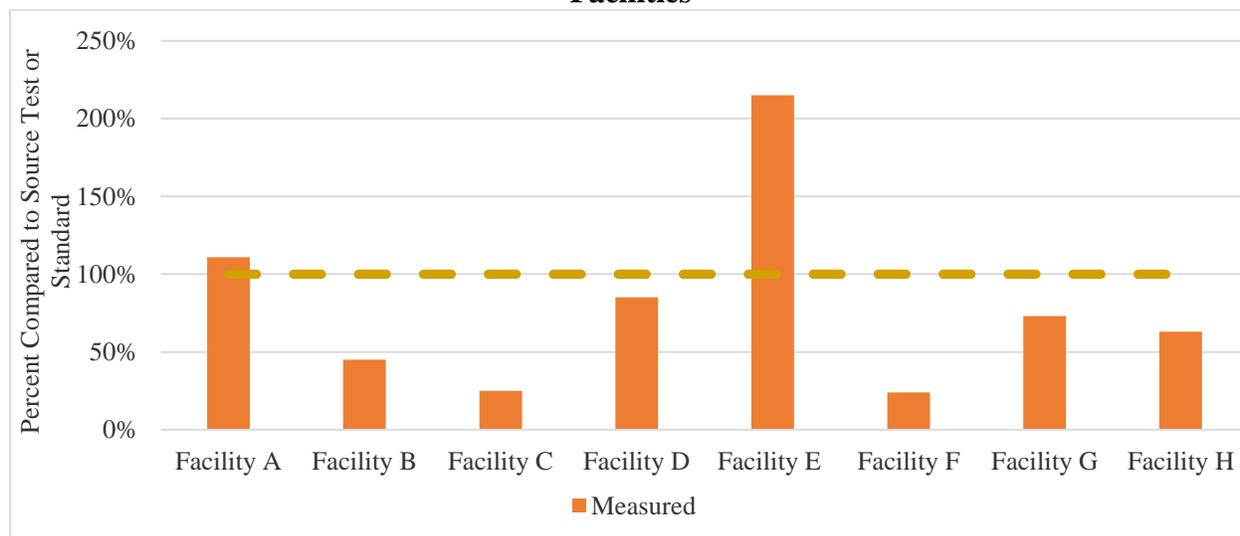
A majority of facilities conducted a source test more than eight years ago. Only four facilities conducted a source test within the last three years and no source tests were conducted in 2014. Periodic source tests are necessary to confirm that the facility's control method or add-on controls are providing sufficient capture and control of hexavalent chromium emissions at a specific emission rate. The source tested emission rate is used to determine an appropriate ampere-hour limit during the permitting process. If a facility operates at a higher emission rate than what was permitted, the hexavalent chromium emissions that would be emitted by the facility would be higher than what was expected.

Slot Velocity Measurements

Under Rule 1469, add-on air pollution control devices are one method of capturing and controlling hexavalent chromium emissions from electrolytic tanks. Hexavalent chromium emissions are captured via a ventilation system that is dependent on a specified velocity of air to ensure sufficient capture efficiency. Rule 1469 requires a periodic qualitative assessment of the performance of add-on air pollution control devices by conducting a smoke test. The smoke test verifies that emissions are moving directly towards the collection device and are not meandering around or moving away from the collection device. However, there is currently no requirement to quantify the slot velocities of the capture system. Recent source tests of add-on air pollution control devices specifies each individual slot velocity at the time of the source test. However, many older tests do not have a listed capture slot velocity. SCAQMD staff was concerned that slot velocity would degrade over time due to lack of maintenance of the ventilation system and build-up of material in and around the slots leading to the ventilation system. Then the captured amount of hexavalent chromium would be significantly less than 100 percent. If the capture efficiency is not sufficient, hexavalent chromium emissions will not be directed to the pollution control device and will be fugitive.

SCAQMD staff conducted site visits at eight metal finishing facilities and measured the slot velocity of add-on controls using a hot wire anemometer. Generally a minimum slot velocity of 2,000 feet per minute for open tanks and 200 feet per minute for covered tanks is recommended per the *Industrial Ventilation Manual 28th Edition*. The measured slot velocities were generally lower than either the source tests (if available) or the corresponding recommended minimum slot velocities.

Figure 1-6: Slot Velocity Measurements of Emission Collection Systems at Multiple Facilities



Facility E was found to be conducting monthly inspections of the control equipment by performing periodic cleaning of slots of the collection systems, replacing equipment parts of air pollution systems to optimize operation, and utilizing third-party contractors to conduct periodic smoke tests. Owner or operators at facilities with deficient slot velocities conducted infrequent measurement of slot velocities or no measurement of the slot velocities. Requirements to have an owner or operator of facilities periodically measure slot velocities would serve as an additional method to ensure that hexavalent chromium emissions are being collected and directed to the pollution controls.

SITE VISITS

As part of PAR 1469 development, SCAQMD staff conducted site visits at 47 facilities that either conduct chromic acid anodizing or hexavalent chromium electroplating. Beginning in 2015 and continuing into 2018, SCAQMD rules staff performed pre-arranged site visits at these facilities. The site visits focused on housekeeping, emission control methods at electroplating and anodizing tanks, conditions of buildings containing process tanks, grinding operations, and potential facility response to the prohibition of chemical fume suppressants that facilities were utilizing as in-tank controls to prevent hexavalent chromium emissions.

Housekeeping Observations

Rule 1469 has specific conditions intended to prevent the generation of fugitive emissions of hexavalent chromium. These fugitive emissions may be generated due to atomization of chromium-laden liquid, contamination, or uncontained chromium-laden liquid being dried. SCAQMD staff observed the following practices that can lead to fugitive emissions of hexavalent chromium.



Rinsing of Parts

Prior to proceeding to the next tank in the process line, chrome-laden liquid that is adhering to a part or equipment is removed. The owner or operator may utilize a water spray rinse to remove the chrome-laden liquid. SCAQMD staff observed facilities spraying parts above a tank with the rinse water being uncontained. In certain circumstances, a splash guard was utilized to prevent overspray and the splash guard had holes or could be influenced by cross-draft. Also, facilities used high pressure sprays that resulted in water ricocheting off parts potentially spreading hexavalent chromium-laden liquid beyond the confines of the splash guard and tank.



Drag-Out

When parts are removed from the tank, chrome-laden liquid adheres to the part. More liquid can adhere to the part if the part is pulled up quickly creating a situation where liquid is dragged out from the tank. In some situations, the drag-out liquid is not caught nor contained and lands on the floor. In other situations, owners or operators were observed to utilize drip trays between tanks or other methods to prevent chrome-laden liquid from landing on the floor.



Location of Roof Vents

Roof vents of the building were located above the tank process area. The roof vents function as exhaust fans for the building that pulls air from the building into the atmosphere. Depending on the proximity of the tank and the contents and other parameters of the tank such as temperature and mixing technique, emissions from the tank can escape, uncontrolled, through the roof vents out to the atmosphere.



Flooring Materials That are Difficult to Maintain

Most facilities used either a metal grate or wood planks around tank processing areas. SCAQMD staff observed at one facility, however, that the flooring was constructed out of carpet that could trap chrome-laden liquid. This carpet material would be difficult to clean and would be a potential source of fugitive hexavalent chromium emissions if disturbed and could be tracked out of the building.



Waste Processing Area

Some chromium electroplating or anodizing facilities process waste generated from the tank process. This involves treating wastewater such as reducing hexavalent chromium into trivalent chromium. Suspended solids get separated out from solutions and can be processed in a filter press. The processed solids are known as sludge and treated as waste. SCAQMD staff observed some facilities with process sludge in open containers and dust was observed in the waste processing area.

NEED FOR PROPOSED AMENDMENTS TO RULE 1469

As previously discussed, ambient monitoring and sampling at metal finishing facilities in Newport Beach, Paramount, and Long Beach have shown elevated levels of hexavalent chromium. These levels were attributed to cross-drafts that allowed hexavalent chromium emissions to escape outside of the building enclosure and hexavalent chromium emitting tanks that are currently not regulated under Rule 1469. Based on ambient monitoring data in Paramount, hexavalent chromium emissions were reduced by more than 75 percent after operators closed a door near the chromic acid anodizing and heated sodium dichromate tank that eliminated a cross-draft in the building opening that allowed emissions to exit the building. This demonstrated the need for certain operating parameters for building enclosures. In addition, emissions testing has shown that certain tanks, such as heated sodium dichromate seal tanks as well as other tanks with specific operating temperatures and hexavalent chromium concentrations that are currently not regulated under Rule 1469 can be a significant source of hexavalent chromium emissions potentially impacting off-site receptors. This demonstrated the need for pollution controls for these tanks and other tanks with similar operating characteristics.

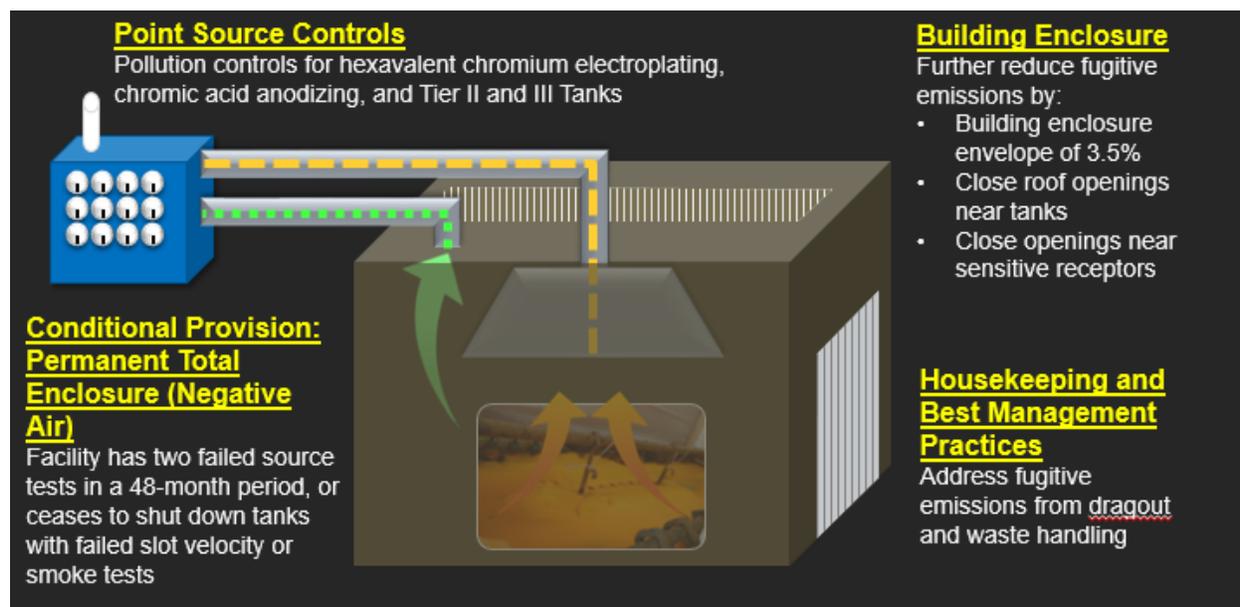
PAR 1469 is needed to address issues found during ambient monitoring and emissions sampling and testing at Rule 1469 facilities in Newport Beach, Paramount, and Long Beach. Based on staff's observations during site visits, the emissions issues identified at these facilities are not unique to their operations and occur at other Rule 1469 facilities that have similar tanks with similar operating characteristics, such as tanks with high concentrations of hexavalent chromium, elevated temperatures, air sparging, or that are rectified.

PAR 1469 is also needed to establish requirements that minimize the release of fugitive hexavalent chromium emissions from buildings. Sources of fugitive hexavalent chromium emissions from Rule 1469 facilities include building cross-drafts and fans and vents that are open to the outside air located above uncontrolled hexavalent chromium emitting tanks. Sampling in roof vents at a facility in Newport Beach and Paramount showed that hexavalent chromium emissions do escape from roof vents. As a result, provisions to minimize roof openings within a specified distance of a Tier II or III Tank are included in PAR 1469. During the rulemaking process, staff took into consideration the affected sources and their concerns. One overarching concern expressed from the Metal Finishing Association was that a number of PAR 1469 facilities are small businesses and their ability to comply with more rigorous requirements such as a permanent total enclosure under negative air vented to air pollution controls. PAR 1469 provides a balance. It provides public health protection, but has triggers for additional provisions such as a permanent total enclosure for facilities that have consistently shown they cannot meet the point source emission

requirement or fail to adhere to requirements to shut down a tank that fails specific parameter monitoring provisions.

In addition to issues identified through monitoring and sampling, staff identified other Rule 1469 amendments that are needed to minimize fugitive hexavalent chromium emissions. Provisions are needed to ensure ongoing compliance with emission limitation requirements. Currently, Rule 1469 requires a one-time source test of pollution control equipment to confirm compliance with the emission limit. Amended source testing provisions ensure that the pollution controls are operating properly and identify any degradation of the efficacy of the pollution controls that may occur over time. Provisions are also needed to ensure that pollution controls are operating on a continuous basis. PAR 1469 will incorporate provisions to conduct parameter monitoring such as slot velocities measurements on an ongoing basis to ensure ventilation to the pollution controls is operating properly on a continual basis. Figure 1-7 provides a summary of the approach used in the development of PAR 1469.

Figure 1-7: PAR 1469 Approach



PAR 1469 is needed to establish basic best management practices. These relatively low-cost practices will help minimize fugitive hexavalent chromium emissions through the reduction of overspray of hexavalent chromium-laden liquid and reduction of drag-out from parts. Amendments to Rule 1469 are also needed to ensure Rule 1469 is equally as stringent as the recent changes to the federal NESHAP.

Overview of PAR 1469

PAR 1469 seeks to regulate all tanks in hexavalent chromium electroplating and anodizing operations with hexavalent chromium concentrations of 1,000 ppm or greater. The proposed amendments will create three tiers of tanks:

- A Tier I Hexavalent Chromium Tank means a tank permitted to contain a hexavalent chromium concentration of 1,000 ppm or greater and is not a Tier II or Tier III Hexavalent Chromium Tank
- A Tier II Hexavalent Chromium Tank means a tank permitted or operated above 140° that operates within the corresponding hexavalent concentration
- A Tier III Hexavalent Chromium Tank means a tank that is permitted to contain a hexavalent chromium concentration greater than 1,000 ppm, and uses air sparging as an agitation method or is electrolytic. Also, a tank is considered a Tier III Tank if the tank is permitted or operated above 140° and above a corresponding hexavalent chromium concentration.

Tier I, Tier II, and Tier III Tanks will be required to be operated in a building enclosure, and comply with housekeeping requirements and best management practices to minimize fugitive chrome emissions. Tier II and III Tanks will be required to operate with specific building enclosure requirements to minimize fugitive emissions released. Additionally, Tier III Tanks, which have been found to have higher emissions, will be required to be vented to add-on air pollution control devices. Hexavalent chromium tanks that are air sparged or are electrolytic are well-known to generate hexavalent chromium emissions, as discussed in the Process Description section, above. Additionally, staff's emissions sampling found that hexavalent chromium tanks that operate at and above 170°F have significantly higher emissions than tanks operating at or below 140°F. Additional testing demonstrated that there are significant hexavalent chromium emissions when the tank bath temperature became elevated even at concentrations below a Tier I Tank.

Other proposed rule changes include:

- More stringent housekeeping practices for all facilities;
- Revisions to existing housekeeping requirements;
- Increased monitoring and recordkeeping;
- Prescriptive requirements to reduce cross-draft in plating areas; and
- Removal of interim Rule 1469 conditions that are no longer applicable.

Amendments to Rule 1469 are also needed to address recent revisions to the federal NESHAP. The NESHAP incorporates a lower surface tension limit for chemical fume suppressants limit of 40 dynes/cm when using a stalagmometer, or 33 dynes/cm when using a tensiometer and bans the use of PFOS in chemical fume suppressants. Most of the other provisions of the NESHAP are already incorporated into existing Rule 1469. SCAQMD staff has determined that several elements of current Rule 1469 as it stands are equivalent or more stringent than the newly amended NESHAP. Therefore, PAR 1469 proposes incorporating elements of the newly amended federal NESHAP into Rule 1469, along with the addition of several new or more stringent requirements that address fugitive emissions and control recently identified point sources. Rule 1469 is also being amended to provide clarity.

CONTROL TECHNOLOGIES

Several types of controls are available for metal electroplating processes and are currently used for reducing emissions from electroplating operations. They are described below.

High-Efficiency Particulate Arrestors (HEPA)

Used in conjunction with a pre-filter, HEPA filters can trap toxic particles as small as 0.3 μm at an efficiency of 99.97 percent or greater. Like cartridge filters, HEPA filter elements are of pleated construction. HEPA filters are generally limited to ambient temperature (up to 100°F), though special applications for higher temperatures are available. Unlike bags or cartridge filters, HEPA filters are not automatically cleaned. When a HEPA filter element becomes loaded with particulate matter, the filter is replaced and disposed of as hazardous waste.

Emission Elimination Device (EED)

An EED encloses a process tank while chrome plating is being conducted. The EED incorporates a membrane that allows for free passage of gasses, while effectively blocking the escape of water vapor and chemical mist. The EED is a stand-alone, self-contained unit requiring no supplementary equipment or exhaust outside the facility. Control efficiency is reported to be 100 percent.

Gases generated during the chromium electroplating process escape through the membrane on the EED. Water vapor condenses on the inside walls and top of the enclosure. The condensate runs back into the plating solution. Chromium mist, being heaviest of all by-products and because of the absence of any significant air movement, rises to a limited height and then also falls back into the plating solution. The denser mist, caused by the presence of water vapor mist, further reduces upward mobility of the chromium mist particles. In addition, the water vapor mist and droplets of condensed water provide scrubbing of the air inside the EED.

An adapter is affixed to the top of the plating tank walls with appropriately placed and properly sealed openings for buss bar, plumbing, and electrical conduits, etc. A hinged hood, with counter weights or other mechanical means of openings, is then placed on top of the adapter. A deformable sealing gasket material (compatible with process chemicals) is placed between the tank wall and adapter as well as between the hood and the adapter. An evacuation process is also incorporated into the system as a means of removing any mists or fumes that remain under the hood after the plating process is completed.

Parts to be plated are placed on the buss bars. The contacts must be cleaned and secured to avoid any sparking during plating. After the cover is closed and secured, the rectifier is turned on and the interlocks automatically engage to secure the access door. Interlocks ensure that the door is not opened while plating is being conducted in the tank. When the rectifier is turned off, the evacuation unit automatically turns on and must be run for a specified period.

Mist Suppression at Tank Surface

Applicable to electroplating and anodizing, mist suppression at the surface of the electroplating or anodizing tank is a low-cost, zero-energy, first-step method of mitigating heavy metal (including hexavalent chromium) bearing aerosols before they become entrained in ventilation air and put an unnecessary load on downstream control. Mist suppression is accomplished by floating polyethylene balls covering the wet surface of an electroplating or anodizing tank. Tanks remain fully functional with respect to workpiece submergence and removal, and the aerosol generation is reduced by 50 to 80 percent. Since aerosols are prevented from leaving the tank surface, there is no waste stream associated with this technology.

Wet Packed-Bed Scrubber

Wet packed-bed scrubbers consist of a vertical column made of fiberglass or other non-corrosive material loosely filled with specially shaped plastic packing material which maximizes gas-to-liquid contact and minimizes pressure drop across the column. Exhaust air from an electroplating or anodizing tank line enters at the bottom of the scrubber and exits at the top. The scrubbing solution is pumped from a reservoir at the base of the scrubber and sprayed down into the packing from the top. This flow scheme is called counter-current scrubbing and is the dominant method in use today due to its high pollutant removal efficiency, ranging from 90 to 98 percent, depending on residence (contact) time and solution freshness.

Chevron Mist Eliminators

This air pollution control device is available in different functional designs, the most common being a chevron-shaped baffle pattern which forces mist-laden air to make several abrupt changes in direction between the entry and exit points of the baffle material. Since mist droplets are much heavier than air molecules, they have too much linear momentum to make sharp turns without impacting the baffles. Since many mist droplets strike the baffles, a liquid film forms, causing large droplets to coalesce and drop back down into the piece of equipment being controlled. Mist eliminators are used at the exhaust points of tank vents and wet packed scrubbers to reduce emissions of aerosols and to conserve process and scrubbing solutions, respectively. Since the liquid droplets formed by mist eliminators return to the controlled device, there are no waste streams resulting from their application.

Mesh Pad Mist Eliminators

Mesh pad mist eliminators are used to recover electroplating chemicals of chromium electroplating and chromic acid anodizing. For caustic baths, mesh pads are used to prevent corrosion of the ventilation system. They are also used in scrubber systems for primary removal of particles. However, in this application, multiple exhaust streams are typically combined in a single mist eliminator, thus removing the possibility of chemical recovery.

Mesh pads are considered more efficient than liquid scrubbers. They use smaller amounts of water, making chemical recovery feasible. In a typical arrangement, a mesh pad mist eliminator serves a single electroplating tank and is installed in the ventilation system. The cross sectional area of the exhaust duct is increased by the unit, reducing the velocity of the exhaust stream and allowing electroplating solution to adhere to the mesh pads. Removal efficiency is increased by adding mesh pads. The pads are periodically washed down and the collected electroplating solution is returned to the electroplating bath.

Chemical Fume Suppressants in the Electroplating Industry

Background

Chromium electroplating and chromic acid anodizing generates a large amount of hydrogen and oxygen gas bubbles due to electrolysis. A mist is formed by the bubbles created during electrolysis rising up through the plating solution and bursting through the surface of the plating bath. High speed droplets are ejected from the surface of the solution. The resulting speed of a droplet can be up to 10 m/sec. Collectively, these droplets form a fume or mist. The mist contains chromic acid and provides a transport mechanism for potential emissions of hexavalent chromium.

There are several proven preventive measures that can be implemented to reduce emissions and exposure to hexavalent chromium emissions from plating and anodizing baths. One of these measures is to use a chemical fume suppressant. The most common chemical fume suppressants are surfactant in nature and work by reducing the surface tension of the solution. This has a two-fold effect on the generation of mist. First, reducing surface tension reduces the size of the gas bubbles generated during electrolysis. These smaller bubbles travel slower through the solution and contain less energy than bubbles generated in solutions without a surfactant. Second, the lower surface tension reduces the energy with which the resulting droplets are ejected above the surface of the plating solution. Together, these effects can reduce emissions from the droplets, and therefore mist generation by a large percentage; estimates range from 90% to over 99%. The resultant exposure to emissions of hexavalent chromium is reduced in proportion.

Due to the aggressive chemical and electrochemical environment of chromium plating solutions, most mist suppressants are made from highly stable substances. Early chemical fume suppressants were of two types: wetting agent fume suppressants that reduce surface tension, and mist suppressants that formed foam blankets. Examples of wetting agent-type mist suppressants include Fumetrol 140, Benchbrite CR-1700 and CR-1800, DisMist NP, Clepo Chrome Mist Control and Macuplex STR.

Development of Wetting Agent Chemical Fume Suppressants

The intent of a wetting agent fume suppressant (WA/FS) is to reduce the surface tension of a liquid. When the surface tension is low, gases escape with reduced resistance leading to a diminished “bursting” effect, leading to reduced formation of mist. The most common types of WA/FS are fluorinated since fluorine adds stability throughout a wide range of operating conditions including temperature, electric current, chromic acid concentrations, and various chemical reactions.

The first generation WA/FS were hydrocarbon based. While they acted as surfactants, oils layered on the surface and carried over to rinse tanks, making it not as beneficial. Health, safety, and production issues associated with these WA/FS required the plating bath to be dumped more often.

The second generation WA/FS were fluorinated or perfluorinated carbon chains. These compounds were found to be stable in boiling temperatures, high concentrations of chromic acid, and near the highest oxidizing conditions existing at the anodes. However, the low solubility of the WA/FS caused production issues: roughness, porosity, and cracking on the chromium plate during hard chrome plating.

The third generation WA/FS were also perfluorinated, but with higher solubility and lower foaming. There appeared to be no adverse production impacts on the chromium plate during hard chrome plating.

Effectiveness of Third Generation Wetting Agent Fume Suppressants

In 2002, SCAQMD staff conducted a study to establish the performance of third generation WA/FS on the control of emissions of chromium with results published in Nickel and Chromium Emissions from Electroplating Tanks. In particular, staff correlated emissions with reduced surface tensions of the plating bath.

From the data and conclusions in the 2003 SCAQMD Staff Report for Proposed Amended Rule 1469, it is evident that third generation WA/FS are highly effective in reducing emissions from plating tanks. Data presented in the staff report showed that the observed emission reduction efficiencies ranged from 99.7% to 99.9% when compared with tanks operating without the use of chemical surfactants. These high levels of emission reduction efficiencies are achievable when the surface tension is reduced. WA/FS are one of the means of emissions control for many chromium plating tanks. For decorative and hard chrome plating tanks above a low production threshold, add-on controls, typically involving a scrubber, mesh pads and HEPA filters are also used as secondary controls. It is important to note that for tanks with add-on controls, use of WA/FS reduces inlet loading to the add-on control system by a factor of up to 100 times.

PFOS Fume Suppressants

As described in the U.S. EPA's publication Hard Chrome Fume Suppressants and Control Technologies, prior to 2015, PFOS was commonly used as a surfactant in widely-used mist suppressant products. PFOS is highly resistant to chemical attack and is well suited for use in harsh environments like hot chromic acid plating baths. However, the extremely robust nature of PFOS also means that it is not easily biodegraded or waste-treated and can be released into the environment where it can persist.

The U.S. EPA has expressed concerns about per- and polyfluoroalkyl substances (PFAS) due to toxicity and bioaccumulation. PFAS are a group of man-made chemicals that includes PFOA, PFOS, GenX, and many other chemicals. PFOA and PFOS have been the most extensively produced and studied of these chemicals. There is evidence that exposure to PFAS can lead to adverse human health effects. PFOS has been classified as persistent, bioaccumulative and toxic.

In response to these concerns, the U.S. EPA has taken a number of regulatory actions to address PFAS substances in manufacturing and consumer products. One of these actions included amending the Chrome Plating NESHAP. On September 19, 2012, the U.S. EPA published final amendments to the Chrome Plating NESHAP. As part of those amendments, effective September 21, 2015, U.S. EPA phased out the use of PFOS in fume suppressants.

On September 21, 2015, CARB and SCAQMD granted California chrome plating facilities a one-year extension from the PFOS ban, due to the lack of alternatives in the marketplace. The additional year allowed for a smooth transition toward the use of non-PFOS fume suppressants while maintaining public health protection from hexavalent chromium emissions. On September

21, 2016, all chromium plating facilities that used a WA/FS were required to use a product certified by the CARB that does not contain PFOS.

Development of Fourth Generation non-PFOS Fume Suppressants

As the phase-out of PFOS fume suppressants approached in 2015 and 2016, chemical fume suppressant manufacturers began development and testing of fourth generation, non-PFOS fume suppressants. These products were tested for certification by manufacturers, with assistance from CARB and SCAQMD at chrome plating facilities in several locations within California. Since September 2016, five non-PFOS fume suppressants were approved for specified chrome plate operations (three products for decorative operations and chromic acid anodizing, and two products for hard chrome plating). These currently certified non-PFOS fume suppressants, along with the surface tension certified for use are included in Table 1-7: Chemical Fume Suppressants Approved for Use at Specific Surface Tensions:

Table 1-12: Chemical Fume Suppressants Approved for Use at Specific Surface Tensions

Chemical Fume Suppressant and Manufacturer	Chrome Plating Applications	Stalagmometer Measured Surface Tension (dynes/centimeter)	Tensiometer Measured Surface Tension (dynes/centimeter)
Fumetrol 21 LF2 Atotech, U.S.A2	Hard plating	< 30	< 27
Dicolloy CRPF ProCom LLC2	Decorative plating and chromic acid anodizing	< 32	< 29
HCA - 8.4 Hunter Chemical LLC2	Decorative plating and chromic acid anodizing	< 25	< 22
HCA - 8.4 Hunter Chemical LLC2	Hard plating	< 33	< 30
Macuplex STR NPFX MacDermid Enthone Industrial Solutions2	Decorative plating and chromic acid anodizing	< 32	< 30

Toxicity Reviews by the California Office of Environmental Health Hazard Assessment (OEHHA)

OEHHA conducted toxicity literature reviews of the ingredients in the currently certified non-PFOS fume suppressants, as follows:

1. Budroe, J. (2017, June 30). Toxicity of the Fume Suppressant Sodium Diamyl Sulfosuccinate [Letter to Robert Krieger].

2. Silva, R. M. (2015). *6:2 Fluorotelomer Sulfonate (FTS/FTSA) and Perfluorohexanoic Acid (PFHxA) Toxicity Review* (Office of Environmental Health Hazard Assessment). Sacramento, CA: OEHHA.
3. Silva, R. M. (2016). *6:2 Fluorotelomer Alcohol (FTOH) Toxicity Review (Office of Environmental Health Hazard Assessment)*. Sacramento, CA: OEHHA.
4. Silva, R. M. (2015). *Summary of Reproductive and Developmental Effects of Perfluorohexane Sulfonate (PFHxS)* (Office of Environmental Health Hazard Assessment). Sacramento, CA: OEHHA.

Reference Exposure Levels (RELs) are concentrations at or below which adverse health effects are not likely to occur in the general human population. Before RELs are officially adopted by OEHHA under the Hot Spots Program, they undergo internal peer review, one public comment period, two public workshops, and external peer review by the Scientific Review Panel on Toxic Air Contaminants. Interim RELs (iRELs) do not undergo the same comprehensive review process as OEHHA Hot Spots RELs.

Below is a brief summary of the toxicity reviews conducted by OEHHA.

Perfluorohexane Sulfonate (PFHxS)

There was some evidence of reproductive toxicity, but insufficient evidence to be conclusive. The review was not exhaustive and more studies are needed to understand the effects. This was, in part, due to the fact that there was limited literature on toxicity available. OEHHA was not able to develop an iREL.

6:2 Fluorotelomer Sulfonate (FTS/FTSA) and Perfluorohexanoic Acid (PFHxA)

The exposure occurs via inhalation or ingestion. FTSA is biopersistent and does not degrade rapidly in soil or water. The evidence suggests relatively lower risk compared to PFOS and PFHxS. There is some evidence of reproductive toxicity, but insufficient evidence to be conclusive. OEHHA was not able to develop an iREL.

6:2 Fluorotelomer Alcohol (FTOH)

The exposure occurs via inhalation and exhibited rapid degradation with a half-life of less than two days in soil. The compound is capable of long distance atmospheric transport and surface contamination, producing potentially toxic responses based on animal studies. OEHHA was able to develop an iREL for Acute exposure: 20 ppb; 8-Hour exposure: 2 ppb; and Chronic 1 ppb exposure.

Sodium Diamyl Sulfosuccinate

There was insufficient information to make conclusions due to the limited literature on toxicity available. OEHHA was not able to develop an iREL.

Toxicity Concerns of Certified non-PFOS Chemical Fume Suppressants

Over the past several years there has been an increasing concern about PFAS, PFOA, and PFHxS chemicals. There have been numerous articles regarding the toxicity and the bio-accumulative health effects of these chemicals. Although most of the discussions have focused on ground water contamination and its use near manufacturing facilities and as a fire retardant, there is a growing concern about the health effects of the use of these materials in chemical fume suppressants used at metal finishing facilities. In May of 2018, the U.S. EPA held a National Leadership Summit in Washington D.C. to share information on the ongoing efforts to characterize the risks from PFAS and develop monitoring and treatment cleanup techniques. Although SCAQMD was not invited to participate in the Leadership Summit, staff will monitor the efforts on the national level and will be conducting additional emissions testing for chemical fume suppressants to better understand the amount of these chemicals that are released during the metal finishing process.

Chemical fume suppressants are able to reduce the surface tension and hexavalent chromium emissions from plating and anodizing tanks. Their effect reduces both inlet loading to air pollution control equipment and protects workers within plating and anodizing facilities from breathing mist containing hexavalent chromium, a known human carcinogen.



Affects Lowest Throughput Facilities

In 2003 Rule 1469 allowed use of certified chemical fume suppressants as a low-cost alternative to reduce the financial burden for smaller businesses



Chemical Fume Suppressants are Effective at Reducing Hexavalent Chromium Emissions

Emissions testing has shown chemical fume suppressants can achieve a 99% reduction in hexavalent chromium emissions



Ban Would Have Significant Cost Impacts on Smaller Businesses

Add-on air pollution controls ~\$160,000 (average)
Discontinue plating/anodizing operations or use other chemicals



No Data on Exposure Impacts

Emissions testing is needed to understand exposure impacts of fume suppressant

However, based on the conclusions from the toxicity reviews conducted by OEHHA, SCAQMD staff is looking further into additional measures to address the potential toxicity of these products while acknowledging the preliminary nature of the reviews. Other alternatives include using reformulated chemical fume suppressants that do not contain toxic compounds of concern, however, this is mainly dependent on the interest and willingness from manufacturers to develop and make these products available. Another option for facilities would be the installation of add-on air pollution control devices to reduce hexavalent chromium emissions. Staff recognizes that this may be a costly option for some smaller Rule 1469 facilities and is working with stakeholders to look at possible funding that can help sources to accelerate and incentivize the installation of add-on air pollution control devices and/or phase out hexavalent chromium from affected tanks.

Trivalent Chromium in Decorative Electroplating

An alternative to hexavalent chromium decorative electroplating that has existed since the 1970s is trivalent decorative electroplating. In the 2003 amendment to Rule 1469, staff discussed trivalent chromium decorative electroplating as a potential alternative to hexavalent chromium electroplating with the advantages and disadvantages summarized in the table below.

Table 1-13: Summary Table of Trivalent Chromium Electroplating

Advantage	Disadvantage
<ul style="list-style-type: none"> • Lower metal concentrations • No reduction step • Higher rack densities • Lower current density • Fewer rejects • Reduced drag-out • No fumes 	<ul style="list-style-type: none"> • Differences in color • Higher cost • More careful control of plating conditions required • End product is darker and not as shiny

Staff visited two PAR 1469 facilities that do not conduct hexavalent chromium electroplating and utilize trivalent chromium electroplating. One facility electroplated clothing racks and the other facility electroplated furniture. Both facilities utilized a third-party company to periodically conduct an analysis of various bath constituents and advise them of necessary modifications to the bath. The third-party company measured concentrations of proprietary chemicals in the bath that included a chemical called a brightener and whitener. The facility representatives indicated that that the brightener and whitener allowed the finish to be closer to that of hexavalent chromium. However, both facility representatives expressed concern about the durability and resistance of the finish to outdoor elements. One facility representative indicated that trivalent chromium would develop pitting within six months and that previous chemistry produced a part that had a yellowish tinge compared to the blue tinge produced by hexavalent chromium. PAR 1469 has significantly fewer requirements for trivalent chromium electroplating compared to hexavalent chromium electroplating making the path to compliance more affordable. During the development of PAR 1469, various stakeholders expressed a preference requiring facilities to use trivalent chromium instead of hexavalent chromium. To avoid a conflict with a federal requirement that requires the use of hexavalent chromium, a ban of the use of hexavalent chromium would need to occur at the federal level.

Figure 1-8: Photographs of Trivalent Chromium Electroplated Products

Staff contacted PAVCO, a distributor of a trivalent chromium that provided the following information:

There are two chemistries available for trivalent chromium electroplating: chloride electrolyte and sulfate electrolyte. The color scale for the sulfate electrolyte is closer to pure white and is used by most clients within SCAQMD's jurisdiction. While the color scale for sulfate electrolyte is closer to hexavalent chromium, it is more sensitive to metallic contamination such as iron and nickel.

Table 1-14: PAVCO's Comparison of Trivalent Chromium and Hexavalent Chromium Electroplating

Advantages for Trivalent Chromium Electroplating	Advantages for Hexavalent Chromium Electroplating	Comparable Properties
<ul style="list-style-type: none"> • Lower current density needed • Can fit more parts on rack • Less treatment of wastewater needed • Lower scrap factor 	<ul style="list-style-type: none"> • Plates faster • Better activation inside parts; passivate hard to reach areas • Color is more stable over time • Less expensive chemistry • Less attention to detail required 	<ul style="list-style-type: none"> • Equivalent corrosion protection of plated surface based on Copper Activated Salt Spray (CASS) • Comparable cost when accounting for higher cost of trivalent chemistry vs. higher cost of control requirements and treatment of wastewater for hexavalent chromium

CHAPTER 2: SUMMARY OF PROPOSED AMENDED RULE 1469

PROPOSED AMENDMENTS TO RULE 1469

PROPOSED AMENDMENTS TO RULE 1469

Proposed amendments to Rule 1469 establishes additional requirements for facilities that conduct chromium electroplating or chromic acid anodizing. The intent of the rule is to further reduce hexavalent chromium emissions by addressing both fugitive emissions and point-source emissions. Fugitive hexavalent chromium emissions are addressed through additional housekeeping and maintenance activity requirements, and building enclosures of areas that may lead to hexavalent chromium emissions. New point-source controls are required for hexavalent chromium tanks that have been identified based on certain operating parameters to be sources of hexavalent chromium emissions. Facilities will also be required to conduct periodic source tests to verify that add-on air pollution control devices are performing as intended. This chapter outlines changes and additions made to the current version of Rule 1469 and is divided into sections as they appear in PAR 1469.

Purpose – Subdivision (a)

Consistent with other SCAQMD rules, a purpose provision was added to PAR 1469. The purpose of PAR 1469 is to reduce hexavalent chromium emissions from facilities that perform chromium electroplating or chromic acid anodizing operations, and other activities that are generally associated with chromium electroplating and chromic acid anodizing operations.

Applicability – Subdivision (b)

PAR 1469 applies to facilities that conduct chromium electroplating or chromic acid anodizing operations. PAR 1469 expands the applicability to other hexavalent chromium emitting process tanks that are associated with electroplating or chromic acid anodizing tanks.

PAR 1469 removes the language in this subdivision requiring compliance with SCAQMD Rule 1401 and Rule 1401.1. This language was deleted since PAR 1469 does not preclude compliance with SCAQMD Rule 1401 and Rule 1401.1. Similarly, the existing language transferred from the state's Chrome Plating ATCM regarding prohibitions on chromium electroplating and chromic acid anodizing kits have also been removed since Rule 1469 facilities are still subject to those requirements.

Definitions – Subdivision (c)

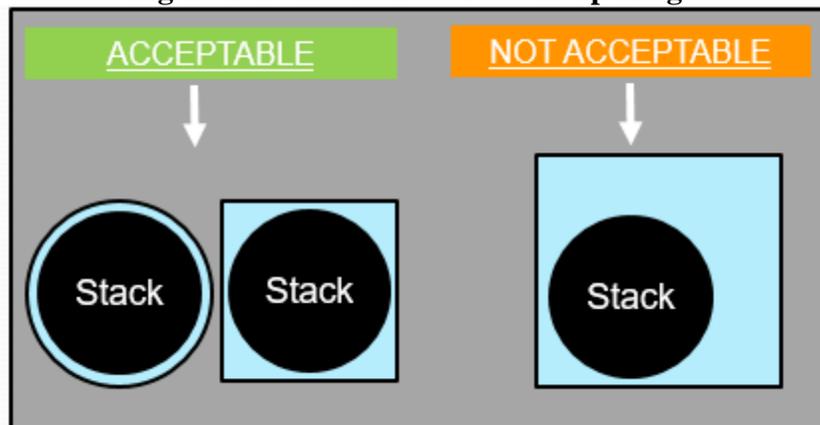
PAR 1469 modifies or adds the definitions of the following terms used in the proposed amendment. Please refer to PAR 1469 for actual definitions. Key changes are summarized below:

- ADD-ON AIR POLLUTION CONTROL DEVICE (modified)
- ADD-ON NON-VENTILATED AIR POLLUTION CONTROL DEVICE (added)
- AIR POLLUTION CONTROL TECHNIQUE (modified)
- APPROVED CLEANING METHOD (added)
- ASSOCIATED PROCESS TANK (added)
- BARRIER (added)
- BREAKDOWN (removed)
- BUILDING ENCLOSURE (added)
- ENCLOSURE OPENING (added)
- FUGITIVE EMISSIONS (modified)
- HIGH EFFICIENCY PARTICULATE ARRESTORS (HEPA) (modified)

- HEPA VACUUM (added)
- LOW PRESSURE SPRAY NOZZLE (added)
- MECHANICAL FUME SUPPRESSANT (modified)
- METAL REMOVAL FLUID (added)
- PERFLUOROOCCTANE SULFONIC ACID (PFOS) BASED FUME SUPPRESSANT (added)
- PERMANENT TOTAL ENCLOSURE (added)
- SCHOOL (modified)
- STALAGMOMETER (modified)
- TANK PROCESS AREA (added)
- TENSIO METER (modified)
- TIER I HEXA VALENT CHROMIUM TANK (added)
- TIER II HEXA VALENT CHROMIUM TANK (added)
- TIER III HEXA VALENT CHROMIUM TANK (added)
- WEEKLY (modified)

The definition for enclosure opening was added and is any permanent, designed opening in a building enclosure or permanent total enclosure, such as passages, doorways, bay doors, and windows in a building enclosure. Stacks, ducts, and openings to accommodate stacks and ducts are not considered enclosure openings. These openings are specifically designed to accommodate a stack or duct and do not function as a general opening. Ducts where there is a gap between the duct and the roof opening should generally conform to the duct opening, but does not need to be the same shape. Figure 2-1: Roof View of Stack Opening and Enclosure Opening demonstrates the differences between the two.

Figure 2-1: Roof View of Stack Opening



The added definitions for Tier I, Tier II, and Tier III Hexavalent Chromium Tanks are noteworthy as many of the proposed amendments to Rule 1469 are associated with the newly added tanks that are potential sources of hexavalent chromium emissions.

The definitions for these tanks are as follows:

- **TIER I HEXAVALENT CHROMIUM TANK** means a tank permitted for a hexavalent chromium concentration of 1,000 parts per million (ppm) or greater and is not a Tier II or Tier III Hexavalent Chromium Tank.

As discussed in Chapter 1, SCAQMD staff sampled a number of tanks and the results showed that some tanks that are not currently regulated under Rule 1469 can contain high levels of hexavalent chromium. Tanks containing a hexavalent chromium concentration of 1,000 ppm or greater were included in this definition because it is consistent with the federal NESHAP for Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks that are required to meet specific housekeeping practices. PAR 1469 will require Tier I Hexavalent Chromium Tanks to be subject to both the existing and newly added requirements for housekeeping and best management practices of the rule.

There is concern about hexavalent chromium tanks operating under conditions that can generate hexavalent chromium emissions outside of a tank. Hexavalent chromium tanks that are heated, air sparged, or electrolytic can generate hexavalent chromium emissions. High concentrations of hexavalent chromium were found by SCAQMD staff in sodium dichromate seal tanks and chrome stripping tanks with similar operating characteristics. These tanks are newly defined in PAR 1469 as follows:

- **TIER II HEXAVALENT CHROMIUM TANK** means a tank that is operated or permitted to operate by the SCAQMD within the range of temperatures and corresponding hexavalent chromium concentrations specified below and is not a Tier III Hexavalent Chromium Tank.

Temperature (° F)	Tier II Tank Concentration (ppm)
≥ 140 to <145	≥ 5,200 to < 10,400
≥ 145 to <150	≥ 2,700 to < 5,500
≥ 150 to <155	≥ 1,400 to < 2,900
≥ 155 to <160	≥ 700 to < 1,600
≥ 160 to <165	≥ 400 to < 800
≥ 165 to <170	≥ 180 to < 400
≥170	≥ 100 to < 200

- TIER III HEXAVALENT CHROMIUM TANK means a tank that is operated or permitted to operate by the SCAQMD within the range of temperatures and corresponding hexavalent chromium concentrations specified below; or

Temperature (° F)	Tier III Tank Concentration (ppm)
≥ 140 to <145	≥ 10,400
≥ 145 to <150	≥ 5,500
≥ 150 to <155	≥ 2,900
≥ 155 to <160	≥ 1,600
≥ 160 to <165	≥ 800
≥ 165 to <170	≥ 400
≥170	≥ 200

- Contains a hexavalent chromium concentration greater than 1,000 ppm, and uses air sparging as an agitation method or is electrolytic; or
- Is a hexavalent chromium electroplating or chromic acid anodizing tank.

Based on sampling and testing data conducted by SCAQMD discussed in Chapter 1, tanks containing any concentration of hexavalent chromium that are operated below 140° F have not been shown to exhibit elevated hexavalent chromium emissions. Additional sampling and testing data have demonstrated a correlation between temperature of the bath and hexavalent chromium tank concentration. Elevated temperatures correlated with hexavalent chromium emissions at low concentrations. Tier II Hexavalent Chromium Tanks have the potential to emit hexavalent chromium emissions at a rate between 0.20 mg/hr to 0.40 mg/hr. Therefore, Tier II Hexavalent Chromium Tanks are allowed to utilize other low-cost controls such as mechanical fume suppressants or tank covers to reduce hexavalent chromium emissions to below 0.20 mg/hr. Additional thresholds were added in determining a Tier III Hexavalent Chromium Tank. Tier III Hexavalent Chromium Tanks are subject to separate requirements for emission controls explained later in this chapter.

Requirements – Subdivision (d)

Subdivision (d) establishes the requirements for PAR 1469. Paragraph (d)(1) has been revised to require a separate meter to be hardwired for each hexavalent chromium electroplating or chromic acid anodizing tank instead of for each rectifier.

Paragraph (d)(2) has been revised to clarify two terms: 1) electroplating refers to chromium electroplating; and 2) anodizing tank refers to a chromic acid anodizing tank.

Paragraph (d)(4) has been added to require any Tier I, Tier II, or Tier III Hexavalent Chromium Tank to be operated within a building enclosure beginning 90 days after date of rule adoption. This provision requires that Tier I, Tier II, or Tier III Tanks be operated within a building enclosure, as defined by this rule. A building enclosure is a permanent building or physical structure, or portion of a building, enclosed with a floor, walls, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, run-off), with limited openings to allow access for people, vehicles, equipment, or parts. A room within a building enclosure that is completely enclosed with a floor, walls, and a roof would also meet this definition.

Paragraph (d)(5) has been added to require any Tier II or Tier III Hexavalent Chromium Tank to be operated within a building enclosure that meets additional requirements in subdivision (e). This provision does not require that a Tier I Tank be operated within a building enclosure that meets the additional requirements under subdivision (e) such as limitations on enclosure openings.

Requirements for Building Enclosures for Tier II and Tier III Hexavalent Chromium Tank(s) – Subdivision (e)

PAR 1469 adds requirements to operate any Tier II or Tier III Hexavalent Chromium Tank within a building enclosure that meets specific requirements under paragraphs (e)(1) through (e)(9) beginning 180 days after date of rule adoption. As discussed above, Tier I Hexavalent Chromium Tanks are required to operate within a building enclosure, however, the building enclosure where a Tier I Tank is operated (provided there is not a Tier II or III Tank) is not required to meet the additional requirements of this subdivision. The following summarizes those requirements for building enclosures for Tier II and III Hexavalent Chromium Tanks

Paragraph (e)(1) establishes requirements for enclosure openings for a building enclosure. Under this paragraph, the combined area of all building enclosure openings, including any roof openings for passage of equipment or vents through which fugitive hexavalent chromium emissions can escape from the building enclosure, shall not exceed 3.5% of the building enclosure envelope, which is calculated as the total surface area of the building enclosure's exterior walls, floor and horizontal projection of the roof on the ground. This requirement is based on U.S. EPA's Method 204 for Permanent Total Enclosures, however, unlike Method 204, building enclosures under PAR 1469 are not required to be under negative air pressure. As such, the requirement for a 5% allowance for openings in the building enclosure has been decreased to 3.5% to compensate for the absence of having a building enclosure vented to an add-on air pollution control device. Information on calculations for the building enclosure envelope, including locations and dimensions of openings counted toward the 3.5% allowance are required to be provided in the compliance status reports pursuant to paragraphs (p)(2) and (p)(3).

PAR 1469 identifies the type of openings that are not counted towards the 3.5% enclosure opening allowance. As specified in paragraph (e)(1), openings that close or consist of the following shall not be counted toward the combined area of enclosure openings:

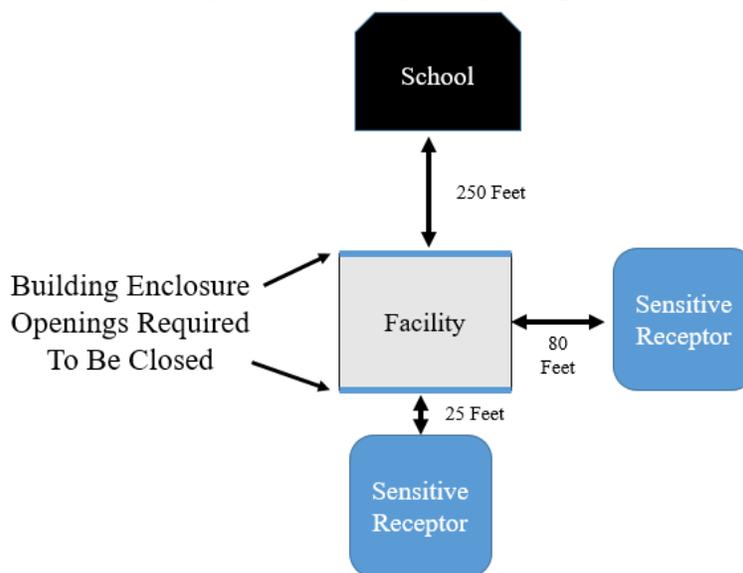
- ✓ Door that automatically closes;
- ✓ Overlapping plastic strip curtains;
- ✓ Vestibule;
- ✓ Airlock system, or
- ✓ Alternate method to minimize the release of fugitive emissions from the building enclosure that the owner or operator can demonstrate to the Executive Officer that is an equivalent or more effective method(s) to minimize the movement of air within the building enclosure. This provision allows the owner or operator to develop other low-cost methods that were not identified during the rulemaking.

Paragraph (e)(2) establishes the requirements to eliminate or minimize cross-draft that can occur when openings at opposite ends of building enclosure are open. Under this paragraph, owner or operators are required to ensure that any building enclosure opening that is on opposite ends of the building enclosure where air movement can pass through are not simultaneously open except

during the passage of vehicles, equipment or people, not to exceed two hours, by either closing or using one or more of the methods for the enclosure opening(s) on one of the opposite ends of the building enclosure specified in subparagraph (e)(1)(A) through (e)(1)(E). Although PAR 1469 does not require the owner or operator of facility to either monitor or record the time the enclosure openings are open, if an operator is observed or information is obtained to show that an enclosure opening remains open for more than two hours, that would be a violation of the provisions. A provision was added to PAR 1469 also allows use of a barrier, such as a large piece of equipment, a wall, or any other type of barrier that restricts air movement from passing through the building enclosure to meet this requirement.

Paragraph (e)(3) establishes additional requirements for enclosure openings that are facing a sensitive receptor or school. Except for the movement of vehicles, equipment or people, the owner or operator is required to close any building enclosure opening or use any of the methods listed under paragraph (e)(1), that directly faces and opens towards the nearest: (A) sensitive receptor, with the exception of a school, that is located within 1,000 feet, as measured from the property line of the sensitive receptor to the building enclosure opening; (B) school that is located within 1,000 feet, as measured from the property line of the school to the building enclosure opening. If more than one school is within 1,000 feet of the building enclosure, only enclosure openings that directly face the nearest school are required to be closed to comply with paragraph (e)(3). Also, if more than one non-school sensitive receptor are within 1,000 feet of the building enclosure, only enclosure openings that directly face the nearest non-school sensitive receptor are required to be closed to comply with paragraph (e)(3).

Through the rule development process, a number of comments from stakeholders were made regarding sufficient air intake and concerns that PAR 1469 would require that all enclosure openings be closed, impacting worker comfort and safety. This provision combined with other provisions for enclosure openings such as the 3.5% enclosure opening allowance and closing openings that can lead to cross-draft provide additional protections for the community and sensitive receptors, while acknowledging the need to provide air intake for workers that are located in the building enclosure.

Figure 2-2: Building Enclosure Openings Required To Be Closed

Paragraph (e)(4) establishes requirements for enclosure openings, specifically roof openings. Under this paragraph, the owner or operator is required to ensure that all roof openings that are located within 15 feet from the edge of any Tier II or Tier III Hexavalent Chromium Tank are closed, except for roof openings that are used to allow access for equipment or parts, provide intake air for a building enclosure that does not create air velocities that impact the collection efficiency of a ventilation system for an add-on air pollution control device, or roof openings that are equipped with a HEPA filter or other air pollution control device. This provision is included in PAR 1469 because emissions testing from vents near a Tier III Tank and samples from vents and roof tops of buildings where Tier II and III Tanks were operated showed that hexavalent chromium emissions can escape through roof vents and accumulate on roof tops. These fugitive emissions leaving the building can lead to elevated levels of hexavalent chromium detected by ambient monitors. It should be noted that the definition of enclosure opening under PAR 1469 does not include stacks, ducts, and openings to accommodate stacks and ducts.

Paragraph (e)(5) establishes requirements when there is a breach in a building enclosure that is located near a Tier II or III Tank. A breach can be a break, rupture, crack, hole, large gap in the building enclosure. Under this paragraph, the owner or operator is required to repair a breach in a building enclosure that is located within 15 feet of the edge of any Tier II or III Tank within 72 hours of discovery. The provision establishes who to call and the procedures for a time extension to repair the breach, if needed.

Paragraph (e)(6) provides procedure to follow if there are specific provisions under paragraphs (e)(1) through (e)(4) that cannot be complied with due to safety or local building requirements. Regarding worker safety, stakeholders asked which agency requirement for the construction and/or operation of building enclosure took precedence: SCAQMD or Cal-OSHA/Federal OSHA. PAR 1469 acknowledges that a building enclosure should not be designed to conflict with either Cal-OSHA/Federal OSHA's requirements, or other municipal codes or agency requirements related directly to worker safety, and instead should be constructed in a manner that is compliant with all

agency requirements. This may require the owner or operator of a facility to install additional equipment or modify the existing structure. Paragraph (e)(6) provides a mechanism for an owner or operator of a facility to allege that a Cal-OSHA/Federal OSHA or other municipal codes or agency requirements directly related to worker safety conflict with PAR 1469. The owner or operator shall notify the Executive Officer and submitting a Building Enclosure Compliance Plan that explains why a provision or provisions in paragraphs (e)(1) through (e)(4) cannot be met and the alternative compliance measures that shall be implemented. During the rulemaking process, SCAQMD staff contacted Cal-OSHA staff, and based on their review of the building enclosure provisions Cal-OSHA staff commented that there are not minimum ventilation rate for plating facilities and based on their review of PAR 1469 no conflicts between Cal-OSHA requirements and PAR 1469 were found. In the event that there is a conflict, however, PAR 1469 establishes a process to ensure that requirements from the referenced agencies can be implemented in a manner that minimizes release of fugitive emissions while maintaining worker safety.

Paragraph (e)(7) establishes the provisions for approval and disapproval of the Building Enclosure Compliance Plan if an owner or operator submits one under paragraph (e)(6). Under paragraph (e)(8) the owner or operator will have 90 days upon receiving approval from the Executive Officer to implement the approved alternative compliance measures. The owner or operator of a facility that implements and maintains the approved alternative compliance measures shall be deemed to have met the applicable requirements specified in paragraphs (e)(1) through (e)(4).

Paragraph (e)(9) incorporates a provision that allows an owner or operator to delay meeting certain building enclosure requirements if add-on pollution controls will be installed or are required for Tier II or III Hexavalent Chromium Tanks. Tier II or Tier III Hexavalent Chromium Tank(s) may introduce heat and humidity that were vented using building enclosure openings, which if closed, could cause the facility's working environment to become excessively hot and humid. In lieu of a facility installing additional ventilation systems for the building enclosure, the add-on air pollution control device for a Tier II or Tier III Hexavalent Chromium Tank(s) would be able to control the heat and humidity. Therefore, the owner or operator of a facility that is installing an add-on air pollution control device to for either a Tier II or Tier III Hexavalent Chromium Tank(s) shall be exempt from paragraphs (e)(1) and (e)(4) until the add-on air pollution control device has been installed and commenced normal operations.

Housekeeping Requirements – Subdivision (f)

PAR 1469 moves housekeeping requirements from the requirements subdivision to its own dedicated subdivision (f). Amended provisions include the following:

- No changes to paragraph (f)(1) and (f)(2) regarding storage of chromic acid power or flakes.
- A modification to paragraph (f)(3) that requires the use of an approved cleaning method (see the definitions section for details about the types of cleaning that included in this term).
- Paragraph (f)(4) requires the use of an approved cleaning method when cleaning requires surfaces and it modifies the frequency from at least once every seven days to weekly.
- Paragraph (f)(5) was modified to require that containers that hold chromium or chromium-containing waste material shall be kept closed at all times except when filling or emptying. Based on site-visits, many facilities were already implementing this practice. Waste

containers can be a source of hexavalent chromium if left open and this codifies a current practice.

- Paragraph (f)(6) requires that on each day when buffing, grinding, or polishing, the owner or operator shall clean floors within 20 feet of a buffing, grinding, or polishing workstation. The requirements of (f)(6) shall not apply to owner or operators that utilize a metal removal fluid to control buffing, grinding, or polishing operations.
- Paragraph (f)(7) has been added to require owners or operators to remove any flooring in the tank process areas that is made of fabric or fibrous material such as carpets or rugs where hexavalent chromium materials can be trapped. Examples of acceptable flooring material are wooden floor boards and other solid material that can be cleaned and maintained as prescribed by the rule.
- Paragraph (f)(8) has been added to require owners or operators to conduct measures prior to and during the cutting of roof surfaces to prevent the generation of fugitive dust emissions:
 - Prior to being cut, affected roof surface areas shall be cleaned by using a HEPA vacuum; and
 - Minimize fugitive emissions during cutting activities, by using method(s) such as a temporary enclosure and/or HEPA vacuuming; and
 - Notify SCAQMD at least 48 hours prior to the commencement of any roof cutting activities into a building enclosure by calling 1-800-CUT-SMOG
- Paragraph (f)(9) requires that if a HEPA vacuum is used to comply with housekeeping provisions of subdivision (f), that the HEPA filter is free of tears, fractures, holes or other types of damage, and securely latched and properly situated in the vacuum to prevent air leakage from the filtration system.

Previous requirements pertaining to establishing a physical barrier between buffing, grinding, or polishing and where chromium electroplating or chromic acid anodizing have been moved to subdivision (g) - Best Management Practices. Previous requirements pertaining to compressed air cleaning have also been moved to subdivision (g).

For the purposes of PAR 1469, any time the roof surface of a building enclosure that is subject to subdivision (e) is intentionally broken, the action is considered to be cutting of the roof. This can include the installation of skylights, installation of vents, and construction of air pollution control devices on the roof. It should be noted that SCAQMD Rule 1403 applies to any renovation or demolition activity, and that the owner, operator, or any certified asbestos contractor for these activities will need to comply with the provisions of SCAQMD Rule 1403.

Best Management Practices – Subdivision (g)

PAR 1469 creates a new subdivision, (g) - Best Management Practices. Best Management Practices prescribe how an owner or operator shall conduct electroplating or anodizing and other ancillary operations to prevent the release or generation of fugitive emissions.

Paragraph (g)(1) provides clarification for provisions for minimization of drag-out for automated and non-automated lines. For facilities with automated lines, the owner or operator can utilize methods other than drip trays such as other containment devices to prevent hexavalent chromium-containing liquid from falling between electroplating or anodizing tanks. Additional cleaning

requirements include cleaning residue on the drip tray or other devices used for containing liquids. Facilities without automated lines shall handle parts in a manner that does not cause hexavalent chromium containing liquid to drop on the floor. There are no proposed amendments to provisions regarding splash guards and cleaning splash guards.

Paragraph (g)(2) prohibits owners or operators from spray rinsing parts or equipment that were previously in a Tier II or Tier III hexavalent chromium tank, unless the part or equipment are fully lowered inside a tank where the liquid is captured inside the tank. Provisions under paragraph (g)(2) must be implemented beginning 90 days after date of adoption. If an owner or operator chooses to spray rinse above a process tank, they must ensure that any hexavalent chromium-containing liquid is captured and returned to the tank, and:

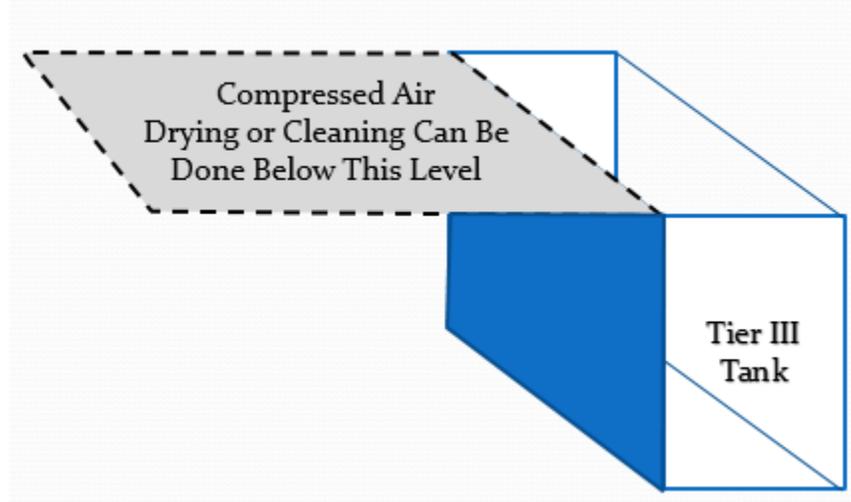
- Install a splash guard at the tank that is free of holes, tears or openings. Splash guards shall be cleaned weekly; or
- For tanks located within a process line utilizing an overhead crane system that would be restricted by the installation of splash guards, a low pressure spray nozzle may instead be used and operated in a matter that water flows off of the part or equipment.

Subparagraph (g)(2)(B) which allows use of low pressure spraying was added based on input from stakeholders. During the development of PAR 1469, industry stakeholders requested consideration of the practice of using spray nozzles on the rack system that would rinse the part prior to moving onto the next finishing process. The water would be either applied in a misting manner or with a low pressure spray nozzle that does not create overspray. The low pressure spray was determined to be 35 pounds per square inch based on the definition of low pressure for residential water pressure.

Beginning 60 days after date of adoption, paragraph (g)(3) requires owners or operators to label each tank within the tank process area with a tank number or other identifier, bath contents, maximum concentration (ppm) of hexavalent chromium, operating temperature range, any agitation method used, and its status as a Tier I, Tier II, or Tier III Hexavalent Chromium Tank. Tank labeling will help operators as well as SCAQMD inspectors identify Tier I, II, and III Tanks and to ensure the appropriate operating conditions are maintained.

Beginning 90 days after date of adoption, paragraph (g)(4) requires all buffing, grinding, and polishing operations to take place within a building enclosure, while paragraph (g)(5) relocates the existing requirement to have a barrier that separates the buffing, grinding, or polishing area within a facility from the chromium electroplating or chromic acid anodizing operation. Both requirements prevent the generation of particulates that could act as a transportation medium for hexavalent chromium.

Paragraph (g)(6) prohibits compressed air cleaning or drying within 15 feet of all Tier II or Tier III Hexavalent Chromium Tank(s) unless a barrier separates those tanks from compressed air cleaning or drying operation, or the compressed air cleaning or drying is conducted in a permanent total enclosure. A tank wall may function as a barrier as long as parts are compressed air cleaned or dried below the lip of the tank as shown in Figure 2-3: Compressed Air Drying Near Tier II or Tier III Tank.

Figure 2-3: Compressed Air Drying Near Tier II or Tier III Tank

The concern is that particulates from those areas may become airborne, or the compressed air cleaning/drying may be conducted in a manner that impacts the collection efficiency of an add-on air pollution control device.

Air Pollution Control Technique Requirements – Subdivision (h)

PAR 1469 creates a new subdivision (h) for requirements regarding add-on air pollution control devices and emission standards. A summary of the provisions of subdivision (h) are described below.

Paragraph (h)(1) is an existing provision that prohibits the removal of pollution control equipment unless it is replaced with an air pollution control technique that meets the requirements for PAR 1469 Table 1 – Hexavalent Chromium Emission Limits for Hexavalent Hard and Decorative Chromium Electroplating and Chromic Acid Anodizing Tanks.

Subparagraph (h)(2)(A) consolidates the emission standards and control requirements for existing, modified, and new hexavalent hard and decorative chromium electroplating and chromic acid anodizing facilities (see definitions) into PAR 1469 Table 1. For reference, this table is provided below in Figure 2-4.

Figure 2-4

Table 1: Hexavalent Chromium Emission Limits for Hard and Decorative Chromium Electroplating and Chromic Acid Anodizing Tanks

Facility Type	Distance to Sensitive Receptor (feet)	Annual Permitted Amp-Hrs	Hexavalent Chromium Emission Limit (mg/amp-hr)	Minimum Air Pollution Control Technique
Existing Facility	$\leq 330^1$	$\leq 20,000$	0.01	Use of Certified Chemical Fume Suppressant at or below the certified surface tension. ³
Existing Facility	$\leq 330^1$	$> 20,000$	0.0015 ²	Add-on air pollution control device(s) or add-on non-ventilated air pollution control device(s).
Existing Facility	$> 330^1$	$\leq 50,000$	0.01	Use of Certified Chemical Fume Suppressant at or below the certified surface tension. ³
Existing Facility	$> 330^1$	$> 50,000$ and $\leq 500,000$	0.0015 ²	Use of an air pollution control technique that controls hexavalent chromium.
Existing Facility	$> 330^1$	$> 500,000$	0.0015 ²	Add-on air pollution control device(s) or add-on non-ventilated air pollution control device(s).
Modified Facility	Any	Any	0.0015 ²	Using an add-on air pollution control device(s), or an approved alternative method pursuant to subdivision (i).
New Facility	Any	Any	0.0011 ²	Using a HEPA add-on air pollution control device, or an approved alternative method pursuant to subdivision (i).

¹ Distance shall be measured, rounded to the nearest foot, from the edge of the chromium electroplating or chromic acid anodizing tank nearest the sensitive receptor (for facilities without add-on air pollution control devices), or from the stack or centroid of stacks (for facilities with add-on air pollution control devices), to the property line of the nearest sensitive receptor. The symbol \leq means less than or equal to. The symbol $>$ means greater than.

² As demonstrated by source test requirements under subdivision (k).

³ Alternatively, a facility may install an add-on air pollution control device(s) or add-on non-ventilated air pollution control device(s) that controls hexavalent chromium emissions to below 0.0015 mg/amp-hr as demonstrated through source test requirements under subdivision (k).

Additionally, all effective dates for notification to the Executive Officer, emission standards, permit application submittals, and control requirements were removed as these dates have passed and are in full effect.

Subparagraph (h)(2)(B) retains the siting requirements for New Chromium Electroplating and Chromic Acid Anodizing Facilities.

All requirements to conduct a facility-wide screening health risk assessment have been removed in this subdivision because these assessments are currently addressed by SCAQMD's ongoing program for new source review of toxics (Rule 1401 and 1401.1) and implementation of AB 2588 (Rule 1402).

Paragraph (h)(3) applies to decorative chromium electroplating processes using a trivalent chromium bath. PAR 1469 revises the requirement to utilize a *certified* chemical fume suppressant to remove the word "certified", as certification at the state level only required for hexavalent chromium electroplating and chromic acid anodizing operations. PAR 1469 adds that chemical fume suppressants cannot contain PFOS for consistency with the NESHAP for Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks.

Emission Controls and Standards for Tier III Hexavalent Chromium Tanks (h)(4) Excluding Chromium Electroplating and Chromic Acid Anodizing Tanks

Paragraph (h)(4) adds new requirements for Tier III Hexavalent Chromium Tanks that are not chromium electroplating or chromic acid anodizing tanks. These tanks are required to be vented to an add-on air pollution control device or an approved alternative compliance method pursuant to subdivision (i). These tanks must comply with the following specific hexavalent chromium emission limits:

- 0.0015 mg/amp-hr, for existing facilities, if any tank(s) vented to an air pollution control device are electrolytic; or
- 0.0011 mg/amp-hr, for new facilities, if any tank(s) vented to an air pollution control device are electrolytic; or
- 0.20 mg/hr, if all tanks vented to the add-on air pollution control device are not electrolytic and the ventilation system has a maximum exhaust rate of 5,000 cfm or less; or
- 0.004 mg/hr-ft², with the applicable surface area based on the surface area of all Tier III Hexavalent Chromium Tank(s) and other tanks required to be vented to an add-on air pollution control device with a SCAQMD Permit to Operate, provided all tanks are not electrolytic, if the ventilation system has a maximum exhaust rate of greater than 5,000 cfm.

Compliance with these limits must be demonstrated by a source test.

For existing and new facilities with electrolytic Tier III Hexavalent Chromium Tanks that are not chromium electroplating or chromic acid anodizing, the emission standard is consistent with the emission standard in Table 1 of PAR 1469 (Figure 2-4) for chromium electroplating and chromic acid anodizing tanks.

In the situation where a facility is controlling a hexavalent chromium electroplating or chromic acid anodizing tank subject to paragraph (h)(2), with the same air pollution control system as a Tier III Hexavalent Chromium Tank subject to paragraph (h)(4), the following emission rate shall apply:

- If the facility conducts one source test with all tanks in operation, the emission rate specified in paragraph (h)(2) would apply as appropriate. This would either be 0.0015 mg/amp-hr or 0.0011 mg/amp-hr; or
- If the facility isolates and operates each tank individually during the source test, the emission rate specified in paragraphs (h)(2) or (h)(4) would apply to each individual tank as appropriate.

The emission limit for non-electrolytic Tier III Hexavalent Chromium Tanks is based on review of 80 source tests conducted on existing add-on air pollution control equipment venting chromium electroplating and chromic acid anodizing tanks. The source tests were conducted from 1999 through 2016. Of the 80 source tests, approximately 20 source tests were not used in the analysis as they either vented multiple electroplating or anodizing tanks or the source test was conducted with very high amperes that were not representative of the normal operations. The average emission rate for the remaining source tests was 0.18 mg/hr. Additionally, due to the fact that uncontrolled hexavalent chromium emissions from non-electrolytic tanks are typically much lower

than that of electroplating and anodizing tanks, staff believes that these non-chromium electroplating or chromic acid anodizing Tier III Tanks can meet an emission limit of 0.20 mg/hr. Subparagraph (h)(4)(B), establishes the compliance schedule to submit permit applications for add-on pollution controls for Tier III Tanks. A staggered implementation schedule is proposed to provide a reasonable distribution of work for consultants, SCAQMD permitting, conducting source tests, etc. For Tier III Hexavalent Chromium Tanks that are in operation prior to date of rule adoption, the owner or operator shall submit a permit application to SCAQMD for the add-on air pollution control devices based on the electrolytic operation conducted at the facility as specified in PAR 1469 Table 2. For reference, this table is provided below in Figure 2-5.

Figure 2-5
Table 2: Permit Submittal Schedule for Add-on Air Pollution Control Devices for Previously Existing Tier III Hexavalent Chromium Tanks

Electrolytic Process at the Facility	Compliance Date for SCAQMD Permit Application Submittal for Add-on Air Pollution Control Device
Chromic Acid Anodizing	[180 Days after Date of Rule Adoption]
Hard Chromium Electroplating	[365 Days after Date of Rule Adoption]
Decorative Chromium Electroplating	[545 Days after Date of Rule Adoption]

If a facility has multiple chromium electrolytic processes occurring, the earliest compliance date would apply to the facility.

A source test is required to be conducted prior to the issuance of a SCAQMD Permit to Operate the add-on air pollution controls. Also, beginning no later than 30 days after rule adoption until the subject add-on air pollution control device is installed, the owner or operator is required to cover the subject tank no later than 30 minutes after ceasing operation of the tank. Tank covers are to be free of holes, tears, or gaps and handled in a manner that does not lead to fugitive emissions.

Subparagraph (h)(4)(C) establishes the compliance dates that an owner or operator a facility is required to install an add-on air pollution control device or implement an alternative compliance method or Hexavalent Chromium Phase-Out Plan to meet the hexavalent chromium emission limits specified in subparagraph (h)(4)(A). The owner or operator of a facility is required to install an add-on air pollution control device to meet the requirements under subparagraph (h)(4)(A) no later than 12 months after a Permit to Construct for an add-on air pollution control device has been issued by the Executive Officer. If an owner or operator elects to meet the requirements of (h)(4)(A) by implementing an approved alternative compliance method the owner or operator shall comply with the timeframe specified in the approved alternative compliance method. Further, if an owner or operator elects to phase out the use of hexavalent chromium in a chromium electroplating or chromic acid anodizing tank the approved Hexavalent Chromium Phase-Out Plan shall be submitted no later than two years after it is approved by the Executive Officer.

Under subparagraph (h)(4)(D), an owner or operator is not subject to the requirements of venting a Tier III Hexavalent Chromium Tank to an add-on air pollution control device if the uncontrolled hexavalent chromium emission rate is less than 0.2 mg/hr, as demonstrated by an SCAQMD approved source test conducted pursuant to the Technical Guidance Document for *Measurement of Hexavalent Chromium Emissions from Chromium Plating and Chromic Acid Anodizing Operations for Certification of Wetting Agent Chemical Mist Suppressant Subject to SCAQMD Rule 1469*.

Emission Controls and Standards for Tier II Hexavalent Chromium Tanks (h)(5)

Beginning 90 days after date of rule adoption, paragraph (h)(5) adds a provision that requires Tier II Tanks to utilize a tank cover, mechanical fume suppressant, or other method approved by the Executive Officer. Alternatively, the owner or operator may meet the emission reduction requirements of a Tier III Hexavalent Chromium Tank specified in subparagraphs (h)(4)(A) and (h)(4)(B).

Paragraph (h)(6) requires facilities to operate add-on air pollution controls at the applicable minimum hood induced capture velocity specified in the most current edition (i.e. at the time the permit application was deemed complete by SCAQMD) of the *Industrial Ventilation, A Manual of Recommended Practice for Design*.

Alternative Compliance Methods for Existing, Modified, and New Hexavalent Decorative and Hard Chromium Electroplating and Chromic Acid Anodizing Facilities – Subdivision (i)

Subdivision (i) retains the option to operate under an alternative compliance method to meet the emission limits specified in paragraphs (h)(2) and (h)(4). The alternative compliance option is available for existing, modified, and new facilities if the owner or operator can demonstrate that the alternative method(s) is enforceable, provides an equal or greater hexavalent chromium reduction, or greater risk reduction than compliance with the emission limits of specified in paragraphs (h)(2) and (h)(4). An owner or operator that elects to use an alternative method must submit an SCAQMD permit application that includes information specified in Appendix 7 of PAR 1469.

PAR 1469 removes the following paragraphs as they refer to past interim compliance options:

- Alternative Interim Compliance Options – Inventory and Health Risk Assessment
- Alternative Interim Compliance Options – Emission Reduction Plan
- Alternative Interim Compliance Options – Facility wide Mass Emission Rate
- Alternative Interim Compliance Options – Alternative Standards for Existing Hexavalent Chromium Electroplating and Chromic Acid Anodizing Facilities with Low Annual Ampere Hour Usage

The alternative interim compliance options are no longer options and facilities will be required to comply with the respective requirements specified in subdivision (h).

Training and Certification – Subdivision (j)

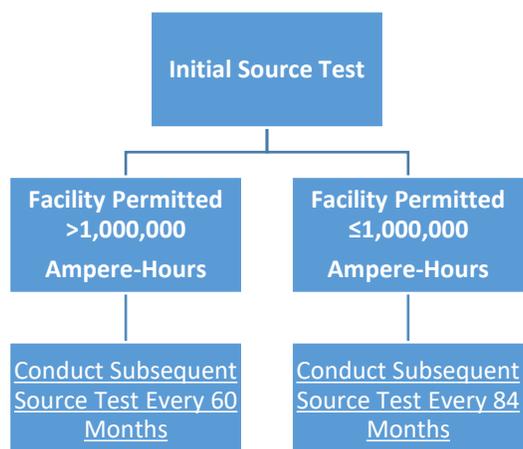
Previously the requirements for training and certification were located in paragraph (c)(7). The requirements has been moved to its own dedicated subdivision (j).

Source Test Requirements and Test Methods – Subdivision (k)

The subdivision has been renamed and relocated from subdivision (e) to (k). Currently, Rule 1469 only requires an initial source test either by 2009 or during installation. Periodic source tests are necessary to verify the continued performance of both the capture and control of hexavalent chromium emissions for add-on air pollution control devices specified in this rule. Although parameter monitoring can verify the operation of specific elements of the add-on air pollution control device, source tests allows for the comprehensive evaluation of the system.

Paragraph (k)(1) establishes source test requirements for the initial and subsequent source tests. Currently, Rule 1469 only requires an initial source test. Periodic source testing is needed to ensure that add-on pollution control equipment is operating properly and to that the emission limit is being achieved. As discussed in Chapter 1, staff did observe slot velocities that were below the needed air flow to ensure that emissions were being properly collected and moved towards the pollution control equipment. Throughout the rulemaking process, periodic source testing requirements were modified from once every other year to once every five or seven years depending on the facility's permitted annual amp-hours. Based on stakeholder input, the frequency of periodic subsequent source tests was modified based on the permitted amp-hours. Subparagraph (k)(1)(A) establishes the schedule for protocols and initial and subsequent source tests to meet the emission limits of paragraphs (h)(2) and (h)(4) in Table 3 – Source Tests Schedule in PAR 1469. In general, facilities with greater than 1,000,000 permitted annual amp-hours are required to source test no later than 60 months from the day of the most recent source test that demonstrates compliance with all applicable requirements and facilities with less than or equal to 1,000,000 permitted annual amp-hours are required to source test no later than 84 months from the day of the most recent source test that demonstrates compliance with all applicable requirements.

Figure 2-6: Flowchart Showing Source Test Requirements



Subparagraph (k)(1)(B) allows an owner or operator to submit a written request for additional time to conduct the initial source test. This subparagraph specifies the procedures of when the Executive Officer must be notified, the information that must be included in the notification, and the timing for approval to allow use of this provision.

Subparagraph (k)(1)(C) establishes provisions that allow an owner or operator to use an existing source test that was conducted after January 1, 2015 for compliance with provision for the initial source test provided the applicable emission limits in subdivision (h) are demonstrated, operating conditions during the source test are representative of current operating conditions, and the appropriate test methods were used. This provision reduces the impact to facilities that recently conducted a source test.

Subparagraph (k)(1)(D) establishes provisions for when a source test was conducted after January 1, 2015, however, the source test was not approved. Under this subparagraph, provided the owner or operator submits the source test to the Executive Officer for approval no later than 30 days after date of adoption, the Executive Officer will review the source test to verify if it can be used and meets the same criteria subparagraph (k)(1)(C).

Subparagraph (k)(1)(E) establishes provisions that require an owner or operator that is relying on a source test conducted after January 2015 under subparagraph (k)(1)(C) to conduct the first subsequent source test no later than January 1, 2024 and then follow the source testing schedule for subsequent source tests as specified in Table 3 – Source Tests Schedule of PAR 1469.

Subparagraph (k)(1)(F) clarifies that an owner or operator that elects to meet an emission limit specified in a paragraph (h)(2) using a certified wetting agent chemical fume suppressant or a certified alternative to a wetting agent chemical fume suppressant shall not be subject to the requirements of subparagraph (k)(1)(A). The rule interpretation for both the regulated community and SCAQMD was that a facility using a certified wetting agent chemical fume suppressant is not required to conduct a source test. A source test was performed during the certification process, which established a corresponding surface tension limit with the emission limit of 0.01 mg/ampere-hour.

Provisions for use of an Existing Performance Test in this subdivision were removed as the dates have passed and the provisions are no longer relevant.

Paragraph (k)(2) establishes requirements for approved test methods, test methods for add-on non-ventilated air pollution control devices, and methods to measure surface tension. There were no substantive changes to these provisions. This paragraph included clarifications that emissions testing for add-on non-ventilated air pollution control devices shall be conducted in accordance with Appendix 5 of PAR 1469.

Use of Emissions Screening Tests (k)(3)

Subparagraph (k)(3)(A) includes new requirements to PAR 1469 that allow the use of emissions screening tests. In lieu of conducting a source test for *subsequent* tests, the owner or operator may conduct an emission screening of hexavalent chromium. The emissions screening test shall:

- Consists of one run to evaluate the capture and control of hexavalent chromium emissions;
- Follow a source test protocol approved by Executive Officer; and
- Be representative of the operating conditions during the most recent source test

The owner or operator of a facility that previously submitted source test protocols approved by the Executive Officer may use an emissions screening test in lieu of a source test. An emissions screening test requires only one run to evaluate the hexavalent chromium emissions from a Tier II or Tier III Hexavalent Chromium Tank as opposed to the three runs required for a full source test.

Under subparagraph (k)(3)(B), an owner or operator with an SCAQMD approved source test conducted after January 1, 2009 will be allowed to conduct an emissions screening test to satisfy the requirements of conducting the *initial* source provided the subject source test met the criteria stated above. This subparagraph includes provisions that allow an operator to submit a source test that was conducted after January 1, 2009 for approval.

The emissions screening test of hexavalent chromium will show whether the air pollution control technique is operating and performing as intended. While parameter monitoring may evaluate the performance of capture periodically, the emissions screening test allows the verification of emission limits. Owners or operators may utilize this option as a method to reduce the testing time associated with conducting multiple runs required under a full source test. Within 30 days of receiving the results of the emissions screen test, subparagraph (k)(3)(C) requires the owner or operator to submit the results to the Executive Officer. Under subparagraph (k)(3)(D), the owner or operator will be required to conduct a source test using an approved method within 60 days of conducting an emission screening test that fails the capture efficiency test(s) specified in the source test protocol, exceeds an emission limit specified in the SCAQMD Permit to Operate, or exceeds an emission limit in subdivision (h).

Source Test Protocol (k)(4)

Paragraph (k)(4) establishes requirements for information required for source test protocols and provisions for when a previously approved source test protocol is used for subsequent source tests.

Emission Points Test Requirements (k)(5)

Paragraph (k)(5) establishes requirements for testing emission points unless a waiver is granted by U.S. EPA or the Executive Officer. There were no changes to this provision.

Capture Efficiency (k)(6)

Paragraph (k)(6) establishes the requirements for capture efficiency and adds more specificity: each add-on pollution control device must meet the design and ventilation velocities specified in *A Manual of Recommended Practice for Design* authored by the American Conference of Governmental Industrial Hygienists or alternative design criteria and ventilation velocities approved by the Executive Officer.

Smoke Test (k)(7)

Paragraph (k)(7) reference the methods that are required to be used for conducting a smoke test for add-on air pollution control devices (Appendix 5) and add-on non-ventilated air pollution control devices (Appendix 8).

Certification of Wetting Agent Chemical Fume Suppressant – Subdivision (I)

PAR 1469 paragraphs (I)(1), (I)(2), and (I)(3) modifies the existing requirements by prohibiting the addition of PFOS-based chemical fume suppressants and lowering the minimum surface tension of the tank to 40 dynes/cm, as measured by the stalagmometer, or below 33 dynes/cm, as measured by a tensiometer. This modification is made to be consistent with the federal NESHAP

for Chromium Electroplating which bans the use of PFOS in chemical fume suppressants. The certification list will be updated periodically based on the certification process conducted by SCAQMD and CARB. Paragraph (1)(3) requires that the owner or operator shall use certified chemical fume suppressant in accordance with the certification and manufacturer's specifications to ensure the chemical fume suppressant is optimized to reduce hexavalent chromium emissions and no unintended issues are occurring such as excessive foaming.

Recertification Process for Wetting Agent Chemical Fume Suppressants (1)(4)

During the rulemaking for PAR 1469 information became publicly available that the reformulated non-PFOS chemical fume suppressants contain similar long-chain chemicals as PFOS such as Per- and Polyfluoroalkyl (PFAS) substances and Perfluorooctanoic acid (PFOA). There is limited information on the health impacts of the non-PFOS chemical fume suppressants. Emissions tests have been conducted that show that non-PFOS chemical fume suppressants can significantly reduce hexavalent chromium emissions and can meet the required emission limit of 0.01 mg/amp-hour. However, there is currently no emissions data to understand the amount of non-PFOS chemical fume suppressant emissions that are released during plating and anodizing operations. SCAQMD staff will be conducting emissions tests to better understand the amount of non-PFOS chemical fume suppressant emissions that are released during plating and anodizing operations. The new certification process will consider toxicity reviews of compounds in the chemical fume suppressant, emissions testing for chemical fume suppressant emissions, surface tension, emissions testing for hexavalent chromium emissions, and additional data and information to evaluate the chemical fume suppressant.

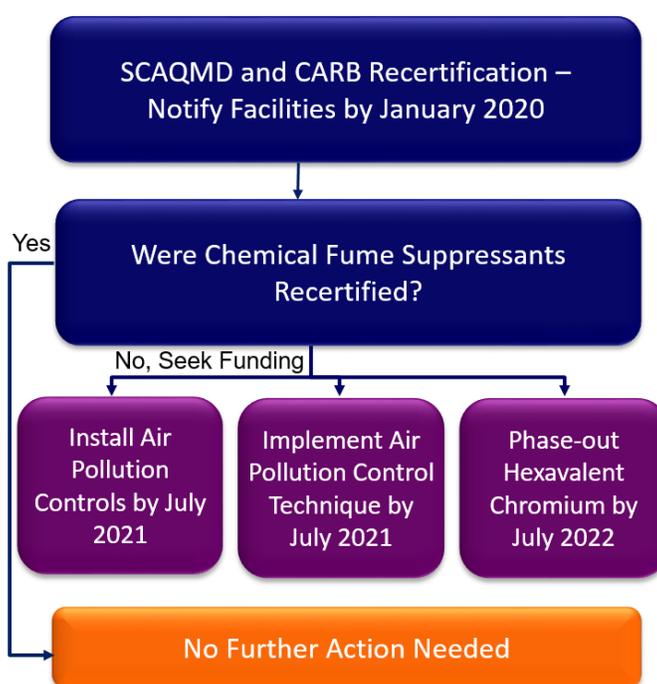
Paragraph (1)(4) of PAR 1469 adds a new requirement that no later than January 1, 2020, the Executive Officer shall notify owner or operators of the availability of a chemical fume suppressant and the certification status of any potential wetting agent chemical fume suppressant going through the certification process conducted by SCAQMD and CARB.

Paragraph (1)(5) requires that if a wetting agent chemical fume suppressant will not be available by July 1, 2021, the owners or operators of a facility shall only add a chemical fume suppressant to a chromium electroplating or chromic acid anodizing tank based on the information in the notice specified in paragraph (1)(4). The date of July 1, 2021 was chosen to allow sufficient time for facilities to implement alternatives, manufacturers to potentially reformulate, and SCAQMD staff to certify the chemical fume suppressant.

If the notice indicates that a chemical fume suppressant that meets the certification requirements will not be available by July 1, 2021, the owner or operator shall meet the emission limits specified in paragraph (h)(2) no later than July 1, 2021 or implement an alternative to a wetting agent chemical fume suppressant that meets the requirements to (1)(7). If an owner or operator of a facility elects to meet the requirements of paragraph (1)(5) by implementing an alternative to a wetting agent chemical fume suppressant the owner or operator would be required to submit a permit application for the chromium electroplating or chromic acid anodizing tank(s) that includes the alternative and any conditions specified in the approval of the alternative in paragraph (1)(8). Further, an owner or operator of a facility may elect to meet the requirements of paragraph (1)(5) by phasing-out the use of hexavalent chromium in a chromium electroplating or chromic acid anodizing tank that uses a wetting agent chemical fume suppressant. If the owner or operator of a

facility elects to phase out the use of hexavalent chromium the phase-out shall occur on or before July 1, 2022. The owner or operator of the facility shall submit a written commitment to the Executive Officer no later than January 1, 2021 that states the facility shall phase-out the use of hexavalent chromium in the electroplating or chromic acid anodizing tank that is using a chemical fume suppressant by July 1, 2022. This commitment shall be signed by the owner or operator of the facility. No later than July 1, 2022, the owner or operator would be required to cease operating and surrender SCAQMD permits to operate the chromium electroplating or chromic acid anodizing tank(s) that use(s) a wetting agent chemical fume suppressant. Figure 2-7 summarizes the re-certification timeline.

Figure 2-7: Revised Certification Timeline



Paragraph (1)(8) of PAR 1469 adds a new requirement that in the event the Executive Officer notifies facilities by January 1, 2020 that no wetting agent chemical fume suppressants will be available by July 1, 2021, the Executive Officer may identify one or more alternatives to a wetting agent chemical fume suppressant that meet the 0.01 milligrams per ampere-hour (mg/ampere-hour) limit. During the previous rule development of Rule 1469, wetting agent chemical fume suppressants were identified as an effective and low cost air pollution control technique to reduce hexavalent chromium emissions for facilities permitted less than or equal to 50,000 ampere-hours per year. The alternative to a wetting agent chemical fume suppressant will identify air pollution control technique(s) that must be used in combination to meet an equivalent emission rate of 0.01 mg/ampere-hour.

For example, the alternative to a wetting agent chemical fume suppressant may specify a combination of chemical and mechanical fume suppressants, or some combination of in-tank controls that will be certified to control emissions to a level below 0.01 mg/ampere-hour. The

certification process will include source tests by SCAQMD and no initial or recurring source testing will be required for individual facilities that are eligible to use this certified alternative. If the owner or operator used the SCAQMD-approved alternative to the chemical fume suppressants, the owner or operator would be required to accept applicable permit conditions. SCAQMD staff will work with CARB regarding approving an alternative to chemical fume suppressants.

The alternative to a wetting agent shall:

- Meet an emission limit that is equally effective as the emission limit required for a wetting agent chemical fume suppressant;
- Be approved by the Executive Officer in consultation with CARB to meet the emission limit requirement; and
- Be used by the owner or operator in accordance with the approval

Under paragraph (h)(2), Table 1, an existing facility is allowed to meet a hexavalent chromium emission limit of up to 0.01 mg/ampere-hour, provided the maximum permitted facility-wide ampere-hour level does not exceed 50,000 ampere-hours per year (for facilities located more than or equal to 330 feet from a sensitive receptor) and 20,000 ampere-hour per year (for facilities located less than 330 feet from a sensitive receptor). Staff has conducted modeling that demonstrates that for a facility permitted at 50,000 ampere-hours/yr, with emissions of hexavalent chromium at 0.01 mg/ampere-hour, the maximum individual cancer risk (MICR) at 25 meters will not exceed 10-in-a-million (10×10^{-6}). This is a conservative analysis since facilities permitted at 50,000 ampere-hours/yr would have to be located at least 328 feet away and the emissions from facilities permitted at 20,000 ampere-hours/yr might be located closer but would have less emissions.

The proposed approach allowed under subparagraph (l)(8) is health protective and provides a lower cost option for smaller use facilities. The owner or operator can still elect not to use the approved alternative approach and can install an add-on air pollution control device that meets an emission limit of 0.0015 mg/ampere-hour. This approach will allow existing facilities that currently rely on certified chemical fume suppressants to limit their compliance costs in the event chemical fume suppressants are not certified. This approach will reduce capital costs as well as eliminate cost for initial or recurring source tests.

The owner or operator that fails to phase-out the use of hexavalent chromium by July 1, 2022, will be required to cease operation of the electroplating or chromic anodizing tank that contains hexavalent chromium until the facility can meet the specified emission limits.

Parameter Monitoring – Subdivision (m)

PAR 1469 modifies the section to require revised and additional parameter monitoring requirements for add-on air pollution control devices and add-on non-ventilated air pollution control devices.

Subparagraph (m)(1)(A) establishes requirements to continuously monitor the operation of the add-on air pollution control device. Specifics regarding installation, maintenance, and labeling are

specified in Table 4 of PAR 1469. Requirements for maintaining the mechanical gauges are specified in Appendix 4 of PAR 1469.

Figure 2-8

**Table 4:
Pressure and Air Flow Measurement Parameters**

Permitted Air Pollution Control Technique	Location	Parameter Monitored	Units	Monitoring Start Date
Push-Pull Systems	Push Manifold	Static Pressure	Inches of water	60 Days After Completion of Initial Source Test or within [60 Days of Date of Rule Adoption]
All	Collection Manifold or Any Location within the System Using a Flow Meter	Static Pressure or Volumetric Flow Rate	Inches of water or Actual Cubic Feet per Minute	60 Days After Completion of Initial Source Test or within [60 Days of Date of Rule Adoption]
Existing on or Before [Date of Rule Adoption]	Across Each Stage of the Control Device	Differential Pressure	Inches of water	[Date of Rule Adoption]
Installed after [Date of Rule Adoption]	Across Each Stage of the Control Device	Differential Pressure	Inches of water	60 Days After Completion of Initial Source Test

As required in Table 4 of PAR 1469, the owner or operator using an add-on air pollution control device shall demonstrate that emissions are captured by measuring collection slot velocity and the push air manifold pressure. The demonstration shall be made during any source test. Beginning 60 days after the completion of the initial source test of a Tier II or Tier III Hexavalent Chromium tank, the owner or operator shall conduct additional parameter monitoring at least once every 180 days. An adequate collection slot velocity is required to ensure the collection of hexavalent chromium emissions is at the level measured during the source test.

Table 5 of PAR 1469: Add-on Air Pollution Control Device Parameter Monitoring, establishes the collection slot velocities and push air manifold pressure conditions that must be met. There are three categories: Acceptable Measurement, Repairable Measurement, and Failing Measurement. Since the collection slot velocity has two options, a measurement can be in more than one category. In this situation, the more favorable measurement would be used to determine the required action.

For example, if a collection slot velocity was measured at 1900 fpm (Repairable Measurement), which was equivalent to be 75% of the most recent passing source test (Failing Measurement), the measurement would necessitate the required action for a Repairable Measurement.

Figure 2-9
Table 5: Add-on Air Pollution Control Device Parameter Monitoring

	Collection Slot(s) Velocity ¹	Push Air Manifold Pressure (for push-pull systems only)	Required Action
Row 1: Acceptable Measurement	> 95% of the most recent passing source test or emission screening; or $\geq 2,000$ fpm	95-105% compared to the most recent passing source test or emission screening	None
Row 2: Repairable Measurement	90-95% of the most recent passing source test or emission screening test, or < 2,000 fpm and > 1,800 fpm	90-95% or 105-110% of the most recent passing source test or emission screening test	Repair or replace, and re-measure within 3 calendar days of measurement
Row 3: Failing Measurement	< 90% of the most recent passing source test or emission screening test, or < 1,800 fpm	> 110% or < 90% of the most recent passing source test or emission screening test	Immediately shut down any tanks controlled by the add-on air pollution control device that had a failing measurement

¹ If the measured slot velocity occurs in multiple rows, the owner or operator shall implement the required action in the lower numbered row. For example the owner or operator would implement the required action in Row 2, if the measured slot velocity occurs in Rows 2 and 3.

A deficient measurement would indicate that the hexavalent chromium emissions are not being collected and being controlled by the add-on air pollution control device. If the measurement of a collection slot velocity is a “repairable measurement” of 90-95% of the most recent passing source test or emissions screening test or less than 2,000 feet per minute (fpm) and greater than 1,800 fpm, the owner or operator shall repair or replace and re-measure the collection slot velocity within 3 calendar days of the measurement. The tank controlled by the add-on air pollution control device may continue to operate with the add-on air pollution control device in operation. If the owner or operator fails to demonstrate that the collection slot velocity is an “acceptable measurement” upon re-measurement, greater than 95% of the most recent source test or emission screening or greater than 2,000 fpm, the owner or operator shall shut-down any tanks associated with the add-on air pollution control devices associated with the collection slot.

For tanks with a push-pull collection system, the push air may be monitored by measuring either the push air velocity or the push air pressure. Monitoring of push air velocity may be measured with an anemometer; however, push air pressure may be measured continuously with a pressure gauge installed in the push air manifold. Although the 29th Edition of *Industrial Ventilation Manual*, did not include a recommended minimum nozzle manifold pressure (P_m , “w.g.”) in Table 13-72-1 “Push Nozzle Design Data,” it has a recommended flow rate and velocity based on tank dimensions and push manifold design. The previous 28th Edition of *Industrial Ventilation Manual* included the recommended pressure. The minimum pressure may still be calculated using the

recommended jet nozzle velocity (V_o) using equation 13.72.7 in the 28th Edition of the *Industrial Ventilation Manual*:

$$Pm = 1.5 \left(\frac{V_o}{4005} \right)^2$$

The values of V_o have remained the same in the 28th and 29th Editions of *Industrial Ventilation Manual*.

If the measurement of the collection slot velocity is in the “failing measurement” range, the owner or operator shall immediately shut down any tanks associated with any air add-on air pollution control devices associated with the collection slot. This prevents the owner or operator from operating a tank that may be emitting hexavalent chromium since the hexavalent chromium emissions are not being sufficiently collected. The owner or operator shall demonstrate that the collection slot velocity and/or push air manifold pressure is in the “acceptable measurement” by re-measuring the collection slot velocity and/or push air manifold pressure under typical operating conditions of the tank, with the exception of the suspension of electrolytic operations, prior to resuming electrolytic operations.

Smoke Test Requirements (m)(1)(E) and (m)(1)(F)

PAR 1469 subparagraph (m)(1)(E) clarifies the requirements of the smoke test by stating that both add-on air pollution control devices and add-on non-ventilated air pollution control devices are to be tested. PAR 1469 maintains the frequency for conducting smoke tests of once every 180 days. Add-on air pollution control devices have emission collection systems and the smoke tests demonstrate through a qualitative evaluation that emissions coming from the tank are being collected. Add-on non-ventilated air pollution control devices typically do not have an emissions collection system and a smoke test would demonstrate the containment of hexavalent chromium emissions by devices such as tank covers and merlin hoods.

Subparagraph (m)(1)(F) establishes what is an acceptable smoke test which is referenced in Appendix 5 and 8 of PAR 1469 for add-on pollution control devices and add-on non-ventilated pollution control devices, respectively. If an acceptable smoke test is not conducted, the owner or operator is required to immediately shutdown the Tier II and Tier III Hexavalent Chromium Tanks associated with the pollution control equipment until an acceptable smoke test is conducted.

HEPA Filters (m)(1)(G)

Subparagraph (m)(1)(G) establishes parameter monitoring for HEPA filters. Beginning 60 days after the completion of the initial source test, the owner or operator of an add-on air pollution control device equipped with HEPA filters shall ensure that the monitoring device for pressure drop:

- Is equipped with ports to allow for periodic calibration in accordance with manufacturer’s specifications;
- Is calibrated according to manufacturer’s specification at least once every calendar year; and
- Is maintained in accordance with the manufacturer’s specification.

Wetting Agent Chemical Fume Suppressants (Excluding Decorative Chromium Electroplating Tanks Using a Trivalent Chromium Bath) (m)(2)

The requirement to measure surface tension weekly after 20 daily measurements with no violation has been modified to once every third operating day, but not less than once per week. The required non-PFOS chemical fume suppressants evaporate and degrade faster than a PFOS-containing products. SCAQMD staff is concerned that this faster degradation can result in faster increases to surface tension values. More frequent periodic monitoring of tank bath surface tensions will ensure that an adequate amount of chemical fume suppressants are being used to comply with the surface tension limits specified in the rule and permit conditions. Subparagraph (m)(2)(C) requires daily surface tension measurements for 20 consecutive operating days if the surface tension is not maintained. The owner or operator can resume monitoring every third operating after successfully measuring the surface tension daily for 20 consecutive operating days.

Foam Blanket, Polyballs or Similar Mechanical Fume Suppressants (m)(3) and (m)(4)

The requirement to visually inspect each operating day for coverage comparable to the coverage during the source test has been modified to include Tier II and Tier III Hexavalent Chromium Tanks.

Inspection, Operation and Maintenance Requirements (n)

The requirements for inspection and maintenance and the operation and maintenance plan apply to add-on air pollution control devices or alternative add-on air pollution control devices. The existing table previously found in Table 4 has been moved to Appendix 4: Table 4-1. Tier II Hexavalent Chromium Tanks not controlled by an add-on air pollution control device shall comply with the applicable inspection and maintenance requirements in Appendix 4: Table 4-4. The existing requirements for facilities using chemical fume suppressants or mechanical fume suppressants has also been moved to Appendix 4, Table 4-4. PAR 1469 also combines the existing requirements for the operation and maintenance plan into this subdivision.

Also, Tier II hexavalent chromium tanks not controlled by an add-on air pollution control device and Tier I, Tier II, and Tier III hexavalent chromium tanks are required to comply with new inspection and maintenance requirements 90 days after the date of rule adoption.

Beginning 90 days after the date of rule adoption, paragraph (n)(3) and paragraph (n)(4) requires the owner or operator of a facility to comply with the additional inspection and maintenance requirements in Appendix 4.

Also, beginning 90 days after date of the rule adoption, paragraph (n)(9) requires the owner or operator to revise the facility's operation and maintenance plan to incorporate of the inspection and maintenance requirements for a device or monitoring equipment that is identified in Table 4-2 and Table 4-3 of Appendix 4.

Paragraph (n)(10) requires the owner or operator to photograph the ampere-hour reading of the ampere-hour being replaced and the new ampere-hour meter immediately after installation.

Recordkeeping and Reporting – Subdivisions (o) and (p)

Paragraph (o)(1) clarifies that the inspection records apply to facilities using either an add-on air pollution control devices or an alternative add-on air pollution control devices. Additional recordkeeping requirements have been included to reflect the proposed provisions for building enclosures, housekeeping, best management practices, periodic source tests, capture efficiency tests, emission screening, and parameter monitoring. Inspection and maintenance requirements have been moved to Appendix 4.

As part of the ongoing compliance status and emission reports (specified in Appendix 3), facilities should report the results of add-on air pollution ventilation measures conducted during the most recent source test. Information would include the velocity of each collection slot and push air manifold. Facilities must also report any pollution prevention measures that have been implemented that eliminate or reduce the use of hexavalent chromium in the chromium electroplating or chromic acid anodizing process. Also required in the compliance status reports are calculations for building enclosure envelopes, including locations and dimensions of openings counted towards the 3.5% allowance.

Paragraph (p)(4) revises “Reports of Breakdowns” to “Notification of Incident”. As background, SCAQMD Rule 430 provides breakdown coverage, where the facility may not be in violation of a permit condition or rule requirement, if the Executive Officer determines that it was a valid breakdown based on evidence provided by the owner or operator. However, the existing reference to Rule 430 in Rule 1469 is conflicting as Rule 430 does not apply to any Regulation XIV rules.

As a result, PAR 1469 replaces breakdown provisions with “Notification of Incident” which incorporates similar notification language used in Rule 430 by requiring the owner or operator to notify SCAQMD via 1-800-CUT-SMOG within four hours of the incident or within four hour of the time the owner or operator knew or reasonably should have known of the following:

- Any failed smoke test
- Any failed source test
- An exceedance of a permitted ampere-hour limit, or
- A malfunction of a non-resettable ampere-hour meter.

A supplemental report is required to be submitted no later than 30 calendar days from the date of incident.

New and Modified Sources (removed)

PAR 1469 removes previous subdivision (l) relating to New and Modified Sources as facilities are required to submit a permit prior to altering or installing equipment under existing SCAQMD rules for permitting (Regulation II) and toxic new source review (Rule 1401).

Exemptions – Subdivision (r)

Due to the new requirements for Tier I, II, and III Hexavalent Chromium Tanks, PAR 1469 removes the exemption for process tanks associated with a chromium electroplating or chromic acid anodizing process in which neither chromium electroplating nor chromic acid anodizing is taking place. One of the objectives of PAR 1469 is to control emissions from tanks that were identified as sources of hexavalent chromium where neither electroplating nor chromic acid anodizing is taking place.

PAR 1469 also removes the exemption that would suspend requirements during periods of equipment breakdown. As discussed earlier, references to Rule 430 have been removed due to the lack of applicability to Regulations XIV.

PAR 1469 adds an exemption from the requirements of subparagraphs (f)(6), (g)(5), and (g)(6) as long as the buffing, grinding or polishing operations are conducted under a continuous flood of metal removal fluid. The application of metal removal fluid has been demonstrated to reduce emissions.

Title V Permit Requirements (removed)

PAR 1469 removes the subdivision (o) as SCAQMD Rule 3002 already requires a facility to obtain a Title V permit and comply with the conditions. Therefore, this subdivision is unnecessary and duplicative.

Chromium Electroplating or Chromic Acid Anodizing Kits Requirements (removed)

PAR 1469 removes the requirements for chromium electroplating or chromic acid anodizing kits as this existing language was from the state's Chrome Plating ATCM regarding prohibitions on chromium electroplating and chromic acid anodizing kits. This language has been removed as Rule 1469 facilities are still subject to those requirements under state law.

Conditional Requirements for Permanent Total Enclosure – Subdivision (t)

Paragraph (t)(1) requires the owner or operator of a facility to install a permanent total enclosure for a Tier III Hexavalent Chromium Tank that does not exceed 3.5% for all enclosure openings as specified in paragraph (e)(1) for a Tier III hexavalent chromium tank:

- That results in more than one non-passing source test as required in paragraph (k)(1) occurring within a consecutive 48-month period; or
- Not immediately shut down pursuant to clause (m)(1)(C)(iii) or subparagraph (m)(1)(D) or subparagraph (m)(1)(F) more than once within a consecutive 48-month period and the facility is greater than 1,000 feet from a sensitive receptor; or
- Not immediately shut down pursuant to clause (m)(1)(C)(iii) or subparagraph (m)(1)(D) or subparagraph (m)(1)(F) once and the facility is 1,000 feet or less from a sensitive receptor.

The distance of a sensitive receptor or a school to the facility shall be measured from the property line of the sensitive receptor or school to the nearest property line of the facility.

Paragraph (t)(2) allows the owner or operator to contest the requirement in paragraph (t)(1) to install a permanent total enclosure within 30 days of receiving notification from the Executive Officer that the requirement had been triggered. A written report contesting the requirement shall include evidence that installation of the permanent total enclosure is not warranted based on the following criteria:

- The incidents of non-compliances did not occur; or
- The owner or operator resolved the specified incidents of non-compliances specified in paragraph (t)(1) in a timely manner; or
- The owner or operator implemented specific measures minimize the hexavalent chromium emissions.

The Executive Officer will use the information in the written report to determine whether the permanent total enclosure is required and will notify the owner or operator within 90 days of receiving the written report.

Paragraph (t)(4) requires permanent total enclosures to vent to an add-on air pollution control device that is fitted with HEPA filters, or other filter media that is rated by the manufacturer to be equally or more effective, and designed in a manner that does not conflict with requirements or guidelines set forth by OSHA or CAL-OSHA regarding worker safety, or the National Fire Protection Association regarding safety.

Paragraph (t)(5) requires permit applications for permanent total enclosures to be submitted to the Executive Officer as follows:

- No later than 180 days after notification by the Executive Officer if the property line of the facility is within 500 feet of the property line of any sensitive receptor.
- No later than 270 days after notification by the Executive Officer for all other facilities.

Installation of the permanent total enclosure shall be completed no later than 12 months after the Permit to Construct is issued by the Executive Officer.

Hexavalent Chromium Phase-out – Subdivision (u)

Paragraph (u)(1) provides that owners and operators of facilities with an existing Tier III Tank that plan to eliminate or reduce hexavalent chromium concentrations within the tank shall not be subject to the requirements of paragraph (h)(4) to vent the tank to an add-on air pollution control device. In order to qualify for this exemption, facilities must submit a plan to the Executive Officer for approval that includes:

- The method by which the hexavalent chromium concentration will be eliminated or reduced and expected completion date; and
- A list of milestones necessary to occur, including their projected dates; and
- A list of all control measures that will be implemented until the concentration is eliminated or reduced.

Paragraph (u)(2) requires the Hexavalent Chromium Phase-Out Plan to be subject to the fees specified in Rule 306.

Paragraph (u)(4) requires the owner or operator to submit a progress report to the Executive Officer by the first day of each calendar quarter indicating the performance to meet the increments of progress for the previous quarter or submit according to an alternative schedule as specified in the approved plan.

Paragraph (u)(5) requires owners or operators to submit complete SCAQMD permit applications to comply with subdivision (h) if:

- The owner or operator does not eliminate or reduce hexavalent chromium by the final completion date in the Hexavalent Chromium Phase-Out Plan;
- The Executive Officer denies a resubmitted Hexavalent Chromium Phase-out Plan; or
- The owner or operator fails to resubmit the Hexavalent Chromium Phase-Out Plan.

Paragraph (u)(6) requires the owner or operator to install the add-on air pollution control device no later than 180 days after a Permit to Construct is issued.

Time Extensions – Subdivision (v)

Paragraph (v)(1) allows an owner or operator of a facility to submit a request to the Executive Officer for a one-time extension for up to 12 months to:

- Complete installation of an add-on air pollution control device, implement an approved alternative compliance method, or implement an approved Hexavalent Chromium Phase-Out Plan to meet the requirements under subparagraph (h)(4)(C); or
- Meet the hexavalent chromium emission limit, phase-out the use of hexavalent chromium, or implement an alternative to a wetting agent chemical fume suppressant required under paragraph (l)(5).

Paragraph (v)(2) requires an owner or operator of a facility that requests a time extension under paragraph (v)(1) to submit the request no later than 90 days before the compliance deadline specified in subparagraph (h)(4)(C) or paragraph (l)(5) and provide:

- The facility name, SCAQMD facility identification number, and the name and phone number of a contact person;
- A description of the chromium electroplating or chromic acid anodizing tank and the SCAQMD Permit to Operate and tank number;
- A description of the emission reduction approach that is being implemented;
- The specific provision under subparagraph (h)(4)(C) or paragraph (l)(5) for which a compliance extension is being requested;
- The reason(s) a time extension is needed;
- Progress in meeting the provisions in subparagraph (h)(4)(C) or paragraph (l)(5) including but not limited to date permit application was submitted to the SCAQMD, date permit to construct was approved, purchase order of equipment, date of service of contractors or consultants to install equipment; and
- The length of time requested, up to 12 months.

Paragraph (v)(3) sets-forth criteria for the Executive Officer to review and approve the time extension requested by an owner or operator. Specifically, the owner or operator would be required to demonstrate that there are specific circumstances beyond the control of the owner or operator that necessitate additional time to meet the compliance dates specified under subparagraph (h)(4)(C) and paragraph (l)(5). Additionally, the demonstration would be required to be substantiated with information that includes, but is not limited to detailed schedules, engineering designs, construction plans, permit applications, purchase orders, economic burden, and technical infeasibility.

Appendices

All additions and amendments to the following appendices have been made in order to provide clarity and information on PAR 1469.

Appendix 1 – Content of Source Test Reports

- Items 9-11 have been added to require applicable industrial ventilation limits; collection slot velocities (if applicable); and measured static, differential, or volumetric flow rate at the push manifold; across each stage of the control device; and exhaust stack (if applicable).

Appendix 4 – Notification of Construction Reports

- Removed because information required for future construction of equipment at new or existing facilities is submitted with a Permit to Construct.

Appendix 4 – Summary of Inspection Requirements

- Table 4-1: Summary of Inspection and Maintenance Requirements for Sources Using Add-on Air Pollution Control Device(s) or Add-On Non-Ventilated Air Pollution Control Device(s) previously in Table 4 has been added.
- Table 4-2: Additional Inspection and Maintenance Requirements for Tier I, II, and III Hexavalent Chromium Tank(s) has been added.
- Table 4-3: Summary of Inspection and Maintenance Requirements for Sources Not Using Add-on Air Pollution Control Device to Control Hexavalent Chromium Tank(s) has been added.
- Table 4-4: Summary of Inspection and Maintenance Requirements for Sources Using Chemical or Mechanical Fume Suppressants previously in Table 5 has been added.

Appendix 5 – Smoke Test for Add-on Non-Ventilated Air Pollution Control Device

Appendix 7 – Distance Adjusted Ampere-Hour and Annual Emissions Limits for Facilities Located More Than 25 Meters from a Residence or Sensitive Receptor

- Removed as the tables included in the appendix were for provisions in the Rule 1469 that were removed

Appendix 7 – Information Demonstrating an Alternative Method(s) of Compliance Pursuant to Subdivision (i)

- Item 5 has been added to require an owner or operator to demonstrate that the facility is at least 75 feet from a sensitive receptor. Facilities that are within 75 feet from a sensitive receptors are ineligible to utilize an alternative method and are required to use an add-on air pollution control device.

Appendix 8 – Smoke Test to Demonstrate Capture Efficiency for an Add-on Air Pollution Control Device(s) Pursuant to Paragraph (k)(6)

- Item 2.1 has removed a reference to Model #15 049 Tel-Tru T-T Smoke Sticks from E. Vernon Hill Incorporated

Appendix 10 – Tier II and Tier III Hexavalent Chromium Tank Thresholds

Numbering was added for Items 1, 2, and 3. The information within those items are not new provisions since the October 2, 2018 proposed amended rule language.

- Item 1. This identifies the temperature ranges and corresponding hexavalent chromium concentrations that would classify a tank to be either a Tier II Hexavalent Chromium Tank or Tier III Hexavalent Chromium Tank.
- Item 2. This clarifies that electrolytic tanks with a hexavalent chromium concentration greater than 1,000 ppm shall be considered a Tier III Hexavalent Chromium Tank regardless of operating temperature.

- Item 3. This clarifies that air sparged tanks with a hexavalent chromium concentration greater than 1,000 ppm shall be considered a Tier III Hexavalent Chromium Tank regardless of operating temperature.
- Item 4 has been added since the October 2, 2018 proposed amended rule language. It allows small tanks with a surface area less than four square feet that have a hexavalent chromium concentration less than 11,000 ppm with a temperature less than 210 degrees Fahrenheit to be exempt from the requirements of subparagraph (h)(4)(A) under certain circumstances. Staff calculated the emissions from these tanks and if the operator is operating the tank between 170 and 210 degrees Fahrenheit for two and one-half (2.5) hours per week or less, maximum potential hexavalent chromium emissions from these tanks would be less than the maximum potential emissions from tanks controlled to 0.2 mg/hour. Although no add-on pollution controls would be required for these small tanks, the operator must cover the tank pursuant to paragraph (h)(5) by utilizing a tank cover and will be required to maintain a data logger pursuant to paragraph (n)(3), to log the duration of time and temperature of tank to demonstrate the temperature of the tank is between 170 and 210 degrees Fahrenheit for no more than 2.5 hours per week.

CHAPTER 3: IMPACT ASSESSMENT

AFFECTED FACILITIES

EMISSION IMPACTS

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

SOCIOECONOMIC IMPACT ASSESSMENT

**DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY
CODE SECTION 40727**

COMPARATIVE ANALYSIS

AFFECTED FACILITIES

Based on site visits conducted by SCAQMD staff, SCAQMD permit database searches, internet searches, and third-party sources, there are a total of 115 facilities that either conduct chromium electroplating or chromic acid anodizing. SCAQMD staff conducted site visits at 47 facilities, each with a variety of air pollution controls and operations.

EMISSION IMPACTS

PAR 1469 affects 115 facilities conducting electroplating or anodizing that use hexavalent chromium or trivalent chromium. Implementation of PAR 1469 will reduce both point source (requiring controls on previously uncontrolled tanks) and fugitive emissions (improving housekeeping and requiring operations to be conducted in a building). Quantifying the point source emissions reductions is difficult as there is large variance in hexavalent chromium emissions between the tanks and there are a limited number of source tests. The emissions of other air toxics generated the metal finishing operations may be reduced as well.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Pursuant to CEQA and SCAQMD Rule 110, the SCAQMD, as lead agency for the proposed project, has prepared a Draft Environmental Assessment (EA) for PAR 1469. The environmental analysis in the Draft EA concluded that PAR 1469 would not generate any significant adverse environmental impacts, and therefore no alternatives or mitigation measures are required. The Draft EA was released for a 32-day public review and comment review period from February 16, 2018 to March 20, 2018. Two comment letters were received during from the public comment period relative to analysis presented in the Draft EA. The comment letters and responses to the comments will be prepared and were included in Appendix E of the Final EA (dated August 2018), which was released as part of the Governing Board package for the first Public Hearing on September 7, 2018. Since the release of the Draft EA, modifications were made to the proposed project which were reflected in the Final EA. Further, subsequent to the release of the Final EA, some additional modifications were made to PAR 1469 which are reflected in the Revised Final EA (dated October 2018). SCAQMD staff has reviewed the modifications to the proposed project and concluded that none of the modifications constitute significant new information, or a substantial increase in the severity of an environmental impact, or provide new information of substantial importance regarding the Draft EA, Final EA, or Revised Final EA. In addition, revisions to Proposed Amended Rule 1469 in response to verbal and written comments would not create new, avoidable significant effects. As a result, these revisions do not require recirculation of the Draft EA pursuant to CEQA Guidelines Section 15073.5 or 15088.5. Therefore, the Draft EA and Final EA has been revised to reflect the aforementioned modifications and to include the comment letters and responses to comments such that it is now the Revised Final EA. The SCAQMD Governing Board must review the adequacy of the Revised Final EA, including responses to comments, prior to the certification of the Revised Final EA and adoption of the proposed amendments to Rule 1469.

SOCIOECONOMIC IMPACT ASSESSMENT

A Draft Socioeconomic Impact Assessment ~~will~~ was prepared and ~~be~~ released on ~~or before~~ October 32, 2018 for public review and comment prior to the SCAQMD Governing Board Hearing on PAR 1469, which is anticipated to be heard on November 2, 2018.

DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY CODE SECTION 40727

Requirements to Make Findings

H&SC Section 40727 requires that prior to adopting, amending or repealing a rule or regulation, the SCAQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing and in the staff report.

Necessity

PAR 1469 is needed to further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations. PAR 1469 proposes new requirements for hexavalent chromium tanks, such as dichromate seal tanks, that are currently not regulated under Rule 1469. PAR 1469 requires air pollution controls for hexavalent chromium tanks that have the potential to emit hexavalent chromium. In addition, PAR 1469 includes periodic source testing, parameter monitoring of control equipment, requirements for building enclosures, and additional housekeeping and best management practices for all hexavalent chromium tanks. Proposed requirements include triggered provisions for permanent total enclosures vented to air pollution controls based on non-compliance with specific source testing or monitoring requirements. PAR 1469 also revises existing requirements to reduce surface tension limits and prohibit the use of chemical fume suppressants that contain PFOS in order to be consistent with the Chrome Plating NESHAP.

Authority

The SCAQMD Governing Board has authority to adopt PAR 1469 pursuant to H&SC Sections 39002, 39650 et. seq., 40000, 40440, 40441, 40702, 41508, and 41700.

Clarity

PAR 1469 is written or displayed so that its meaning can be easily understood by the persons directly affected by it.

Consistency

PAR 1469 is in harmony with and not in conflict with or contradictory to, existing statutes, court decisions or state or federal regulations.

Non-Duplication

PAR 1469 will not impose the same requirements as an existing state or federal regulations. PAR 1469 implements the state ATCM and U.S. EPA's NESHAP for chrome plating and anodizing facilities. PAR 1469 incorporates provisions from the state ATCM and NESHAP as well as has additional provisions that are more stringent than the NESHAP and ATCM. The proposed amended rule is necessary and proper to execute the powers and duties granted to, and imposed upon, the SCAQMD.

Reference

By adopting PAR 1469, the SCAQMD Governing Board will be implementing, interpreting or making specific the provisions of H&SC Section 41700 (nuisance), and Federal Clean Air Act Section 112 (Hazardous Air Pollutants) and Section 116 (Retention of State authority), California Code of Regulations Sections 93102-93102.16 (Airborne Toxic Control Measure for Chromium Plating and Chromic Acid Anodizing Facilities), and 40 CFR Part 63, Subpart N (National Emission Standards for Hazardous Air Pollutant Emissions: Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks).

COMPARATIVE ANALYSIS

H&SC Section 40727.2 requires a comparative analysis of the proposed rule requirements with those of any federal, state, or SCAQMD rules and regulations applicable to the same equipment or source category.

The following regulations are compared to PAR 1469 in this analysis:

- Federal – National Emission Standards for Hazardous Air Pollutant Emissions: Hard and Decorative Chromium Electroplating and Chromium Anodizing (NESHAP)
- State – Airborne Control Toxic Measures for Hexavalent Chromium Emissions from Chromium Plating and Chromic Acid Anodizing Facilities (ATCM)

Rule Element	PAR 1469	ATCM	NESHAP
General Requirements	<ul style="list-style-type: none"> • Require operation of a Tier I, Tier II, or Tier III Hexavalent Chromium tank to be in a building enclosure 	None Specified	None Specified
Building Enclosure Requirements for Tier II and Tier III Tanks	<p>Beginning [180 days after Date of Rule Adoption], the owner or operator of a facility shall only operate Tier II and Tier III Hexavalent Chromium and associated process tanks within a building enclosure that meets the following requirements:</p> <ul style="list-style-type: none"> • Combined area of all enclosure openings shall not exceed 3.5% • Close or limit openings that are on opposite ends of the building 	None Specified	None Specified

	<ul style="list-style-type: none"> • Close any enclosure opening that directly faces and opens towards up to two sensitive receptors • Close all enclosure openings in the roof that are located within 15 feet of Tier II and Tier III Hexavalent Chromium Tanks except for openings that: <ul style="list-style-type: none"> ○ Allow access for equipment or parts; or ○ Provide intake air or circulation air for a building enclosure that does not create air velocities that impact the collection efficiency of a ventilation system for an add-on air pollution control device; or ○ Are equipped with a HEPA filter or other air pollution control device • Repair any breach within 72 hours of discovery • The owner or operator shall notify the Executive Officer of any conflicting requirements set by any other government agency and propose alternative compliance 		
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	measure(s) to minimize the release of fugitive emissions		
Housekeeping Requirements	<ul style="list-style-type: none"> • Clean, using an approved method, surfaces within the enclosed storage area, open floor area, walkways around Tier I, Tier II, or Tier III Hexavalent Chromium Tank(s) or any surface potentially contaminated with hexavalent chromium weekly; • Clean, using an approved method, or contain using a drip tray or other containment device, any liquid or solid material that may contain hexavalent chromium that is spilled immediately and no later than one hour after being spilled. • Containers that contain chromium containing waste material shall be kept closed at all times except when being filled or emptied; • On days when buffing, grinding, or polishing are conducted, the owner or operator shall clean, using an approved cleaning method, floors within 20 feet of a buffing, grinding or polishing workstation 	<ul style="list-style-type: none"> • Clean at least once every seven days surfaces within the enclosed storage area, open floor area, walkways around the electroplating or anodizing tank (s), or any surface potentially contaminated with hexavalent chromium, that accumulates or potentially accumulates dust; • Clean or contain spilled liquid or solid material containing hexavalent chromium within one hour to minimize track out. • Store, dispose, recover, or recycle chromium or chromium containing wastes generated from housekeeping activities using practices that do not lead to fugitive dust and in accordance with hazardous waste requirements 	<ul style="list-style-type: none"> • At least once every 7 days, surfaces within the enclosed storage area, open floor area, walkways around affected tanks contaminated with hexavalent chromium from an affected chromium electroplating or chromium anodizing tank shall clean the surfaces using one of the following methods; HEPA vacuuming, hand-wiping with a damp cloth, wet mopping, hose down or rinse with potable water, other cleaning method approved by permitting authority or apply a non-toxic dust suppressant • Begin clean up, or otherwise contain all spills within 1 hour of the spill. • All chromium or chromium-containing wastes generated from housekeeping activities shall be stored, disposed, recovered, or recycled so that practices do not lead to fugitive dust and in accordance with

	<ul style="list-style-type: none"> • Eliminate all flooring or walkways in the tank process area that is made of fabric such as carpets or rugs where hexavalent chromium containing materials can become trapped. • During the cutting of any roof surface of a building enclosure the owner or operator shall perform the following: <ul style="list-style-type: none"> ○ Prior to cutting, roof surfaces shall be cleaned by using a HEPA vacuum ○ All cutting activities shall be conducted in a manner that does not generate fugitive emissions ○ Notify SCAQMD at least 48 hours prior to the commencement of any work being performed 		<p>hazardous waste requirements</p>
<p>Best Management Practices</p>	<ul style="list-style-type: none"> • Facilities with automated lines shall have drip trays or other containment equipment between Tier I, Tier II, or Tier III Hexavalent Chromium Tank(s) and its adjacent tank • Facilities without automated lines shall handle parts and equipment used to 	<ul style="list-style-type: none"> • Minimize drag-out from hexavalent chromium electroplating and chromic acid anodizing tank(s) by installing drip trays for facilities with automated lines, or by handling electroplated or anodized parts such that chromic acid is not 	<ul style="list-style-type: none"> • Install drip trays that collect and return any bath solution, contain and return to the tank any bath solution, contain and return to the tank any bath solution, or collect and treat in an onsite wastewater

	<p>handle such parts, so that liquid containing chromium is not dripped outside the electroplating or anodizing tanks, unless the liquid is captured by a drip tray or other containment device</p> <ul style="list-style-type: none"> • The owner or operator shall not spray rinse parts or equipment that have chromium-containing liquid unless the parts or equipment are fully lowered inside a tank where the overspray and all liquid is captured inside the tank. Alternatively the owner or operator may: <ul style="list-style-type: none"> ○ Install a splash guard at the tank that is free of holes, tears, or openings ○ For tanks located within a process line, utilizing an overhead crane system, a low pressure spray nozzle and operated in a manner such that water flows off of the part or equipment and into the tank • Maintain clear labeling of each tank within the tank process area with a 	<p>dripped outside of the electroplating tank.</p> <ul style="list-style-type: none"> • Facilities without automated lines that spray down parts over the electroplating or anodizing tank(s) shall install splash guards • Separate buffing, grinding, or polishing areas within a facility by installing a physical barrier 	<p>treatment plant any bath solution</p> <ul style="list-style-type: none"> • Each spraying operation for removing excess chromic acid from parts removed from, and occurring over, an affected tank shall install a splash guard to minimize overspray during spraying operations and to ensure that any hexavalent chromium-laden liquid captured by the splash guard is returned to the affected chromium electroplating or anodizing tank • All buffing, grinding, or polishing operations that are located in the same room as chromium electroplating or chromium anodizing operations shall be separate from any affected electroplating or anodizing operation by installing a physical barrier
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	<p>tank number or other identifier, SCAQMD permit number, bath contents, maximum concentration (ppm) of hexavalent chromium, operating temperature range, any agitation methods used, and designation of whether it is a Tier I, Tier II, or Tier III Tank</p> <ul style="list-style-type: none"> • Conduct all buffing, grinding, and polishing operations within a building enclosure. • Install a barrier to separate the buffing, grinding, or polishing within a facility from the chromium electroplating or chromic acid anodizing operation • Prohibit compressed air cleaning or drying operations within 15 feet of all Tier I, Tier II, or Tier III Hexavalent Chromium Tank(s) unless: <ul style="list-style-type: none"> ○ A barrier separates those tanks from the compressed air cleaning or drying operations ○ Compressed air cleaning or drying operations are conducted in a permanent total enclosure 		
<p>Add-on Air Pollution</p>	<ul style="list-style-type: none"> • Owner or operator of a facility that conducts 	<p>None Specified</p>	<p>None Specified</p>

<p>Control Devices and Emission Standards: Tier III Tank Requirements</p>	<p>chromium electroplating or chromic acid anodizing operations shall collect and vent all hexavalent chromium emissions from each Tier III Hexavalent Chromium Tank, excluding chromium electroplating and chromic acid anodizing tanks that meets the following emission limits:</p> <ul style="list-style-type: none"> ○ For existing facilities, 0.0015 mg/amp-hr, if any tanks that are vented are electrolytic; or ○ For new facilities, 0.0011 mg/amp-hr, if any tanks that are vented are electrolytic; or ○ 0.20 mg/hr, if all tanks vented to the add-on air pollution control device are not electrolytic and the ventilation system has a maximum exhaust rate of 5,000 cfm or less; or ○ 0.004 mg/hr-ft², with the applicable surface area based on the tank surface area of 		
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	<p>all Tier III Hexavalent Chromium Tank(s) and other tanks required to be controlled by SCAQMD Permit to Operate vented to an add-on air pollution control device, if the ventilation system has a maximum exhaust rate of greater than 5,000 cfm</p> <ul style="list-style-type: none"> • Add-on air pollution control devices shall be installed by the owner or operator of a facility 12 months after a Permit to Construct has been issued by the Executive Officer or implement the alternative compliance method to meet the requirements for hexavalent chromium emission limits under subparagraph (h)(4)(A) based on the timeframe specified in the approved alternative compliance method; or no later than two years after approval, the owner or operator of a facility shall implement an approved Hexavalent Chromium Phase-Out 		
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	<p>Plan pursuant to subdivision (u).</p> <ul style="list-style-type: none"> • Beginning no later than [30 days after Date of Adoption], until the add-on air pollution control has been installed, cover the tank no later than 30 minutes after ceasing operation of the tank. Tank covers shall be free of holes, tears, and gaps and handled in a manner that does not lead to fugitive emissions. • The owner or operator shall not be subject to the requirement to vent a Tier III Hexavalent Chromium Tank to an add-on air pollution control device if the uncontrolled hexavalent chromium emission rate of the tank is less than 0.2 mg/hr as demonstrated by a source test and it is not a chromium electroplating or chromic acid anodizing tank. 		
<p>Add-on Air Pollution Control Devices and Emission Standards: Tier II Tank Requirements</p>	<ul style="list-style-type: none"> • Beginning no later than [30 days after Date of Adoption], Tier II Tanks must utilize a tank cover, mechanical fume suppressant, or other emission control method approved by the Executive Officer. 	<p>None Specified</p>	<p>None Specified</p>

	<ul style="list-style-type: none"> Alternatively, the owner or operator of a facility may meet the Tier III Tank emission limit requirements 		
Add-on Air Pollution Control Devices and Emission Standards: General	<ul style="list-style-type: none"> An owner or operator of a facility that conducts chromium electroplating or chromic acid anodizing operations shall operate air pollution control techniques at the applicable minimum hood induced capture velocity. 	None Specified	None Specified
Source Test Requirements: Schedule	<ul style="list-style-type: none"> Owner or operator shall conduct the initial source test no later than 120 days after approval of the initial source test protocol A source test conducted after January 1, 2015, may be used to demonstrate compliance with the initial source test. Subsequent source tests are required to be conducted within 60 months of the most recent successful SCAQMD approved source test for facilities permitted for more than 1,000,000 ampere-hours per year Subsequent source tests are required to be conducted within 84 months of the most recent successful 	<ul style="list-style-type: none"> Initial test required to demonstrate compliance with emission rate standards except for chromium electroplating or chromic acid anodizing tanks using wetting agent chemical fume suppressants for sole method of compliance 	None Specified

	<p>SCAQMD approved source test for facilities permitted for less than or equal to 1,000,000 ampere-hours</p> <ul style="list-style-type: none"> • An owner or operator of facility that elects to meet an emission limit specified in paragraph (h)(2) using a certified wetting agent chemical fume suppressant or certified alternative wetting agent chemical fume suppressant shall not be subject to the requirements of subparagraph (k)(1)(A) 		
<p>Source Test Requirements: Emission Screening</p>	<ul style="list-style-type: none"> • An emission screening of hexavalent chromium for a Tier III Hexavalent Chromium Tank may be alternatively conducted to comply with the requirements for subsequent source tests if the emissions screening test: <ul style="list-style-type: none"> ○ Follows a source test protocol previously submitted and approved by the SCAQMD ○ Consists of one run to evaluate the capture and control of hexavalent chromium emissions 	<p>None Specified</p>	<p>None Specified</p>

	<ul style="list-style-type: none"> ○ Be representative of operating conditions at the facility ● An emissions screening test of hexavalent chromium for a Tier III Hexavalent Chromium Tank may be conducted as an alternative to complying with the requirements for an initial source tests if: <ul style="list-style-type: none"> ○ The emissions screening meets the requirements of clauses (k)(3)(A)(i) through (iii); ○ The facility conducted a source test after January 1, 2009 that meets the requirements of clauses (k)(1)(C)(i) through (k)(1)(C)(iii) ○ Submit to the Executive Officer a source test that requires approval to satisfy clause (k)(3)(B)(ii) no later than [30 days after Date of Rule Adoption] ● The owner or operator shall submit to SCAQMD the results of the emission screening within 30 		
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	<p>days of receiving the results</p> <ul style="list-style-type: none"> • The owner or operator shall conduct a source test using an approved test method within 60 days of conducting an emission screening that: <ul style="list-style-type: none"> ○ Fails the capture efficiency test(s) specified in the source test protocol; ○ Exceeds an emission limit specified in the Permit to Operate; ○ Exceeds an emission standard 		
<p>Source Test Protocol Submittal</p>	<ul style="list-style-type: none"> • The owner or operator shall submit source test protocols for source tests based on the schedule below for air pollution control techniques existing on or before [Date of Adoption] • Facility Permitted >20,000,000 Amp-hrs <ul style="list-style-type: none"> ○ Initial source test protocol due no later than [180 Days After Date of Adoption] ○ 180 days prior to due date of subsequent source test • Facility Permitted <20,000,000 and >1,000,000 	<p>None Specified</p>	<p>None Specified</p>

	<ul style="list-style-type: none"> ○ Initial source test protocol due no later than [365 Days After Date of Adoption] ○ 180 days prior to due date of subsequent source test ● For new or modified air pollution control techniques after [Date of Adoption] <ul style="list-style-type: none"> ○ Initial source test protocol due 60 days after initial start-up ○ 180 days prior to due date of subsequent source test ● Most recent SCAQMD approved source test protocol may be used for subsequent source tests if there are no changes since the last successful SCAQMD approved source test 		
<p>Capture Efficiency</p>	<ul style="list-style-type: none"> ● The owner or operator of a facility that is required to conduct a source test pursuant to subdivision (k) shall demonstrate that each add on-air pollution control device meets the design criteria and ventilation velocities specified in <i>A Manual of Recommended Practice for Design</i> authored by the American Conference of Governmental Industrial Hygienists 	<p>None Specified</p>	<p>None Specified</p>

	or alternative design criteria and ventilation velocities approved by the Executive Officer.		
Smoke Test	<ul style="list-style-type: none"> The owner or operator of a facility shall conduct a smoke test for each add-on air pollution control device pursuant to Appendix 5 and each add-on non-ventilated air pollution control device pursuant to Appendix 8. If an acceptable test is not conducted, the owner or operator shall shutdown all Tier II and Tier III Hexavalent Chromium Tanks associated with the add-on air pollution control device or add-on non-ventilated air pollution control device until an acceptable test is conducted. 	None Specified	None Specified
Wetting Agent Chemical Fume Suppressants	<ul style="list-style-type: none"> The owner or operator shall not add PFOS based fume suppressant to any chromium electroplating or chromic acid anodizing bath. Surface tension shall be maintained below: <ul style="list-style-type: none"> 40 dynes/cm (stalagmometer) 33 dynes/cm (tensiometer) Has been certified by the Executive Officer based on a 	<ul style="list-style-type: none"> Certify wetting agent chemical fume suppressants to achieve a surface tension level at which an emission factor of ≤ 0.01 mg/amp-hr is achieved. Wetting agent chemical fume suppressants must additionally meet a surface tension of < 45 dynes/cm (stalagmometer) or < 35 dynes/cm (tensiometer) 	<ul style="list-style-type: none"> After September 21, 2015, the owner or owner of an affected facility shall not add PFOS-based fume suppressant If a chemical fume suppressant containing a wetting agent is used, the surface tension of the electroplating or anodizing bath shall not exceed: <ul style="list-style-type: none"> 40 dynes/cm (stalagmometer)

	certification process conducted by SCAQMD and CARB		○ 33 dynes/cm (tensiometer)
Wetting Agent Chemical Fume Suppressants: Certification/Phase Out	<ul style="list-style-type: none"> • No later than January 1, 2020, the Executive Officer shall notify the owner or operator of the following information: <ul style="list-style-type: none"> ○ Availability of a wetting agent chemical fume suppressant that is certified by the Executive Officer ○ Certification status of any potential wetting agent chemical ○ Beginning July 1, 2021, the owner or operator shall only add a certified wetting agent chemical fume suppressant to a electroplating or chromic acid anodizing tank that based on the information in the notice as specified in paragraph (1)(4) and <ul style="list-style-type: none"> ○ The owner or operator shall install and implement an air pollution control technique to meet the emission limits specified in Table 1 – Hexavalent Chromium Emission Limits for Hard Decorative Chromium Electroplating and 	None Specified	None Specified

	<p>Chromic Acid Anodizing Tanks no later than July 1, 2021, or phase-out the use of hexavalent chromium no later than July 1, 2022, or implement an alternative to a wetting agent chemical fume suppressant</p> <ul style="list-style-type: none"> ○ An owner or operator that elects to phase out hexavalent chromium shall submit no later than January 1, 2021, a written and signed commitment that the facility will phase out by July 1, 2022, the use of hexavalent chromium in the electroplating or chromic acid anodizing tank that uses a wetting agent chemical fume suppressant and cease operating and surrender SCAQMD Permits to Operate for the chromium electroplating or chromic acid anodizing tank(s) no later than July 1, 2022 ○ The alternative to a chemical fume suppressant shall meet an emission limit that is equally effective as the emission limit required for a chemical fume 		
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	<p>suppressant, be approved by the Executive Officer, and be used in accordance with the approval</p> <ul style="list-style-type: none"> ○ Owner or operator that fails to phase out the use of hexavalent chromium by July 1, 2022 will be required to cease operation of the electroplating or chromic acid anodizing until it can meet the emission limits 		
<p>Parameter Monitoring: Pressure Air Flow</p>	<ul style="list-style-type: none"> ● The owner or operator shall monitor the operation of the add-on air pollution control device by: <ul style="list-style-type: none"> ○ Installing and maintaining a device to measure the applicable pressures and air flows specified in Table 4 ○ Installing each device so that it is accessible and in clear sight of the operation or maintenance personnel; ○ Maintaining all parameters identified in Table 4 within the range specified in the facility’s SCAQMD Permit to Operate; ○ Labeling each mechanical gauge with the 	<p>None Specified</p>	<p>None Specified</p>

	<p>corresponding acceptable operating ranges established during the most recent source test and within the range specified in the SCAQMD Permit to Operate; and</p> <ul style="list-style-type: none"> ○ Maintaining the mechanical gauges in accordance to the requirements in Appendix 4 ● The owner or operator shall measure the velocity of all collection slots and if applicable, the pressure of the push manifold, or alternate location based on the source test every 180 days 		
<p>Parameter Monitoring: Pressure and Air Flow</p>	<ul style="list-style-type: none"> ● Monitor the operation of the add-on air pollution control device by installing and maintaining mechanical gauges to measure the applicable pressures and air flows at the: <ul style="list-style-type: none"> ○ Push Manifold – Static Pressure ○ Collection Manifold/Any Location within the System – Static Pressure/Volumetric Flow Rate ○ Across Each Stage of the Control Device – 	<ul style="list-style-type: none"> ● Continuous pressure drop and inlet velocity monitoring ● Record once a week 	<ul style="list-style-type: none"> ● Daily pressure drop and inlet velocity monitoring and recording

	Differential Pressure		
<p>Add-On Air Pollution Control Device Parameter Monitoring</p>	<ul style="list-style-type: none"> • Monitoring required of collections slots and push air manifold • Acceptable measurements and actions: <ul style="list-style-type: none"> ○ Collection Slot, > 95% of the most recent passing source test or emission screening; or $\geq 2,000$ fpm ○ Push Air Manifold, 95-105% compared to the most recent passing source test or emission screening ○ Action required, none • Repairable measurement and actions: <ul style="list-style-type: none"> ○ Collection Slot, 90-95% of the most recent passing source test or emission screening test, or $< 2,000$ fpm and $> 1,800$ fpm ○ Push Air Manifold, 90-95% or 105-110% of the most recent passing source test or emission screening test ○ Action required, repair • Failing Measurement and actions: 	<p>None Specified</p>	<p>None Specified</p>

	<ul style="list-style-type: none"> ○ Collection Slot, < 90% of the most recent passing source test or emission screening test, or <1,800 fpm ○ Push Air Manifold, > 110% or < 90% of the most recent passing source test or emission screening test ○ Action required, immediately shut down tanks controlled by the add-on air pollution control device that had a failing measurement ● An owner or operator that is required to shut down a tank controlled by an add-on air pollution control device due to a failing measurement shall demonstrate that the collection slot velocity and push air manifold are within acceptable measurement before operating the tank 		
<p>Parameter Monitoring: Velocity of Collection Slots</p>	<ul style="list-style-type: none"> ● Every 180 days demonstrate that emissions are captured by the add-on air pollution control device that meets the requirements in Table 5 using: <ul style="list-style-type: none"> ○ A hot-wire anemometer; 	<p>None Specified</p>	<p>None Specified</p>

	<ul style="list-style-type: none"> ○ A vane anemometer; or ○ A device or method approved by the Executive Officer 		
Parameter Monitoring: HEPA Filters	<ul style="list-style-type: none"> ● Beginning 60 Days after completion of the initial source test, air pollution control devices equipped with HEPA filters shall be: <ul style="list-style-type: none"> ○ Equipped with ports ○ Calibrated once every calendar year ○ Maintained in accordance with manufacturer specification 	None Specified	None Specified
Parameter Monitoring: Surface Tension	<ul style="list-style-type: none"> ● If using a certified chemical fume suppressant, the surface tension shall be measured daily for 20 operating days, and every third operating day thereafter, but no less than once weekly. 	<ul style="list-style-type: none"> ● Monitor and record surface tension of electroplating baths weekly. 	<ul style="list-style-type: none"> ● Monitor and record surface tension of electroplating baths once every 40 hours of operation.
Inspection and Maintenance and Operation and Maintenance Plan	<ul style="list-style-type: none"> ● Tier II Hexavalent Chromium Tanks that are not controlled by an add-on air pollution control device shall comply with the applicable inspection and maintenance requirements in Table 4-3 of Appendix 4 ● Tier I, Tier II, and Tier III Hexavalent Chromium Tanks shall comply with the inspection and maintenance 	None Specified	None Specified

	<p>requirements in Table 4-2 of Appendix 4</p> <ul style="list-style-type: none"> • Facility’s Operation and Maintenance Plan shall be revised to reflect the incorporation of new inspection and maintenance requirements for a device or monitoring equipment • Prior to replacing an ampere-hour meter the owner or operator shall document with a photograph the actual ampere-hour reading of: <ul style="list-style-type: none"> ○ The ampere-hour meter being replaced; ○ The new ampere-hour meter after installation 		
<p>Reporting of Notification of Incidents</p>	<ul style="list-style-type: none"> • Notify the Executive Officer within four hour of the incident or within four hours of any failed smoke test, any failed source test, any exceedance of a permitted ampere-hour limit, or any malfunction of a non-resettable ampere-hour meter. The notification shall include. <ul style="list-style-type: none"> ○ Date and time of the incident ○ Specific location and equipment involved ○ Responsible party to contact 	<p>None Specified</p>	<p>None Specified</p>

	<p>for further information</p> <ul style="list-style-type: none"> ○ Causes of the incident ○ Estimated time of repair 		
Chromium Electroplating or Chromic Acid Anodizing Kit Requirements	Removed	<ul style="list-style-type: none"> • No person shall sell, supply, offer for sale, or manufacture for sale in California, chromium electroplating or chromic acid anodizing kits unless to an owner or operator of a permitted facility at which chromium electroplating and chromic acid anodizing is performed. 	None Specified
Conditional Requirements for Permanent Total Enclosures: Triggers	<ul style="list-style-type: none"> • More than one non-passing source test within a 48-month period • More than one failure to cease operating a tank controlled by an add-on air pollution control device within a 48-month period due to a failing measurement of the collection system or a failed smoke test, if the facility is greater than 1,000 feet of a sensitive receptor • One failure to cease operating a tank due to a failing measurement of the collection system or a failed smoke test, if the facility is less than or 	None Specified	None Specified

	equal to 1,000 feet of a sensitive receptor		
Conditional Requirements for Permanent Total Enclosure: Procedure to Contest	<ul style="list-style-type: none"> • Within 30 days submit a written report providing evidence that the installation of a PTE is not warranted based on: <ul style="list-style-type: none"> ○ Incidences did not occur ○ Owner or operator resolved incidences in a timely manner ○ Implemented specific measures to minimize hexavalent chromium emissions 	None Specified	None Specified
Conditional Requirements for Permanent Total Enclosure: Construction	<ul style="list-style-type: none"> • Install no later than 12 months after the Permit to Construct • Permit to Construct application due 180 days after notification by the Executive Officer if near sensitive receptor • Permit to Construct application due 270 days after notification by the Executive Officer for other facilities 	None Specified	None Specified
Hexavalent Chromium Phase-Out	<ul style="list-style-type: none"> • Tier II or Tier III Hexavalent Chromium Tank shall not be required to vent to an add-on air pollution control if the owner or operator submits a Hexavalent Chromium Phase-Out Plan that contains: 	None Specified	None Specified

	<ul style="list-style-type: none"> ○ A written commitment to eliminate or reduce hexavalent chromium concentrations to below the Tier II or Tier III concentrations; ○ A description of the method by which hexavalent chromium concentrations will be reduced or eliminated; ○ A list of milestones that are necessary to occur in order for the facility to eliminate or reduce hexavalent chromium; ○ Completion date for each milestone; ○ List of all control measures that will be implemented ● The Executive Officer shall notify if the plan is approved or disapproved ● Upon approval of the Hexavalent Chromium Phase-Out Plan, the owner or operator shall implement the approved plan and submit a progress report to the Executive 		
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	<p>Officer by the 1st of each quarter</p>		
<p>Time Extensions</p>	<ul style="list-style-type: none"> • An owner or operator of a facility may submit a request to the Executive Officer for a one-time extension for up to 12 months to: <ul style="list-style-type: none"> ○ Complete installation of an add-on air pollution control device, implement an approved alternative compliance method, or implement an approved Hexavalent Chromium Phase-Out Plan to meet the requirements; or ○ Meet the hexavalent chromium emission limit, phase-out the use of hexavalent chromium, or implement an alternative to a wetting agent chemical fume suppressant; • An owner or operator of a facility that elects to submit a request for a time extension shall submit the request no later than 90 days before the compliance deadline specified in subparagraph 	<p>None Specified</p>	<p>None Specified</p>

	<p>(h)(4)(C) or paragraph (l)(5) and provide:</p> <ul style="list-style-type: none"> ○ The facility name, SCAQMD facility identification number, and the name and phone number of a contact person; ○ A description of the chromium electroplating or chromic acid anodizing tank and the SCAQMD Permit to Operate and tank number; ○ A description of the emission reduction approach that is being implemented; ○ The specific provision under subparagraph (h)(4)(C) or paragraph (l)(5) for which a compliance extension is being requested; ○ The reason(s) a time extension is needed; ○ Progress in meeting the provisions in subparagraph (h)(4)(C) or paragraph (l)(5) including but not limited to date permit 		
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	<p>application was submitted to the SCAQMD, date Permit to Construct was approved, purchase order of equipment, date of service of contractors or consultants to install equipment; and</p> <ul style="list-style-type: none"> ○ Length of time requested, up to 12 months. ● The Executive Officer will review the request for the time extension and will approve the time extension if the owner or operator: <ul style="list-style-type: none"> ○ Demonstrates that there are specific circumstances beyond the control of the owner or operator that necessitate additional time to meet the compliance dates specified under subparagraph (h)(4)(C) and paragraph (1)(5); and ○ The demonstration is substantiated with information that includes, but is not limited to detailed 		
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	schedules, engineering designs, construction plans, permit applications, purchase orders, economic burden, and technical infeasibility.		
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APPENDIX A: RESPONSE TO COMMENTS

TABLE OF CONTENTS

1. Metal Finishing Association of Southern California (MFASC) Comment Letter (9/18/17)
2. Metal Finishing Association of Southern California (MFASC) Comment Letter (10/12/17)
3. Environmental Multi-Agency Comment Letter (10/25/17)
4. Industrial Environmental Coalition Orange County Comment Letter (11/8/17)
5. Aviation Repair Comment Letter (11/17/17)
6. Metal Finishing Association of Southern California (MFASC) Comment Letter (11/XX/17)
7. Verne's Chrome Plating, Inc (12/1/17)
8. Hixson Metal Finishing Comment Letter (12/1/17)
9. County of Los Angeles Department of Public Health (Cyrus Rangan) Comment Letter (12/8/17)
10. Valley-Todeco, Inc. Comment Letter (12/11/17)
11. RadTech International Comment Letter (12/15/17)
12. Brite Plating and General Plating Comment Letter (12/15/17)
13. Robina Suwol Comment Email (12/7/17)
14. Metal Finishing Association of Southern California (MFASC) Comment Letter (2/2/18)
15. Valley Todeco, Inc. Comment Letter (2/9/18)
16. Metal Surfaces Incorporated Comment Letter (2/22/18)
17. Lisa Lappin Comment Email (2/22/18)
18. Hixson Metal Finishing Comment Letter (2/27/18)
19. Boeing Comment Letter (3/1/18)
20. Metal Surfaces Incorporated Comment Letter (3/1/18)
21. Hixson Metal Finishing Comment Email (3/8/18)
Felipe Aguirre Comment Email (3/15/18)
22. Universal Metal Plating Comment Email (4/4/18)
23. Universal Metal Plating Comment Email (4/6/18)
24. Boeing Comment Email (4/19/18)
25. Pico Rivera Plating Comment Email (5/2/18)
26. Robina Suwol Comment Email (7/17/18)
27. Boeing Comment Email (7/7/18)
28. AAA Plating and Inspection, Inc. Comment Email (8/8/2018)
29. Sara Patricia Huezo Comment Email (8/9/18)
30. Wesley Turnbow Comment Email (8/21/18)
31. Metal Finishing Association of Southern California (MFASC) Comment Letter (8/23/18)
32. Del Amo Action Committee Comment Letter (9/4/18)
33. Environmental Multi-Agency Comment Letter (9/5/18)
34. Metal Finishing Association of Southern California (MFASC) Comment Email (10/8/18)
35. City of Los Angeles, Councilmember Jose Huizar Comment Letter (10/5/18)
36. AAA Plating and Inspection, Inc. Comment Email (10/10/18)
37. United States Department of Defense, Navy Comment Email (10/23/18)



September 18, 2017

Mr. Wayne Natri
 Executive Officer
 South Coast Air Quality Management District
 21865 East Copley Drive
 Diamond Bar, California 91765

Re: Comments - Proposed Amended Rule 1469 Working Group Meeting #5

Dear Mr. Natri:

The Metal Finishing Associations of California ("MFA") represents over 130 companies throughout Northern and Southern California, which comprise a diverse industrial base of metal finishing and related businesses that employ thousands of workers. Its members provide necessary products and services to manufacturers in various other industries, including aerospace, automotive, electronics, computers, smart phones, medical devices, energy, and other consumer and industrial products. A large segment of our membership also provides mission critical parts and components for military aircraft, satellites, telecommunications, and other defense applications. In addition, well over 90 percent of the MFA membership are family-owned, small businesses.

Joining MFA in these comments are the National Association of Surface Finishing and the California Small Business Alliance.

Located in Washington DC, NASF represents the interests of businesses, technologists and professionals in the surface coatings industry. Its highly regarded programs and activities are informed by NASF's mission to advance an environmentally and economically sustainable future for the finishing industry; and promote the vital role of surface technology in the global manufacturing value chain.

The California Small Business Alliance is a non-partisan coalition of California trade associations committed to provide small businesses with a single constructive voice before air quality management districts and other environmental regulatory agencies. While Alliance members represent small businesses, the combined impact of the membership on society and the economy is enormous. For example, in the Los Angeles metropolitan region alone, membership in the Alliance has grown to represent 14,000 companies, 700,000 employees and \$42 billion in shipments.

Representatives of the MFA, including legal counsel and technical experts, have been actively engaged with AQMD staff since the beginning of the recent rulemaking process earlier this year. MFA members and its representatives have also attended all five public working group meetings, including the most recent meeting held on August 31, 2017 (referred to as "Working Group Meeting #5"), plus participated in numerous other meetings with the AQMD's legal counsel, economic experts and rule development staff. This comment letter addresses the information presented by the staff at Working Group Meeting #5, noted as follows:

1.0 AQMD TESTING DATA

At the recent working group meeting, the AQMD presented a summary of test data collected from its various enforcement activities, including liquid, air and swipe samples of process areas and metal finishing tanks. In general, the MFA remains concerned that major rulemaking and policy decisions are being based on relatively few and inconsistent data points, especially when it concerns a potential requirement of add-on control devices and other costly measures for currently unregulated tanks. While the MFA reserves the right to modify or supplement these comments based on subsequent AQMD presentations, at this time, the following summarizes our primary concerns and comments based on data presented thus far:

1-1

(1) Sodium Dichromate and Dilute Chromate Tanks – On page 13 of the AQMD presentation, test results were shown of three (3) air samples of sodium dichromate seal tanks taken from three (3) different facilities (Facility C, D and E). The tank sizes ranged from 12 to 32 square feet, and operating temperatures ranged up to 212° F. Of the three air samples presented, there was a wide range of results from 97,200 to 682,000 ng/m³, which were sampled approximately 6 inches above the liquid surface of fully heated tanks without air sparging. Based on our review, there are inconsistencies with the sampling data as the measured air concentrations do not necessarily correlate to the hexavalent chromium concentrations within the tank. In addition, only 2 of the 3 measured facilities had valid analysis of the tank contents (Facility D and E). Of these 2 examples, the air sample concentrations of Facility D were over two times higher than Facility E, even though the hexavalent chromium concentration in the tank solution were approximately 60 percent of Facility E. While general qualitative judgements may be speculated based on this limited data, it is difficult to draw any specific conclusions or correlations given only two data points, and inconsistencies amongst these data points.

1-2

Moreover, it has not been demonstrated that potential fugitives from such tanks are being fully exhausted from building enclosures, nor that add-on controls are necessarily required. In response to a question during the workshop, an AQMD source test manager indicated that the same level of hexavalent chromium measured near the tank liquid surface were not being observed at the rooftop vents at these tested facilities. Rather, rooftop concentrations were substantially lower by orders of magnitude. In our view, if the tanks are properly maintained in buildings with open rooftop vents located at a sufficient distance away from such tanks, the likelihood of fugitives discharged from affected facilities would be sufficiently limited. As a consequence, the MFA would generally support housekeeping and best management practices as being sufficient measures to control sodium dichromate seal tanks.

(2) Nickel Acetate Seal, Hot Water and Teflon Seal – On page 14, test results were shown of four (4) liquid samples of nickel acetate, one (1) liquid sample of DI water seal and one (1) liquid sample of teflon seal tank. The tank sizes ranged from 4.5 to 30 square feet. Based on the presented test data, hexavalent chromium concentrations in these tank solutions were less than 1 ppm or non-detect in all cases, except for teflon seal tank which was measured at 5 ppm. In our view, these types of tanks do not require any further regulatory action nor other control measures.

1-3

(3) Chromate Conversion and Dye Tanks – On page 15, test results were shown for one (1) air sample of a chromate film tank (Facility D), which indicated a near surface concentration of 8,340 ng/m³. In addition, two (2) liquid samples from two (2) chem film tanks (Facility C and G), which measured at 4 and 2,880 ppm, respectively. There was also one (1) liquid sample from an alodine clear tank (Facility F), which measured 300 ppm. Lastly, there was six (6) liquid samples from different color dye tanks (Facility C and F), in which hexavalent chromium concentrations were less than 1 ppm or non-detect in all cases, with exception of two tanks that measured 2 and 8 ppm, respectively. In our view, all of these tank types do not require any further regulatory action nor other control measures.

1-4

(4) Rinse, Cleaner and De-smut Tanks – On page 16, test results were shown for five (5) liquid samples of standard rinse tanks (Facility B, C and F), in which hex chrome concentrations were less than 4 ppm in all cases, with exception of one anomalous tank. In addition, there were three (3) liquid samples from DI rinse tanks (Facility A, F and G), in which hex chrome concentrations measured less than 0.25 percent by weight, respectively. Lastly, there were three (3) liquid samples from two cleaner tanks and one de-smut tank, in which hex chrome concentrations were less than 0.001 percent by weight. In our view, these types of tanks do not require any further regulatory action nor other control measures.

1-5

(5) Passivate, Etch, Neutralizer and Stripping – On page 17, test results were shown for one (1) liquid samples taken from tanks that performed stripping, passivation, passivate rinse, etch and acid neutralizer, respectively. Hexavalent chromium concentrations from these tank solutions were less than 0.021 percent by weight in all tanks, with the exception of the passivation and stripping tank which measured 10,000 and 47,400 ppm, respectively. In the latter cases, neither the tank surface air concentrations nor tank operating temperatures were recorded or measured. However, the MFA would generally support housekeeping and best management practices as being sufficient measures to control these tanks.

1-6

2.0 PROPOSED RULE STRUCTURE

At this latest meeting, the AQMD presented a proposed rule structure and proposed rule language for certain sections, which included rule applicability, definitions, general requirements, housekeeping and best management practices (BMPs). In general, the MFA is supportive of the proposed rule structure, as presented at the last working group meeting. While the MFA reserves the right to modify or supplement these comments based on subsequent AQMD presentations, the following summarizes our primary comments at this time:

(1) Ambient Air Monitoring – The AQMD indicated that ambient air monitoring would be considered in a separate rulemaking which could impact multiple industries, and therefore, would not be proposing such requirements in the amended Rule 1469. The MFA remains concerned about the use of ambient air monitoring (and fence line limits) for rulemaking and enforcement purposes.

MFA reiterates its request in Workshop #5 that, prior to the inclusion of air monitoring provisions in any newly amended rules, the District consider the recently-enacted AB 617 [Garcia] Chapter 136, Statutes of 2017 and work with the California Air Resources Board [CARB] to implement the requirements of that law.

1-7

The new law requires CARB, by October 1, 2018, to prepare a monitoring plan regarding technologies for monitoring criteria air pollutants and toxic air contaminants and the need for and benefits of additional community air monitoring systems. It also requires CARB to select locations around the state for the preparation of community emissions reduction programs, and requires an air district containing a selected location, within one year of the state board's selection, to adopt a

community emissions reduction program. By increasing the duties of air districts, this bill would impose a state-mandated local program.

1-7
(cont'd)

It is important that implementation of these new laws with statewide application occurs without a duplication of efforts, and with a mind to the costs versus benefits.

(2) Tier I and Tier II Hexavalent Chromium Tanks – The MFA supports the concept of a Tier I and II hex chrome tanks for regulatory purposes. However, the MFA is still reviewing potential hexavalent chromium concentration, temperature and other limits which could define these categories. Irrespective, based on our review of the test data presented to date (and as noted above), the MFA believes most of the tank categories will not require further controls or other regulatory action. In cases of other potential applicable tanks, the MFA does not anticipate that add-on controls will be necessary, but rather housekeeping and BMPs would be sufficient control measures under the amended rule.

1-8

(3) Housekeeping – The MFA supports housekeeping measures for applicable tanks under the amended rule with few exceptions. However, the MFA does not support daily cleaning of applicable tanks, as currently proposed in PAR Rule 1469 (f)(4), as this places an undue burden on metal finishers. The current cleaning requirement is once per week, which we believe is sufficient housekeeping. In addition, the AQMD is proposing a new cleaning requirement under PAR Rule 1469 (f)(7) which requires the cleaning, using an approved cleaning method, of "suspected chromic acid residue" within 24 hours, such as visible stains. The MFA opposes this additional cleaning method as this would place an undue burden on metal finishing facilities, and also open to wide interpretation for enforcement officers in the issuance of Notices of Violations.

1-9

(4) Best Management Practices – The MFA supports BMPs for applicable tanks under the amended rule with few exceptions. Regarding the proposed limitations on using water sprays as currently proposed in PAR Rule 1469 (g)(2), the MFA does not believe such limitations are necessary. Given the water spray typically occurs over rinse tanks, and that neither the parts nor rinse tank will have significant amounts of chrome laden liquid.

1-10

(5) Permanent Total Enclosures (PTEs) – The AQMD is considering a trigger for PTEs for both Tier I and II chrome tanks based on (a) failure of a source test twice within 36 months; or (b) failure to correct deficient slot velocity measurements within a specified time period. In general, the MFA does not believe that PTEs are necessary to control potential Tier I or II tanks, as we anticipate housekeeping and BMPs would be sufficient control measures. In addition, equipment source testing can be very costly, especially for facilities with many regulated tanks or permit units. As a consequence, the MFA is concerned about repetitive source testing requirements, which are unnecessary for compliance purposes. In addition, as we have noted before, the use of PTEs can also be very costly and difficult to implement, especially for facilities that were not designed nor constructed to accommodate them for existing tank operations.

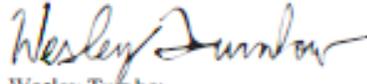
1-11

The MFA also strongly encourages the AQMD to consider the ongoing confirmation that the provisions in the proposed rule update that are of concern to MFA are not necessary. This is documented by the results AQMD has obtained through its extensive hexavalent chromium monitoring in Compton, obtained from 36 separate sampling dates, beginning on June 30 of this year, and now involving seven sites.

1-12

The MFA and its representatives look forward to continued discussions on the amended rule with the AQMD. Thank you and we look forward to your response.

Sincerely,



Wesley Turnbow
President

cc: Barry Groveman, Musick Peeler
Ryan Hiete, Musick Peeler
Susan Nakamura, SCAQMD (via email only)
Kurt Wiese, SCAQMD (via email only)

Responses to Metal Finishing Association of Southern California (MFASC) Comment Letter, submitted 9/18/17

- 1-1 Response: Since this comment was submitted, additional source testing of tanks that operate between 140 and 170 degrees have been conducted. Using these additional data points combined with previous tank source tests, the SCAQMD staff has developed a table based on concentration thresholds that are based on source test data, with input from industry representatives that further refines the tiers of tanks by adding three tiers of tanks, in order to incorporate provisions for an interim “Tier II Tank” where emission reductions strategies are needed, but not add-on pollution controls.
- 1-2 Response: Please see response to comment 1-1. Regarding the comment on fugitive emissions escaping from the building enclosure, ambient monitoring and sampling at metal finishing facilities in Newport Beach, Paramount and Long Beach have shown elevated levels of hexavalent chromium that were attributed to cross-drafts that allowed hexavalent chromium emissions to exit the building enclosure and hexavalent chromium emitting tanks that are currently not regulated under Rule 1469. Hexavalent chromium emissions were substantially reduced after operators closed building openings including rooftop vents that allowed emissions to be emitted out of the building, demonstrating the need to establish operating parameters for building enclosures. Regarding the comment on the difference in sampled concentrations, SCAQMD staff does not have the tank concentrations, nor specific operating temperatures which would affect the sampled concentrations. While there is variability between the sampled results, all 3 sampled concentrations were more than 10 times the measured concentration of a chromic acid anodizing tank controlled by chemical fume suppressant.
- 1-3 Response: Based on the tanks that staff has observed, the tanks referenced in the comment are all considered to be either Tier I Tanks or associated process tanks and do not have control requirements under PAR 1469, except for housekeeping and the requirement to operate Tier I Tanks inside a building. It is the responsibility of the owner or operator to assess the operating parameters (temperature and hexavalent chromium concentration) of a tank and then determine if the tank is a Tier I, II, or III Hexavalent Chromium Tank.
- 1-4 Response: Based on the tanks that staff has observed, the tanks referenced in the comment are all considered to be Tier I tanks and do not have control requirements under PAR 1469, except for housekeeping and the requirement to operate Tier I tanks inside a building. It is the responsibility of the owner or operator to assess the operating parameters (temperature and hexavalent chromium concentration) of a tank and determine if the tank is a Tier I, II, or III Hexavalent Chromium Tank.

- 1-5 Response: Based on the tanks that staff has observed, the tanks referenced in the comment are all considered to be associated process tanks, with the possible exception of rinse tanks that can build up concentrations of hexavalent chromium above Tier I allowable concentrations. Tier I Tanks only have housekeeping requirements and are required to be operated within a building. It is the responsibility of the owner or operator to assess the operating parameters (temperature and hexavalent chromium concentration) of a tank and determine if the tank is a Tier I, II, or III Hexavalent Chromium Tank.
- 1-6 Response: Based on the tanks that staff has observed, the tanks referenced in the comment are all considered to be Tier I Tanks, with the possible exception of electrolytic stripping tanks that can be Tier III Tanks, unless the tank meets the temperature and hexavalent chromium concentrations of a Tier I or II Tank. Tier III Tanks have control requirements under the rule proposal. It is the responsibility of the owner or operator to assess the operating parameters (temperature and hexavalent chromium concentration) of a tank and determine if the tank is a Tier I, II, or III Hexavalent Chromium Tank.
- 1-7 Response: SCAQMD staff has initiated rule development for Proposed Rule (PR) 1480 – Air Toxic Metals Monitoring which will provide a comprehensive approach to monitoring air toxics metals at various communities near a variety of industries. Therefore, it is more appropriate to consider monitoring within the context of PR 1480 instead of within PAR 1469.
- Staff understands the requirements of AB 617 and will work with all stakeholders during development of PR 1480.
- 1-8 Response: Tier I Tanks are subject to housekeeping requirements under the rule proposal. Tier II Tanks and Tier III Tanks (formerly Tier II Tanks) must meet emission limits that require installation of air pollution controls. In general, best management practices apply to Tier II and II Tanks, and there are labeling requirements for Tier I, II, and III Tanks.
- 1-9 Response: The housekeeping provision under paragraph (f)(4) has been modified to read: *Clean, using an approved cleaning method, surfaces within the enclosed storage area, open floor area, walkways around the electroplating or anodizing tanks, or any surface potentially contaminated with hexavalent chromium or surfaces that potentially accumulate dust at least weekly.* This language exists in the current version of Rule 1469. Regarding the comment about visible stains, the language pertaining to “suspected chromic acid residue” in an earlier proposal has been removed.

1-10 Response: The requirement for water spraying/rinsing has been modified to require that *the owner or operator shall not spray rinse parts or equipment that were previously in a Tier II or Tier III hexavalent chromium tank, unless the parts or equipment are fully lowered inside a tank where the liquid is captured inside the tank.* Please refer to paragraph (g)(2) for more information regarding water spray rinsing requirements.

1-11 Response: The triggers to require a permanent total enclosure (PTE) have been modified such that the timing is based on 48 months rather than 36 months. The triggers that will require a PTE are included in subdivision (t):

- More than one non-passing source test within a consecutive 48 month period; or
- The owner or operator of a facility failed to meet the requirements to shut down a tank controlled by an add-on air pollution control device more than once within a consecutive 48-month period for a facility that is located more than 1,000 feet from a sensitive receptor; or
- The owner or operator of a facility failed to meet the requirements to shut down a tank controlled by an add-on air pollution control device once for a facility that is located less than or equal to 1,000 feet from a sensitive receptor.

PAR 1469 allows a facility to contest the PTE requirement. The owner or operator is allowed to contest the requirement to install a permanent total enclosure within 30 days of receiving notification from the Executive Officer that the requirement had been triggered. A written report contesting the requirement must include evidence that installation of the permanent total enclosure is not warranted based on the several criteria:

- The specified incidents of non-compliance did not occur; or
- The owner or operator of a facility resolved the specified incidents of non-compliance in a timely manner; and
- The owner or operator of a facility implemented specific measures to minimize the hexavalent chromium emissions.

1-12 Response: PAR 1469 is necessary. Ambient monitoring in Compton near Rule 1469 facilities was initiated after ambient monitoring efforts near Rule 1469 facilities in Newport Beach, Paramount, and Long Beach were conducted. Facilities in Compton had the benefit of learning about tanks that were potential high hexavalent chromium emitters and the importance of building enclosures. PAR 1469 is needed to require pollution controls on tanks with potentially high hexavalent chromium emissions, such as heated sodium dichromate seal tanks. PAR 1469 also establishes needed requirements to minimize cross-drafts from buildings with Rule 1469 hexavalent chromium tanks and housekeeping and best management practices. These provisions have been instrumental in reducing hexavalent chromium emissions near the Rule 1469 facilities in Newport Beach, Paramount, and Long Beach.

Throughout the rulemaking process, the SCAQMD staff has worked with the Metal Finishing Association of Southern California on a variety of provisions to allow more flexibility, ensure provisions are enforceable, provide additional clarity, and remove unnecessary provisions.



October 12, 2017

Mr. Wayne Nastri, Executive Officer
 South Coast Air Quality Management District
 21865 East Copley Drive
 Diamond Bar, California 91765

Re: Comments – Proposed Amended Rule 1469 Working Group Meeting #6

Dear Mr. Nastri:

The Metal Finishers Associations of California (“MFA”) represents over 130 companies throughout Northern and Southern California, which comprise a diverse industrial base of metal finishing and related businesses that employ thousands of workers. Its members provide necessary products and services to manufacturers in various other industries, including, aerospace, automotive, electronics, computers, smart phones, medical devices, energy, and other consumer and industrial products. A large segment of our membership also provides mission critical parts and components for military aircraft, satellites, telecommunications, and other defense applications. In addition, well over 90 percent of the MFA membership are family-owned, small businesses.

Joining the MFA in these comments are the National Association of Surface Finishing (“NASF”) and the California Small Business Alliance.

Located in Washington DC, NASF represents the interests of businesses, technologists and professionals in the surface coatings industry. Its highly regarded programs and activities are informed by NASF’s mission to advance an environmentally and economically sustainable future for the finishing industry; and promote the vital role of surface technology in the global manufacturing value chain.

The California Small Business Alliance is a non-partisan coalition of California trade associations committed to provide small businesses with a single constructive voice before air quality management districts and other environmental regulatory agencies. While Alliance members represent small businesses, the combined impact of the membership on society and the economy is enormous. For example, in the Los Angeles metropolitan region alone, membership in the Alliance has grown to represent 14,000 companies, 700,000 employees and \$42 billion in shipments.

Representatives of the MFA, including legal counsel and technical experts, have been actively engaged with AQMD staff since the beginning of the recent rulemaking process earlier this year. MFA members and its representatives have also attended all six public working group meetings, including the most recent meeting held on September 20, 2017 (referred to as “Working Group Meeting #6”), plus participated in numerous other meetings with the AQMD’s legal counsel, economic experts and

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MFA Comment Letter – AQMD Proposed Amended Rule 1469
October 12, 2017

rule development staff. This comment letter addresses the information presented by the staff at Working Group Meeting #6, noted as follows:

1.0 GENERAL COMMENTS

At Working Group Meeting #6, the AQMD presented proposed draft rule language for PAR 1469 and a summary presentation of the staff proposal. While the MFA reserves the right to modify or supplement these comments based on subsequent AQMD presentations, at this time the following summarizes our primary concerns and comments based on data presented thus far:

(1) New Source Review – As explained during the prior workshop, the MFA is concerned with the applicability of New Source Review (“NSR”) per AQMD Rule 1303 (criteria pollutants) and Rule 1401 (air toxics) for facilities seeking to implement the proposed amended rule. NSR generally applies to “new permit units, relocations, or modifications to existing permit units.” If triggered, permit applications and agency fees could range up to \$3,000 per permit unit/application. In addition, in the case of Rule 1401 the permit applicant must demonstrate compliance with an increased Maximum Individual Cancer Risk (“MICR”) of 1 in 1 million, or 10 in 1 million with use of T-BACT, which could mean the preparation of expensive Health Risk Assessment (“HRA”) reports that range up to \$25,000 each. Further, permit applications could take months or years awaiting AQMD review, approval and final permit issuance.

There are many examples of facility actions that may be construed as a “modification” or otherwise trigger NSR. A few examples of Best Management Practices (“BMPs”), housekeeping and other control measures under PAR 1469 which may trigger NSR are (a) relocating tanks farther away from roof vents, (b) installing covers to existing tanks, (c) adding polyballs or other mechanical fume suppression, (d) replacing air sparging with mechanical agitation, (e) installing or upgrading pressure gauges, flowmeters or other required monitoring devices, or (f) installing a total enclosure around existing tanks. Moreover, NSR could also apply if the AQMD denies potential NSR exemptions for submitted permit applications, including Rule 1401(g)(1)(B) and (C) for “Modifications with No Increase in Risk” and “Equipment Previously Exempted Under Rule 219”, respectively. NSR applicability could incur significant permitting costs as noted above, plus create considerable delays in implementing PAR 1469 emission reduction measures which are intended to protect the public health. Further, such delays in AQMD approval and permit issuance only increase the regulated facility’s exposure of receiving Notices of Violation (“NOVs”) for failure to implement PAR 1469 measures.

To address these concerns, the MFA requests that additional language be placed into PAR 1469 which clearly states that the implementation of such BMPs, housekeeping and other control measures would not trigger NSR. And in cases where permit action is necessary, the MFA requests rule language that clarifies and confirms such actions would be exempted from NSR requirements. For example, PAR 1469 may include the following proposed language:

“New Source Review Applicability – The implementation of applicable rule requirements for existing facilities and equipment as of [date of adoption] shall not be deemed a new source, modification nor otherwise trigger permit action or New Source Review. Further, the Executive Officer or his representatives shall not deny any existing New Source Review exemption for permit applications submitted to comply with rule requirements, including but not limited to equipment previously exempted under Rule 219 and modifications with no increase in risk.”

(2) Chrome Tank Test Data – As noted previously, the MFA remains concerned that major rulemaking and policy decisions are being based on inconsistent data and little scientific support, especially when it concerns a potential requirement of add-on control devices and other costly measures for currently unregulated tanks. For proposed control requirements under PAR 1469, the cart

2-1

2-2

MFA Comment Letter – AQMD Proposed Amended Rule 1469
October 12, 2017

is clearly in front of the horse. If the AQMD wants to effectively control emissions for a technology-based rule, it should start by quantifying emissions from various tank conditions, then and only then, can reasonable determinations be made as to what may pose a “a problem” and how to correct it. For example, it is not clear that an add-on control device would be needed to reduce uncontrolled emissions from a facility. In addition, all of the provisions required in the proposed rule to control additional emissions from other potential sources of hexavalent chromium would be tremendously burdensome for industry, and have essentially no effect on emissions. It is not possible to justify the required rule changes since the AQMD has yet to adequately quantify emissions from applicable tanks.

2-2
(cont'd)

(3) Ambient Air Monitoring – The AQMD has indicated that ambient air monitoring would be considered in separate rulemaking which could impact multiple industries, and therefore, would not be proposing such requirements in the amended Rule 1469. The MFA continues to remain concerned about the use of ambient air monitoring (and fence line limits) for rulemaking and enforcement purposes and have raised legitimate issues of flawed assumptions, unreliable data, contributing sources, prohibitive costs and inconclusive results. Nevertheless, the AQMD continues to selectively utilize such unreliable ambient monitoring data to support its enforcement objectives and unfairly target metal finishers. Moreover, the AQMD continues to rely upon an unsubstantiated 1 ng/m³ hexavalent chrome standard that is not supported by the current science for enforcement purposes, including orders for facility shut down and business curtailment. Based on testimony of affected small businesses, it is clear the AQMD’s continued use of such unreliable air monitoring data is having significant adverse economic impacts, including loss of customers, decreased business volumes and employee layoffs. The MFA will reserve further comment until the AQMD initiates the separate rulemaking regarding ambient air monitoring.

2-3

2.0 FUGITIVES FROM METAL FINISHING OPERATIONS

The MFA does not believe there has been sufficient demonstration that potential fugitive emissions from unregulated chrome tanks are being significantly exhausted from building enclosures, nor that add-on control devices are necessarily required for such tanks. Under existing Rule 1469, the applicable emission limits for existing chromium electroplating and chromic acid anodizing tanks is 1,500 ng/amp-hr, which is typically measured after add-on control devices, such as High Efficiency Particulate Air (HEPA) systems. These add-on control devices are generally mounted on rooftops through a single exhaust stack with forced ventilation. The AQMD continues to be concerned about fugitive emissions from unregulated tanks containing hexavalent chromium, which are being discharged from metal finishing buildings. Rather than relying on assumptions, the AQMD needs to base its regulatory policy and rulemaking on validated scientific data that demonstrates significant fugitive emissions are actually being discharged from buildings through roof vents, doors, windows and other openings. Thus far, any substantial scientific data making such demonstration for fugitive emissions is lacking. Quite the contrary, based on statements from the AQMD source testing staff during the working group meetings, it appears that measured fugitive emissions through rooftop vents from unregulated tanks are far below any measurements at the tank surface by several orders of magnitude, even without any add-on control devices.

2-4

As evidence to support this conclusion, it is our understanding that the highest measurements of fugitive emissions from roof vents at metal finishing operations that has been collected by the AQMD is approximately 30 ng/m³. In addition, the U.S. Environmental Protection Agency (“EPA”) examined the unregulated tanks containing hexavalent chromium as part of both the chromium electroplating NESHAP and the plating and polishing area source NESHAP, and chose not to impose emission limits or controls. Furthermore, the U.S. Occupational Safety and Health Administration (“OSHA”) did not recommend engineering controls for these unregulated tanks when setting the

MFA Comment Letter – AQMD Proposed Amended Rule 1469
October 12, 2017

federal workplace exposure standard for hexavalent chromium. In short, these regulatory agencies believed that the emissions from these sources did not contribute significantly to air emissions or workplace exposure levels.

As another example of why fugitive emissions from the unregulated tanks are very low, facilities with dichromate seal tanks that have high concentrations of hexavalent chromium are compliant with the OSHA workplace exposure standard for hexavalent chromium with very low workplace exposure levels. If the workplace exposure levels of workers in the breathing zone only a few feet away from tanks are several orders of magnitude lower than the concentrations of hexavalent chromium in the tanks, then it is unlikely that fugitive emissions from these tanks leaving the building would be of much consequence unless, of course, the tank is constantly air sparged and/or running near the boiling point.

Based on the data gathered thus far, the fugitive emissions from the unregulated sources exiting the building would be considerably less than the emissions from the permitted sources. Accordingly, the elimination of all fugitive emissions from metal finishing operations would do little, if anything, to reduce ambient air concentrations of hexavalent chromium, particularly considering that metal finishing emissions of hexavalent chromium represent less than one percent of the total hexavalent chromium emissions according to the U.S. EPA National Emissions Inventory.

2-4
(cont'd)

3.0 PROPOSED RULE AMENDMENTS

At this latest meeting, the AQMD presented proposed rule language which included rule applicability, definitions, general requirements, housekeeping and best management practices (BMPs). While the MFA reserves the right to modify or supplement these comments based on subsequent AQMD presentations, the following summarizes our primary comments at this time:

(1) Rule Applicability – As explained by AQMD staff, PAR 1469 would apply to chromium electroplating, chromic acid anodizing tanks and associated chrome tanks. Based on our understanding those facilities which do not operate chromium electroplating or chromic acid anodizing tanks would not be subject to PAR 1469, although they may operate tanks with chromium for other purposes. In addition, those tanks which are not associated with chrome plating or chrome anodizing would also not be subject to PAR 1469. If our understanding is correct, this rule applicability for PAR 1469 is consistent with existing Rule 1469 regarding applicable tanks, so the MFA has no further comment.

2-5

(2) Tier I Hexavalent Chromium Tanks – *The MFA would not suggest utilizing a hexavalent chromium concentration for tank classification because not enough data has been provided to support a parts per million number.* Furthermore, it has not yet been proven that hexavalent chromium concentration is a good predictor for high hexavalent chromium emissions. HOWEVER, if concentration levels as measured in parts per million (“ppm”) are to be utilized than we offer the following: Tier I tanks should only capture those tanks which exhibit the highest potential for emissions, and therefore exclude tanks which otherwise should remain unregulated. In this regard, the MFA supports the following definition of Tier I tank under PAR 1469 – A Tier I tank means “a tank containing a hexavalent chromium concentration of 50,000 ppm or greater.” Based on the AQMD test data provided thus far, the MFA anticipates the following tanks would not qualify as Tier I tanks:

2-6

- Nickel Acetate Seal, Hot Water Seal, Teflon Seal
- Chromate Conversion, Dye Tanks
- Cleaner, De-smut Tanks
- Etch, Neutralization, Passivation
- Rinse Tanks

MFA Comment Letter – AQMD Proposed Amended Rule 1469
October 12, 2017

(3) Tier II Hexavalent Chromium Tanks – *The MFA would not suggest utilizing a hexavalent chromium concentration or a temperature level for tank classification because not enough data has been provided to support a parts per million number or a temperature level cutoff.* Furthermore, it has not yet been proven that hexavalent chromium concentration is a good predictor for high hexavalent chromium emissions. And more data should be sought and provided before setting a square footage level as well. HOWEVER, if the AQMD anticipates add-on control devices for Tier II tanks, then the regulatory definition should be limited to only those tanks which have the following characteristics: (a) a minimum concentration of 75,000 ppm of hexavalent chromium, (b) minimum operating temperature of 190° F, and (c) conducts air sparging. The MFA opposes the generic requirement of “continuous bubbling” observed at the surface of the tank as being a potential qualifier for Tier II tank applicability, as this is vague and subject to wide interpretation by AQMD enforcement officers.

2-7

(4) Freeboard Height – PAR 1469 would require a minimum freeboard height of 8” for applicable Tier I and II tanks, which are newly installed (or modified) after the rule adoption date. The freeboard height requirement would not apply to existing tanks prior to rule adoption. The MFA opposes a freeboard height requirement for existing, new or modified applicable tanks because it has not been demonstrated that a minimum freeboard height results in any meaningful emission reductions. In general, facility operators are already incentivized to maintain a tank freeboard to preserve product quality and minimize chemical losses. To manage a different freeboard height for different tanks would create compliance issues for facility operators while providing minimal environmental benefit. In addition, reconfiguring tanks to provide for additional freeboard may not be feasible for most facilities. At the very least it would be expensive for facilities that could replace or reconfigure tanks to accommodate their parts and the additional freeboard.

2-8

(5) Building Enclosures – Pursuant to PAR 1469 (e), the MFA is concerned about the vagueness in the existing proposed rule language for building enclosures, including cross draft requirements, prohibition of forced air ventilation, sensitive receptor requirements, closure of building openings and others. Based on our interpretation, a building with just a single Tier I tank could not operate with any force air ventilation, must close off any nearby roof vents, and shut all of its doors during operations. If that is not the AQMD intent then the MFA requests clarity in the draft rule, otherwise, there would be wide interpretation by AQMD enforcement officers and potential Notices of Violation. In addition, the MFA does not support monthly inspections of the building enclosures for “breaks, cracks, gaps or deterioration” nor a 72-hour repair requirement, as these requirements are similarly vague and would likely lead to NOV’s.

2-9

(6) Permanent Total Enclosures (“PTEs”) – PAR 1469 (e)(9) specifies a trigger for PTEs for Tier II tanks based on (a) failure of a source test within 48 months, or (b) more than one incident of failure of smoke and/or slot velocity measurements. If triggered, PAR 1469 requires permit applications for a PTE within 90 to 180 days, and construction of the PTE within 12 months. The MFA does not believe that PTEs are necessary to control potential Tier II tanks, as we anticipate the use of buildings, housekeeping and BMPs would be sufficient control measures. As we have noted before the use of PTEs can also be very costly and difficult to implement, especially for facilities that were not originally designed nor constructed to accommodate PTEs for existing tank operations.

2-10

(7) Source Testing – PAR 1469 (k)(1) will require compliance source testing every 36 months. As we have noted compliance source testing for hexavalent chromium is very costly, especially for facilities with many regulated tanks or permit units. In addition, these source tests generally require several days and disrupt production operations. Given that HEPA control systems for

2-11

MFA Comment Letter – AQMD Proposed Amended Rule 1469
October 12, 2017

- applicable tanks maintain adequate operational efficiency for many years, the MFA questions the need for source testing every 36 months. We are not aware of any other industry with such a rigorous frequency of compliance source testing for add-on control devices. 2-11 (cont'd)
- (8) Capture Efficiency Testing – PAR 1469 (k)(6) specifies routine slot velocity and smoke testing for applicable tanks with add-on control devices every month and 6-months, respectively. In particular, PAR 1469 specifies that a facility must “shut down” all chrome electroplating and anodizing lines if such capture tests show a slight deviation of 5% to 10% from the most recently approved AQMD approved source test. The MFA is very concerned with such stringent limitations and the shut down requirement, given the numerous factors that could impact these capture test results, such as equipment sensitivity, testing locations, personnel handling and others. 5% to 10% is a small margin for error which would be difficult to ensure compliance, could result in unnecessary equipment shut downs, and possibly lead to triggering the on-ramp for a PTE pursuant to PAR 1469 (e)(9)(A). 2-12
- (9) Notification of Incidents – PAR 1469 (p)(4)(A) requires a regulated facility to notify the AQMD within “one hour” of any failed smoke test, failed source test, exceedance of a permitted ampere-hour limit or malfunction of a non-resettable ampere-hour meter. Further, PAR 1469 (p)(4)(B) requires corrective action and a written report within seven (7) days of notification. The MFA believes these proposed notification requirements are redundant as existing AQMD Rule 430 already covers the reporting of such incidents that result in rule or permit violations. 2-13
- (10) Parametric Monitoring – PAR 1469 (m)(1)(D) adds a new requirement that the operator “shall ensure any velocity within 10 feet” of a Tier II tank with an add-on control device is “less than one-tenth of the collection slot velocity as specified in the most recent successful source test.” The MFA requests that this proposed requirement be removed as it is unclear what purpose it serves. Moreover, due to its vagueness the requirement would be subject to wide interpretation by AQMD enforcement and likely lead to NOV’s. 2-14
- (11) Surface Tension Testing – PAR 1469 (o)(4)(D) proposes a “daily” surface tension test for applicable tanks. The MFA opposes such daily testing since the current requirement of weekly surface tension testing is sufficient to ensure compliance. 2-15
- (12) Housekeeping – The MFA supports housekeeping measures for applicable tanks under the amended rule with few exceptions. However, the MFA opposes daily cleaning of applicable tanks and operational areas as currently proposed in PAR 1469 (f)(4) and (f)(6). This would place an undue burden on metal finishers. The current cleaning requirement is once per week and we believe this is sufficient housekeeping for applicable operations. As a general note, increasing the administrative burden by requiring tasks or record keeping to be performed more frequently is not conducive to efficient compliance or inspection, and the increased frequency typically has negligible effects on emissions. 2-16
- (13) Water Spraying – The MFA supports Best Management Practices for applicable tanks under the amended rule with few exceptions. Regarding the proposed limitations on using water sprays as currently proposed in PAR 1469 (g)(2), the MFA does not believe such limitations are necessary. Given that water spray typically occurs over rinse tanks and that neither the parts nor the rinse tank will have significant amounts of chrome laden liquid. This requirement would impose unnecessary compliance costs with little or no environmental benefit. 2-17

MFA Comment Letter – AQMD Proposed Amended Rule 1469
October 12, 2017

(14) Compressed Air Cleaning or Drying – Regarding the proposed limitations on using compressed air cleaning or drying as currently proposed in PAR 1469 (g)(7), the MFA does not believe such limitations are necessary. At this point in the process any residual rinse water on finished parts will have negligible amounts of hexavalent chrome, if any. This requirement would impose unnecessary compliance costs with little or no environmental benefit.

2-18

(15) Rinse Tanks – Regarding the proposed limits on rinse tanks as proposed in PAR 1469 (g)(8), the MFA *opposes* a maximum hex chrome concentration for rinse tanks. Generally speaking, rinse tanks, no matter how concentrated, are not emitters as they are not heated, air sparged or electrified. Rinse tank requirements would not yield any significant environmental benefit as these tanks have negligible amounts of hexavalent chrome content, if any. This will place an undue burden on metal finishers to conduct frequent analytical testing on a daily basis for hex chrome concentrations to ensure compliance. Most metal finishing facilities do not have such analytical equipment or technical capabilities.

2-19

(16) Add-on Control Devices for Tier II Tanks – PAR 1469 (h)(6) specifies add-on control devices for Tier II tanks and proposes a hex chrome emission limit which is to be determined. As noted above, the MFA questions the need for add-on control devices for Tier II tanks based on the limited and inconsistent emission data collected for chrome tanks and rooftop vents. If an emission limit will be adopted, the MFA *opposes* an emission limit for Tier II tanks which would be lower than the current hex chrome emission limits specified by Table 1, which are currently applicable to existing tanks. The current state of pollution control technology has not significantly changed since the prior amendments to Rule 1469 and, therefore, any lower emission limits would not be justified.

2-20

The MFA and its representatives look forward to continued discussions on the amended rule with the AQMD. Thank you and we look forward to your response.

Sincerely,



Wesley Turnbow
President

cc: Barry Groveman, Musick Peeler
Ryan Hiete, Musick Peeler
Susan Nakamura, SCAQMD (via email only)
Kurt Wiese, SCAQMD (via email only)

Responses to Metal Finishing Association of Southern California (MFASC) Comment Letter, submitted 10/12/17

2-1 Response: New Source Review (NSR) and T-BACT requirements are only triggered by an emissions increase. BMPs and housekeeping are generally not activities that require an SCAQMD permit and are not considered a modification and therefore not subject to NSR or requirements to install T-BACT. Many of the activities listed in the comment would be implemented to reduce emissions and would not result in an emissions increase; for example, addition of polyballs or mechanical fume suppressants, installation of pressure gauges, flowmeters and other monitoring equipment, installing a total enclosure around existing tanks, and installing heating, cooling or other rooftop ventilation equipment are all activities that are expected to decrease and not increase emissions. In addition, there is no longer a prohibition on air sparging as was the case when this comment was submitted. Covers for Tier II Tanks are allowed as a method of control, and are allowable for Tier III Tanks in the interim period before air pollution control systems are installed. Please contact SCAQMD Engineering and Permitting staff to determine whether other activities will require a permit application to be submitted and whether an increase in emissions is assumed for these activities.

2-2 Response: Please see Response to Comment 1-1.

2-3 Response: Please see Response to Comment 1-7. Staff has initiated the rule development process for Proposed Rule 1480 – Air Toxic Metals Monitoring, which includes ambient monitoring, background information and proposed provisions such as applicability, timing as to when a facility would be required to conduct ambient air monitoring, thresholds, pollutants monitored, and other actions that would be required based on the results of ambient air monitoring have been or will be discussed. Staff has explained the basis of the 1 ng/m³ hexavalent chromium threshold used in Orders for Abatements for certain facilities in Paramount and Long Beach in multiple PAR 1469 Working Group Meetings. In addition, through ambient monitoring efforts conducted by the SCAQMD there were no orders for facility-wide shutdowns. Provisions in the orders for abatement did require facilities to cease hexavalent chromium emitting operations until the average ambient concentration was below a specified threshold.

SCAQMD has a robust ambient monitoring program that ensures accurate results with established quality assurance and quality control procedures. The ambient monitoring activities in Paramount, Long Beach and Compton were subject to SCAQMD protocols and procedures that are used during sample collection, instrument calibration, chain of sample custody and sample analysis.

- 2-4 Response: Please see Responses to Comments 1-2 and 1-12.
- 2-5 Response: PAR 1469 applies to facilities performing chromium electroplating and chromic acid anodizing. PAR 1469 requirements are specific to tanks at these facilities. If facilities that do not perform chromium electroplating or chromic acid anodizing have process tanks that contain chromium, these other facilities are not subject to the requirements of PAR 1469. However, they may be subject to Rule 1426, and under a future rulemaking for PAR 1426 additional requirements may be imposed.
- 2-6 Response: The Tier I Tank definition, as discussed at Working Group meetings and Public Workshops is contained in paragraph (c)(57). A concentration of 1,000 ppm is appropriate to differentiate Tier I Tanks from those with lower concentrations of hexavalent chromium that have very limited potential for fugitive emissions. The 1,000 ppm threshold for a Tier I Tank was based on the 2012 National Emission Standards for Hazardous Air Pollutants (NESHAP). SCAQMD staff conducted source tests to determine the hexavalent chromium emissions associated with tanks at varying temperatures and concentrations to define Tier I, II, and III tanks. Please also see Response to Comment 14-2.
- 2-7 Response: Please see Response to Comment 1-1. SCAQMD staff has conducted additional emissions testing and added a new definition for a Tier II and Tier III Hexavalent Chromium Tank. The Tier II Hexavalent Chromium Tank definition is contained in paragraph (c)(58) and the Tier III Tank definition is contained in paragraph (c)(59). Tier III Tanks have the highest potential for emissions and these tanks are the focus of new requirements in PAR 1469. Staff has worked with the stakeholders to refine the concept for these tanks, including the concentration thresholds used in Appendix 10 to define Tier II and Tier III Hexavalent Chromium Tanks.
- 2-8 Response: The requirements for freeboard height have been removed from PAR 1469.
- 2-9 Response: Many of the requirements for a building enclosure have been modified since the comment was submitted, including the requirement for Tier I Tanks to be located within a building enclosure that meets the definition of a building enclosure under paragraph (c)(11) and the need for repairs is now clarified to apply to any breach in a building enclosure, however, operation of a Tier I Hexavalent Chromium Tank does not need to be in a building enclosure that meets the requirements of subdivision (e). Tier II and III Hexavalent Chromium Tanks must be within a building enclosure that meets the requirements of subdivision (e).
- 2-10 Response: Please see Response to Comment 1-11. The triggers for installation of a Permanent Total Enclosure (PTE) have been modified to require a PTE if an owner or operator fails to shut down a Tier II or III Hexavalent

Chromium Tank upon failing a smoke or slot velocity test, instead of requiring a PTE if an owner or operator fails a smoke or slot velocity test.

- 2-11 Response: Source testing requirements have been modified since this comment was received. PAR 1469 has been changed to require a subsequent source test after the initial source test every 60 months (five years) for facilities with permitted throughput of more than 1,000,000 amp-hrs/yr and every 84 months (seven years) for facilities with permitted throughput of less than 1,000,000 amp-hrs/yr. PAR 1469 requires an emission screening test after an initial sources test within 60 to 84 months if all capture efficiency tests conducted by the owner or operator within 48 months did not require a tank to be shut down and all applicable inspection and maintenance requirements (specified in Appendix 4) were conducted.
- 2-12 Response: Subdivision (m) provides that after a failing slot velocity measurement the tank must be immediately shut down, rather than the air pollution control (APC) system. Under the current proposal, other tanks served by the same APC system that have acceptable velocity measurements are still allowed to operate. Staff received comments that the deviation of +/-10% from the most recently approved of slot velocity and push manifold pressure was too stringent. A 10% deviation is the long-standing margin of error that SCAQMD's Source Test Engineering division assigns to test evaluations. Staff acknowledges that there are many factors that could alter the capture test results. However, the capture test is required every 180 days. Prior to this test, PAR 1469 requires the owner or operator to maintain control efficiency and monitor operating parameters. Issues can be identified and addressed by the owner or operator prior to necessitating a shutdown of the tank. While PAR 1469 would require a shutdown of the tank that is being controlled by an add-on air pollution control device, it would not require construction of a PTE. Construction of a PTE is based on whether an owner or operator of a facility failed to shut down a tank that had a failing measurement.
- 2-13 Response: Rule 430 does not apply to any Regulation XIV rules. Therefore, the notification requirements in PAR 1469 are not redundant and subparagraph (p)(4)(A) is necessary. Since the comment was submitted, the 1-hour timing to report a failed smoke test, failed source test, exceedance of a permitted ampere-hour limit, or malfunction of a non-resettable ampere-hour meter, while consistent with the 1-hour requirement to notify SCAQMD of a breakdown under Rule 430, has been extended to four hours.
- 2-14 Response: The referenced subparagraph has been removed from PAR 1469.
- 2-15 Response: The requirement under paragraphs (o)(4) and (m)(2) to record the surface tension daily for 20 operating days is an existing requirement. It is not the intent of this provision to restart the 20-day requirement for daily surface

tension measurement as a result of the proposed rule amendment. The requirement to measure surface tension every third operating day, increased from weekly measurements, is due to the faster degradation of non-PFOS-containing chemical fume suppressants that can result in hexavalent chromium emissions.

- 2-16 Response: Please see Response to Comment 1-9.
- 2-17 Response: Please see Response to Comment 1-10.
- 2-18 Response: A barrier separating the compressed air cleaning or drying operation within 15 feet of Tier II and Tier III Tanks provides appropriate control to prevent fugitive emissions associated with compressed air cleaning or drying operations from becoming airborne due to drafts within a building enclosure. A tank wall may function as a barrier as long as parts are compressed air cleaned or dried below the lip of the tank. A barrier is not necessary for compressed air cleaning within a PTE.
- 2-19 Response: Under PAR 1469, only rinse tanks having a hexavalent chromium concentration of 1,000 ppm or greater are considered Tier I Tanks and are subject to housekeeping requirements. Rinse tanks with a hexavalent chromium concentration less than 1,000 ppm do not have any requirements. Please also see Response to Comment 14-2.
- 2-20 Response: The comment refers to Tier II Tanks. Most of these tanks are now considered Tier III Tanks, with an intermediate designation of Tier II for tanks that meet the definition of paragraph (c)(58). Since receipt of this comment letter, SCAQMD staff has conducted additional samples and testing of hexavalent chromium tanks. Based on test data from a number of Tier I, Tier II and Tier III Hexavalent Chromium Tanks, it is evident that add-on air pollution controls are necessary for control of emissions from Tier III Tanks. The definition of Tier III Tanks, including temperature range and hexavalent chromium concentration, have been discussed at several Working Group meetings.

Wayne Nastri
Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

October 25, 2017

Dear Mr. Nastri,

Our organizations are very concerned about the lack of protections for communities in the proposed chrome plater rule which South Coast is planning on issuing in a few months. The rule has been significantly weakened since it was first proposed, abandoning ambient monitoring provisions, scaling back the use of HEPA filters, and removing the requirements for total enclosure with negative air. To say we are disappointed is an understatement.

3-1

Chrome platers emitting hexavalent chromium into our communities have been very problematic in the South Coast Basin for a long time. Many of our organizations worked on the existing state rule in 2006 and the subsequent local rules in South Coast. We pushed hard for the best protections available then, and to have more stringent requirement for platers located next to schools and sensitive receptors. It is apparent to us now that many facilities just did not comply with the rules and some sources went completely unregulated altogether. From the plater next to Suva School, to Master Plating, to the platers in Paramount and Compton now, the devastating public health effects to communities hosting these plating operations are an endemic part of the terrible history of environmental injustice in the South Coast region.

3-2

Chrome platers are concentrated in the Los Angeles area. No one really knows how many of these facilities exist, not even your own staff, but over 10% of all the chrome platers in the nation call the South Coast air basin their home. New facilities operating without permits are discovered often. These platers, already concentrated in our air basin, are further concentrated in low-income communities of color where enforcement is lax and regulators commonly turn a blind eye to complaints about odors and emissions. The communities of Paramount, Compton, and parts of East Los Angeles all have concentrated pockets of platers.

3-3

This concentration of chrome platers in communities is further exacerbated by other sources of hexavalent chromium emissions such as forgers and metal heat treaters, and potentially other sources not yet identified. Since there are so few air monitors in the basin which detect hexavalent chromium, it would be simply blind luck if a monitor were to be placed in one of these areas of concentration. Ironically, it was the air monitor placed to measure the emissions from Carlton Forge which inadvertently identified the platers in Paramount as an hexavalent chromium air pollution hot spot.

3-4

Each and every source of hexavalent chromium is contributing to the emissions which are endangering our communities. Each and every source needs to take on the responsibility to cease to emit this highly toxic chemical into our homes, schools, play yards, community centers,

3-5

and churches. Our communities should not bear the burden for these emissions with their health and well-being.

3-5
(cont'd)

When the original rule making on chrome platers started earlier this year it envisioned robust monitoring and rigorous air pollution controls for platers. However, pressure from the plating industry has your agency back-tracking on those measures. Without the monitoring, robust pollution controls, and total enclosure of all the industrial processes emitting these dangerous emissions we are no longer confident that this regulatory effort will protect our communities.

3-6

We urge you and your staff to consider the damage to public health which releases of hexavalent chromium are known to cause in the communities hosting these hexavalent chromium sources. We also urge you to think about the environment which the workers at these facilities are laboring in; these hexavalent chromium emissions are dangerous to all who work in this industry. We need the agency to insure that these facilities are made to completely capture these dangerous emissions, and to have the necessary monitoring sufficient to ensure compliance with the rules.

3-7

The European Union has just passed a regulation which will end the use of chromium for decorative purposes; we urge the South Coast AQMD to consider such as action as well. South Coast has taken similar actions before on dry cleaning facilities to ban chemicals which were damaging air quality and we urge you to consider to doing this for chromium as well.

3-8

If our experiences in the communities we represent teach us anything, we have learned that we cannot rely on anything but robust monitoring and a strong enforcement presence to ensure that these facilities are being operated properly and that our communities get the protections they deserve from their government. We urge you to work with us to create a rule which will ensure that families, teachers, workers, parishioners, and community residents are safe from hexavalent chromium in their communities.

3-9

Respectively,
Action Now
Mitzi Shpak
Executive Director
Altadena, CA

American Legion Post 6
Pastor Anthony Quezada
1927 E. Plymouth St.
Long Beach, CA

Apostolic Faith Center
Pastor Alfred Carrillo
1510 E. Rubidoux St.
Wilmington, CA

California Communities Against Toxics

Jane Williams
Executive Director
Rosamond, CA

California Safe Schools

Robina Suwol
Executive Director
Los Angeles, CA

California Kids IAQ

Drew Wood
Executive Director
Wilmington, CA

Coalition for a Safe Environment

Jesse Marquez
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Comité Pro Uno

Felipe Aguirre
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Maywood, CA

Community Dreams

Ricardo Pulido
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Del Amo Action Committee

Cynthia Medina
Assistant Director
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Earthworks Films, Inc.

Maria Florio
President
Sherman Oaks, CA

East Yard Communities for Environmental Justice

Mark Lopez
Executive Director
Commerce, CA

EMERGE

Magali Sanchez-Hall, MPH
Executive Director
Wilmington, CA

Exide Worker Community Committee

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Cynthia Babich
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Mary Cordaro
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Valley Village CA

Maywood Youth Soccer Association

Luis Orizaba
Director
Maywood, CA

Mothers of East Los Angeles

Teresa Marquez
President
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Mujeres Pro Maywood

Elizabeth Matamoros
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Joe R. Gatlin
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Our Right To Know
Rhonda Jessum, Ph.D.
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Padres Unidos de Maywood
Teresa Solorio
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Paramount Community Coalition Against Toxins
Magdalena Guillen
Executive Director
Paramount, CA

Pacoima Beautiful
Yvette Lopez-Ledesma
Deputy Director
Pacoima, CA

Philippine Action Group for the Environment
Fe Koons
President
Carson, CA

Physicians for Social Responsibility – LA
Martha Dina Arguello
Director
Los Angeles, CA

Randall Enterprises, Inc.
David Randall
President
Sherman Oaks, CA

Resurrection Catholic Church
Monsignor John Moretta
Pastor
Los Angeles, CA

San Pedro & Peninsula Homeowners Coalition
Dr. John G. Miller, MD
President
San Pedro, CA

Society for Positive Action
Shabaka Heru
President
Los Angeles, CA

St. Philomena Social Justice Ministry
Modesta Pulido
Chairperson
Carson, CA

Watts Labor Community Action Committee
Timothy Watkins
President/CEO
Los Angeles, CA

Wilmington Improvement Network
Anabell Romero Chavez
Board Member
Wilmington, CA

Responses to Environmental Multi-Agency(34 commenters, Action Now et.al.) Comment Letter, submitted 10/25/17

3-1 Response: PAR 1469 reduces emissions of hexavalent chromium and offers protection to the communities surrounding the affected facilities. PAR 1469 incorporates the requirements of the U.S. EPA chrome NESHAP (*Chromium Electroplating: National Emission Standards for Hazardous Air Pollutants*), as well as the California Air Resources Board (CARB) Airborne Toxics Control Measure (ATCM) for chrome plating and anodizing (*Airborne Toxic Control Measure for Chromium Plating and Chromic Acid Anodizing Facilities*). In addition, PAR 1469 requires control of additional process tanks not controlled by the NESHAP or CARB ATCM.

Early discussions regarding ambient monitoring and permanent total enclosures (PTE) under negative pressure vented to HEPA filters were discussed at Working Group Meetings, however, no provisions were included in PAR 1469. PAR 1469 does include a conditional provision for installation of a PTE for facilities that either conduct multiple non-passing source tests or fail to shut down a tank after failing a smoke or slot velocity test. See subdivision (t) of PAR 1469 for more information regarding triggers for installation of a PTE. Please also see Response to Comment 1-11.

PAR 1469 incorporates provisions to reduce migration of fugitive hexavalent chromium emissions outside of a building enclosure, including: closing roof openings within 15 feet of a Tier II or Tier III Tank; closing of enclosure openings located on opposite sides of a building enclosure; and closing of enclosure openings on sides of a building enclosure that directly face the nearest non-school sensitive receptor within 1,000 feet and directly face the nearest school within 1,000 feet. Please also see Response to Comment 9-1.

Although ambient monitoring provisions are not included in PAR 1469, a separate rule for ambient monitoring is planned. Please also see Response to Comment 1-7.

3-2 Response: The U.S. EPA NESHAP, CARB ATCM, and Rule 1469 only addresses chromium emissions from plating and anodizing tanks. Ambient monitoring and emissions testing conducted by SCAQMD staff revealed significant sources of hexavalent chromium emissions from certain non-plating tanks that were sparged (air-agitated), electrolytic, or operated at elevated temperatures. Control of these tanks, considered Tier II and Tier III Tanks is required under PAR 1469. Staff inspects chrome plating and chromic acid anodizing facilities and enforces air quality rules. Please also see Response to Comment 3-3.

In addition to addressing emissions from individual tanks at plating and anodizing facilities, PAR 1469 will reduce fugitive emissions of hexavalent chromium through best management practices, requiring a building enclosure for operations, limiting enclosure openings and specifying operational factors to limit cross drafts through a building enclosure. A PTE that is vented to air pollution control equipment meeting a high level of control, is required in certain situations.

- 3-3 Response: Staff has an accurate count of all plating and anodizing facilities that have permits with the SCAQMD and are subject to Rule 1469. As discussed in Chapter 1, staff conducted numerous searches to identify facilities that would be subject to PAR 1469. Staff conducted internet searches, verified lists of companies provided by stakeholders, and reviewed the SCAQMD's permit database for any potential PAR 1469 facilities.

SCAQMD regulates all facilities within its jurisdiction consistently across communities and SCAMD staff conducts inspections at all facilities with SCAQMD permits. Facilities regulated under Rule 1469 are subject to quarterly inspections, where inspections are conducted consistently facility to facility regardless of their location. SCAQMD staff routinely respond to complaints about odors and emissions received from the public.

- 3-4 Response: SCAQMD has existing rules that currently address many source categories of hexavalent chromium emissions, including from chrome plating and anodizing operations (Rule 1469 - *Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations*); from grinding operations at metal forging facilities, (Rule 1430 - *Control of Emissions from Metal Grinding Operations at Metal Forging Facilities*); from cooling towers (Rule 1404 - *Hexavalent Chromium Emissions from Cooling Towers*); from spraying of coatings containing chromium (Rule 1469.1 - *Spraying Operations Using Coatings Containing Chromium*) and from metal finishing operations (Rule 1426 - *Emissions from Metal Finishing Operations*). In addition to existing rules for the source categories described above, SCAQMD has also proposed rules to address hexavalent chromium emissions from metal melting operations (PR 1407 - *Control of Emissions of Arsenic, Cadmium and Nickel from Non-Ferrous Metal Melting Operations*); from heat treating (PR 1435 - *Control of Emissions from Metal Heat Treating Processes*) and from laser cutting of metals (PR 1445 - *Control of Toxic Emissions from Laser Arc Cutting*). PAR 1469 will reduce emissions of hexavalent chromium from fugitive sources, through housekeeping practices and by requiring building enclosures, as well as from point sources. Other SCAQMD rules described above also include requirements to reduce metal air toxic emissions.

Under the SCAQMD Community Air Toxics Initiative, SCAQMD will systematically identify and prioritize high-risk facilities, then use the latest air monitoring technology to confirm specific sources causing high emissions. If necessary, SCAQMD will seek Orders for Abatement from the independent SCAQMD Hearing Board to require these facilities to reduce their emissions to a level that does not pose an immediate threat to public health.

Air monitoring in the Compton area has begun to launch this initiative. Efforts there will initially focus on chromium plating and anodizing plants. In addition, the SCAQMD has received a series of metallic odor complaints from community members in Paramount. In response, staff began conducting investigations into local sources of emissions.

- 3-5 Response: Please see Response to Comment 3-4.
- 3-6 Response: Please see Response to Comment 3-1
- 3-7 Response: Please see Response to Comment 3-1. Regarding your comments on the environment in which the workers at these facilities labor, and that hexavalent chromium emissions are dangerous to all who work in this industry; after consultation with CAL-OSHA, SCAMQD staff verified that there is no conflict between the requirements of PAR 1469 and the requirements of CAL-OSHA, the agency responsible for indoor air quality at industrial facilities. Implementation of PAR 1469 to install air pollution controls for Tier III Hexavalent Chromium Tanks is expected to also improve the work environment as these tanks will be ventilated to pollution controls rather than emitting within the building exposing workers to high levels of hexavalent chromium emissions.
- 3-8 Response: The European Union (EU) REACH program allows Authorisations (i.e. exemptions) for up to 12 year review periods to identify alternatives. In addition, the EU may allow additional time to identify and implement alternatives after the initial review period, depending on the outcome of the initial review period. Authorisations have been granted for chromic acid anodizing and hard and decorative plating operations. Authorisations have been granted for the appearance and color of plated products. It should be noted that EU Authorisations are very broad, and can include both upstream and downstream users within a single Authorisation. The EU defines “functional decorative plating”, which is very broad and includes architectural, automotive, and metal manufacturing, a definition which includes decorative plating as commonly recognized in the United States.

Please also see Response to Comment 9-2.

- 3-9 Response: Please see Responses to Comments 3-1 and 3-3.



PROMOTING EH&S COMPLIANCE BY ACHIEVING
IMPROVED COMMUNICATION BETWEEN INDUSTRY AND GOVERNMENT

November 8, 2017

Mr. Eugene Kang
Program Supervisor
Planning, Rule Development and Area Sources
South Coast Air Quality Management District
21865 Copley Drive Diamond Bar, CA 91765
Phone: (909) 396-3524

Subject: Proposed Amended Rule 1469 Comments

Dear Mr. Kang,

The Industrial Environmental Coalition of Orange County (IEC/OC) appreciates the opportunity to provide comments to the South Coast Air Quality Management District (SCAQMD) on Proposed Amended Rule (PAR) 1469, Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations. The IEC/OC represents diverse industrial businesses in Orange County, including aerospace companies, metal processing facilities, pharmaceutical companies, general manufacturing, and public utilities. Our mission is to facilitate communication between industry and government agencies on environmental issues impacting our member's business operations.

In pursuing rule developments and other actions, the IEC/OC requests that SCAQMD consider reasonable, fair, and cost-effective emission control requirements that will properly achieve the health protection goals of the SCAQMD's Air Toxic Initiative.

In general, IEC/OC's finding on PAR 1469 is that certain conditions and requirements included in the draft rule language may not be feasible considering current operating parameters of existing tanks and tank lines. Implementation of PAR 1469 in its current form would render certain tank lines at existing facilities inoperable, and could force businesses out of the district. The requirements of PAR 1469 should be revised to account for difficulties associated with modifying existing operations.

4-1

IEC/OC has the following specific comments on PAR 1469:

1. **Comment 1 – The Requirements for freeboard height contained in Section (d)(4) of the draft rule language are not feasible at existing facilities.** The current industry standard is a freeboard height of four inches for electroplating, and many existing facilities have automated tank lines that have a uniform freeboard height of four inches. Changing the freeboard height of one tank in an existing line to eight inches would render these automated lines inoperable. Automated lines are difficult to physically modify for reasons including, over-head clearance limitations, existing rack size and configuration, and strict process specifications that are set and audited by defense and commercial aircraft customers. In addition, parts loaded into the rack of an automated line will not be fully submerged if the liquid level of one tank were to be lowered. This would result in failure to meet established performance standards. IEC/OC suggests that the eight-inch freeboard height requirement be changed from modified and new Tier II tanks to new standalone tanks or new tank lines, only. The requirement for freeboard height of eight inches should not apply to existing process lines.

4-2

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Mr. Eugene Kang
SCAMQD
November 8, 2017
Page 2

2. **Comment 2 – The compliance dates for permit application submittal do not allow enough time to adequately assess options and prepare an application for successful modifications.** The draft rule language establishes compliance time limits for permit application submittal of 180 to 365 days. Additional time is needed to properly plan, design, and apply for significant process changes, such as add-on control devices. Six months is inadequate to develop a strategy, confirm that control device operating parameters, such as capture air velocity and pressure drop across various control processes, will meet the requirements of the new rule, and confirm the newly designed process will continue to meet customer specifications. To ensure process modifications and/or add-on control technologies achieve long-term success, adequate time should be allowed for research, planning, design, and application preparation. IEC/OC suggests a compliance date of two years after the date of adoption for permit application submittal. 4-3

3. **Comment 3 – The definition of a Tier II Tank was established using insufficient data.** Page 1-22 of the Preliminary Draft Staff Report states, “Further testing will be conducted to determine whether there are significant increases in emissions in the range of temperatures between 140 and 170 degrees Fahrenheit.” Despite this statement and the lack of supporting evidence, the current definition of a Tier II tank includes 140 degrees as the temperature threshold, and a Public Workshop was held for the PAR. Further progress on PAR 1469 should be delayed until adequate data regarding key quantitative definitions are obtained. 4-4

The IEC/OC supports an open dialogue on SCAQMD’s Air Toxics Initiative, PAR 1420, and other actions, to effect beneficial rule developments. If you have any questions, please do not hesitate to contact me at (562) 495-5777.

Sincerely,

Chris Waller

IEC/OC Air Regulations Sub-Committee Chair

Mission Statement: Our goal is to provide a forum for Orange County businesses to remain current on emerging issues and to exchange views with environmental and safety agencies in an open and informal setting.

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**Responses to Industrial Environmental Coalition Orange County Comment Letter,
submitted 11/8/17**

- 4-1 Response: The economic impacts resulting from compliance with PAR 1469 are analyzed in the Socioeconomic Impact Assessment.
- 4-2 Response: The requirements for freeboard height have been removed from PAR 1469. Continuing with SCAQMD's current permitting practice, the freeboard heights of individual tanks will be determined during the permit evaluation process.
- 4-3 Response: The proposed requirements for permit application submittals relating to controls on Tier III Tanks are 180 days, 365 days, and 545 days after rule adoption for chromic acid anodizing, hard chrome plating, and decorative chrome plating facilities, respectively. PAR 1469 allows sufficient time for preparation of a permit application that considers the required research, plan, and design for the air pollution control system. Once a complete permit application is received, the facility and SCAQMD permit engineering staff typically continue discussions to work out issues or design changes prior to issuance of a SCAQMD Permit to Construct.
- 4-4 Response: Please see Response to Comment 1-1.

From: Jim Meyer [mailto:jmeyer@aviation-repair.com]
 Sent: Friday, November 10, 2017 11:43 AM
 To: Eugene Kang <EKang@aqmd.gov>; Neil Fujiwara <nfujiwara@aqmd.gov>; Susan Nakamura <SNakamura@aqmd.gov>
 Subject: PAR 1469 Comments

Please consider the following comments regarding the proposed rule 1469.

Please consider a modification to the rule requiring two doors at a facility not be open simultaneously. We think the rule could be reasonably modified (improved) by:

1. Allowing facilities which are not near sensitive receptors to have doors open. This provides a further incentive to locate facilities away from sensitive receptors. It should be a policy goal to create positive incentives for locating plating businesses away from sensitive receptors. By creating positive incentives, you can influence plating businesses to move away from schools.
2. Allowing the doors to be opened at facilities where plating tanks are more than 30 feet from a door.
3. Allowing facilities which generate less than 20 million amp hours annually to open the doors.
4. Allowing facilities to open doors when they are not actively plating.
5. Allow the doors to be opened if the facility has constructed baffles to block a cross-draft.

Our reasoning is as follows:

1. If and when it is windy, operators will voluntarily choose to close the doors because they do not want dust to contaminate their tanks.
2. If a business is not near a sensitive receptor, there is no bad consequence of opening the doors.
3. If plating tanks are not near doors, there is much less likelihood that opening doors would enable fugitive emissions. 30 feet is a reasonable distance.
4. Tanks vented to HEPA's which are able to pass smoke tests are not generating fugitive emissions.
5. Employee health should be considered in the rule making. Temperature and humidity can rise dramatically inside a plating facility on warm days. Heat is a health issue. It is inefficient to air condition the buildings because of the HEPA's. Opening doors is a reasonable method to assure employee safety.

The point is that the "doors" rule accomplishes very little at some facilities at a cost that is high in terms of employee health and safety.

We are also concerned that the section of the rule that "prohibits operations of any devices in any roof opening which pull air from the building enclosure to the outdoor air" is going to cause problems with previously permitted operations. We have a set of AQMD permitted tanks containing various stripping, etching, pre-treatment, and cleaning solutions (no chrome) which are vented through hoods to a blower and stack on our roof. These hooded tanks are near chrome plating tanks but the chrome tanks have pollution controls so there should not be a concern about fugitive emissions. We have been operating safely with the current setup for decades, without complaint, not near sensitive receptors. We cannot operate without the permitted tanks that vent to the roof. We do not know what you would require to solve the issue but it seems expensive. At a minimum, our line should be grandfathered and be allowed to change if necessary for work needs.

5-1

5-2

We use air sparging while plating and have always used air sparging. Sparging is essential to successfully plate the inner diameters of cylinders associated with landing gear systems, flight controls, and thrust reversers. These are flight critical aircraft components and the quality of the plating should not be sacrificed when the sparging mist is being captured by the HEPA system in any case. We plate at night with the doors closed and no one in the building, the HEPA system with push pull headers captures the sparging mist. Regarding the need to prove the need to sparge with a Mil-Spec, we would hope that SAE specs, or Specs from major OEMs would suffice for proof as we serve predominately the commercial aircraft industry. We do not know why suppliers that support the military would get advantaged in an area that has to do with flight safety.

5-3

It is un-necessary to increase the frequency of source tests. Our HEPA system has proved efficient for two decades with wide gaps between source tests. We actively maintain the system. Requiring additional frequent scrutiny of source controls that have already worked to cut emissions by 99% (per AQMD data) is un-necessary and massively expensive. It is hard to understand what the motivation is to change the frequency of source testing when the impetus for the rule change was generated at facilities without adequate source controls. Imposing this requirement will force industry consolidation resulting in fewer small businesses (with low amp hours) and more of the types of facilities where you are observing the issues. This additional testing seems counterproductive. We suggest this is an area you should consider source test frequency requirements as a function of proximity to sensitive receptors. Facilities which are not near sensitive receptors should need fewer source tests than facilities near sensitive receptors. This is another area of the rule where you can create a positive incentive to locate away from sensitive receptors.

5-4

The attempt to regulate grinding in the rule is inconsistent because it applies only to rule 1469 facilities. Most grinding is not conducted in rule 1469 facilities. Is it intended to apply to both "wet" grinding and "dry" grinding? Would the rule apply to grinding conducted in a separate building on the same property?

5-5

The AQMD has explained in each meeting that the reason for updating the rule is due to conditions observed at ANODIZING facilities and HEAT TREATING facilities. We do not perform anodizing nor do we perform heat treating and yet we find that nearly every proposed rule change will increase our regulatory burden and expense.

We have operated within the regulations and without public complaints for over a decade in this location. AQMD rule making should take into account that small facilities which are located in heavy industrial zones that are not near sensitive receptors and that do have state of the art pollution control systems (HEPA) should not be excessively burdened by a rule change like this. The need for rule change was driven by different types of businesses in a different type of location and the rule changes should have been focused on the differences which caused the problems in those locations. There is nothing wrong with the existing frequency of source tests. There is nothing wrong with air sparging in HEPA controlled tanks. Opening doors for employee comfort in a heavy industrial zone is reasonable considering the major cancer risks in those zones are not Hex Chrome. The pollution controls we have invested in have proven valuable to society in the LA Basin. Threatening the health of employees (door rule), decreasing plating quality (sparging), and adding burden (source test frequency) to compliant small businesses will only result in negative impacts on Southern California.

5-6

We would appreciate your acknowledgement of receiving these comments and your consideration of implementing these thoughts in the final rule.

Jim Meyer
Aviation Repair Solutions, Inc.
1480 Canal Ave
Long Beach, Ca. 90813
562-437-2825

Responses to Aviation Repair Comment Letter submitted 11/10/17

5-1 Response: Allowing facilities that are not near sensitive receptors to have doors open does not address concerns for fugitive dust potentially containing hexavalent chromium settling outside the buildings on other land uses accessible to the public that are not defined as a sensitive receptor, such as worker receptors in industrial zones. Ambient monitors have shown that closing a door to eliminate cross-draft can reduce the ambient concentration of hexavalent chromium by more than 75 percent. The commenter also states that some facilities may voluntarily choose to close doors if it is windy in order to avoid dust contaminating tanks, however, other facilities may choose to keep them open, absent a requirement to close them. In place of a closed door, PAR 1469 allows for other methods for minimizing cross-drafts, including the use of overlapping plastic strip curtains, vestibules, airlock systems, and other methods that an owner or operator can demonstrate is an equivalent or more effective method to minimize movement of air within a building enclosure. Tanks vented to HEPA filters which are able to pass smoke tests are allowed to demonstrate that point source emissions are being captured from a tank at the time of the test, but this test is only required once every 180 days and the system can become fouled before the next test is conducted. Requirements for closing doors will provide additional assurance that potential process fugitives from these situations are not escaping the building enclosure between smoke tests. Since facilities with over 500,000 amp-hours annually are already recognized by Rule 1469 and the CARB ATCM for chrome plating as a high throughput facility, it is not reasonable to exempt facilities that generate less than 20 million amp-hours annually.

Regarding considerations for employee health, PAR 1469 includes a provision that allows facilities to implement alternative requirements to closing doors and other building enclosure provisions if PAR 1469 conflicts with OSHA, CAL-OSHA or local municipal code requirements for worker safety.

5-2 Response: PAR 1469 requires closure of all enclosure openings in the roof that are located within 15 feet from the edge of any Tier II or Tier III Tank, except enclosure openings in the roof that are used to allow access for equipment or parts, or provide intake air or circulation air for a building enclosure that does not create air velocities that impact the collection efficiency of a ventilation system for an add-on air pollution control device. Powered devices in the roof opening that are located within this distance can continue to operate if the air is vented to HEPA filters. Provisions for openings in a roof have been modified throughout the rulemaking process. Please refer to paragraph (e)(3) for more information.

- 5-3 Response: The prohibition on air sparging that was a part of the first proposal for PAR 1469 has been removed.
- 5-4 Response: Rule 1469 currently requires a one-time source test for the life of the air pollution control device. Periodic source testing is necessary to quantitatively confirm that hexavalent chromium emissions measured at the stack of the control device are in compliance with emission rate limits of the rule. Consequently, PAR 1469 includes a periodic source testing requirement. Staff acknowledges the cost of these source tests so PAR 1469 allows existing controlled tanks to use a source test that meets specific criteria and conducted after January 1, 2009 to comply with the initial source test requirement of PAR 1469. Other reductions to source testing costs include allowing emissions screening tests (source test consisting of one run) versus triplicate tests for source tests conducted after the initial source test. Facilities that operate in full compliance with specific requirements for qualitative and quantitative assessments of control equipment will also have a once every five years testing schedule for facilities with permitted throughput of more than 1,000,000 amp-hrs/yr and once every seven years for facilities with permitted throughput of less than 1,000,000 amp-hrs/yr, so long as they remain compliant with said requirements. By only requiring periodic source testing for facilities that are located near sensitive receptors, stack emissions can settle on other land uses accessible to the public that are not defined as a sensitive receptor, in addition to worker receptors in industrial zones.
- 5-5 Response: Both Rule 1469 and the CARB ATCM for chrome plating currently include requirements for grinding operations conducted at chrome plating and anodizing facilities. Regarding grinding operations, existing provisions require that a physical barrier separates grinding areas within a facility from the hexavalent chromium electroplating or anodizing operation. Grinding conducted in a separate building on the same property of a Rule 1469 facility would still be subject to grinding requirements of the rule, however, having this grinding area located in a separate building would comply with the existing requirement for installation of a physical barrier. PAR 1469 adds an exemption to grinding requirements of the rule if the grinding is conducted under a continuous flood of metal removal fluid.
- 5-6 Response: Please see Responses to Comments 5-1 through 5-5. The impetus for development of PAR 1469 includes the discovery of tanks that were previously unknown to be a source of hexavalent chromium emissions and cross-drafts in buildings that house both chrome plating and chromic acid anodizing operations. Observations made during site visits conducted by staff include building conditions that resulted in the escape of fugitive dust at all types of chrome plating facilities and not just chromic acid anodizing facilities.



November XX, 2017

DRAFT

Mr. Wayne Natri
 Executive Officer
 South Coast Air Quality Management District
 21 865 East Copley Drive
 Diamond Bar, California 91765

Re: Comments from Metal Finishers Association - Proposed Amended Rule 1469 and Preliminary Draft Staff Report, Working Group Meeting #7

Dear Mr. Natri:

The Metal Finishers Association ("MFA") represents over 130 companies throughout Northern and Southern California, which comprise a diverse industrial base of metal finishing and related businesses that employ thousands of workers. Its members provide necessary products and services to manufacturers in various other industries, including, automotive, consumer products, industrial, energy, aerospace and numerous others. In particular, a large segment of our membership provide mission critical parts and components for military aircraft, satellites, telecommunications, defense and the like. In addition, well over 90% of the MFA membership meet the federal definition of Small Business with fewer than 150 employees, and are typically private family businesses or otherwise small closely held companies.

Representatives of the MFA, including legal counsel and technical experts, have been actively engaged with AQMD staff since the beginning of the recent rulemaking process earlier this year. MFA members and its representatives have also attended all seven (7) public working group meetings, including, the most recent meeting held on October 26, 2017 (referred to as "Working Group Meeting #7"), plus participated in numerous other meetings with the AQMD's legal counsel, economic experts and rule development staff. In addition, the MFA and its representatives attended and testified at the Public Hearing on this rule development which was held on November 1, 2017. This comment letter addresses the issues raised at the Working Group Meeting #7, recent public hearing, PAR 1469 rule language and Preliminary Draft Staff Report.

1.0 PRELIMINARY DRAFT STAFF REPORT

While the MFA reserves the right to modify or supplement these comments based on subsequent AQMD presentations, at this time, the following summarizes our primary concerns and comments for the Preliminary Draft Staff Report dated October 2017 (Staff Report):

(1) **Chrome Tank Test Data** – The Staff Report presents the collected emission test data from the various metal finishing facilities as being supportive of the rule amendments (Page 1-14 to 1-17). As we have noted on numerous occasions, the MFA remains concerned that major rulemaking and policy decisions are being based on inconsistent data and little scientific support, especially when it concerns a potential requirement of add-on control devices and other costly measures for currently unregulated tanks.

6-1

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Wayne Nastri, SCAQMD - Proposed Amended Rule 1469
November XX, 2017

As a general matter, the Staff Report fails to qualify these field test data as being extremely limited for purposes of this rule development, but instead, presents the data as complete and scientifically supported which is misleading. For example, PAR 1469 defines a Tier I tank with hexavalent chrome content of 1,000 ppm, however there is insufficient field data indicating there are any significant emissions at such a low threshold. Quite the contrary, there were only 2 or 3 emissions data points collected for unregulated tanks between 32,000 and 60,000 ppm hexavalent chromium, and yet a far lower limit of 1,000 ppm is being proposed as the Tier I applicability threshold. As another example, PAR 1469 defines a Tier II tank as a Tier I tank with an operating temperature exceeding 140° F; however, there is virtually no tank temperature data collected for tanks operating below 190° F with the exception of one tank at 170° F which was not a chrome tank, but rather a nickel acetate seal tank. As a consequence, there is no data whatsoever that supports an operating temperature of 140° F as being significant factor of fugitive hexavalent chrome emissions from applicable tanks, and yet, this temperature level was established as the Tier II applicability threshold. These are only a couple examples of the “cart being in front of the horse” when it comes to this particular rule development. From the beginning, the MFA has been concerned that this rule development (and associated enforcement activities) have largely been an exercise to selectively find evidence that supports a certain theory rather than objectively gathering data in a scientific manner and drawing appropriate conclusions. Due to these concerns and others, the proposed rule has the potential to be tremendously burdensome for industry while having little to no significant effect on emissions.

6-1
(cont'd)

(2) Fugitive Emissions – While the emissions test data from unregulated tanks has been very limited, there has also been insufficient demonstration that fugitives from such tanks are being significantly exhausted from buildings, nor that add-on control devices are necessarily required for such tanks. Under existing Rule 1469, the applicable emission limits for existing chromium electroplating and chromic acid anodizing tanks is 1,500 ng/amp-hr, which is typically measured after add-on control devices such as High Efficiency Particulate Air (HEPA) systems. These add-on control devices are generally mounted on rooftops through a single exhaust stack with forced ventilation. Rather than relying on assumptions, AQMD needs to base its regulatory policy and rulemaking on validated scientific data that demonstrates significant fugitive emissions are actually being discharged from buildings through roof vents, doors, windows and other openings. Thus far, any substantial scientific data making such demonstration for fugitive emissions is lacking. Quite the contrary, based on statements from the AQMD source testing staff during the working group meetings, it appears that measured fugitive emissions through rooftop vents from unregulated tanks are far below any measurements at the tank surface by several orders of magnitude, even without any add-on control devices. Based on the data gathered thus far, the fugitive emissions from the unregulated sources exiting the building would be considerably less than the emissions from the existing permitted sources. Accordingly, the elimination of all fugitive emissions from metal finishing operations would do little, if anything, to reduce ambient air concentrations of hexavalent chromium, particularly considering that metal finishing emissions of hexavalent chromium represent less than one percent of the total hexavalent chromium emissions according to the U.S. EPA National Emissions Inventory.

6-2

(3) Ambient Monitoring Near Metal Finishers – The Staff Report presents the ambient monitoring data of hexavalent chromium around five (5) metal finishers in the cities of Newport Beach, Paramount, Long Beach and Compton (Page 1-8 to 1-10). Air toxics enforcement actions against these facilities have referenced a hexavalent chromium concentration of 1 ng/m³ as a fence line (or near fence line) threshold for enforcement purposes. For the facilities in Newport Beach and Paramount, the Staff Report indicates average high ambient readings for hexavalent chromium of 3.5 to 11.0 ng/m³, which were subsequently reduced to 0.25 to 0.40 ng/m³. The Staff Report indicates the Long Beach facility had average hexavalent chrome readings from 0.4 to 0.9 ng/m³, which are below the enforcement threshold of 1 ng/m³. As we have noted on numerous occasions, the MFA continues to remain concerned about the use

6-3

Wayne Natri, SCAQMD - Proposed Amended Rule 1469
November XX, 2017

of ambient air monitoring (and fence line limits) for rulemaking and enforcement purposes, and have raised legitimate issues of flawed assumptions, unreliable data, contributing sources, prohibitive costs and inconclusive results. Nevertheless, the AQMD continues to selectively utilize such unreliable ambient monitoring data to unfairly target metal finishers, and support its enforcement and rulemaking efforts. Moreover, the AQMD continues to rely upon an unsubstantiated 1 ng/m³ hex chrome standard that is not supported by the current science for enforcement purposes, including, orders for facility shut down and business curtailment. Based on testimony of affected small businesses, it is clear the AQMD's continued use of such unreliable air monitoring data is having significant adverse economic impacts, including, loss of customers, decreased business volumes and employee layoffs.

6-3
(cont'd)

2.0 PROPOSED RULE AMENDMENTS

The AQMD presented proposed rule language dated October 20, 2017, which included rule applicability, definitions, general requirements, housekeeping and best management practices (BMPs). While the MFA reserves the right to modify or supplement these comments based on subsequent AQMD presentations, the following summarizes our primary comments at this time:

(1) Rule Applicability - As explained by AQMD staff, PAR 1469 would apply to chromium electroplating, chromic acid anodizing tanks and associated chrome tanks. Based on our understanding, those facilities which do not operate chromium electroplating or chromic acid anodizing tanks would not be subject to PAR 1469, although they may operate tanks with chromium for other purposes. In addition, those tanks which are not associated with chrome plating or chrome anodizing would also not be subject to PAR 1469. If our understanding is correct, this rule applicability for PAR 1469 is consistent with existing Rule 1469 regarding applicable tanks, so the MFA has no further comment.

6-4

(2) Definition of "Building Enclosure"- The MFA requests that PAR 1469 (c)(11) is changed as follows, which removes rule ambiguity and minimizes wide interpretation by AQMD enforcement officers for possible issuance NOV's: "BUILDING ENCLOSURE means a permanent building, enclosed with a floor, walls, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, run-off), with limited openings to allow access for people, vehicles, equipment, or parts. ~~that is free of breaks, cracks, or gaps, or deterioration that could cause or result in fugitive emissions.~~"

6-5

(3) Definition of "Modification" - As previously noted, the MFA is concerned that efforts by regulated facilities to comply with rule requirements may be construed as a "modification" or otherwise trigger permit actions and New Source Review (NSR). A few examples of BMPs, housekeeping and other control measures under PAR 1469 which may trigger NSR are (a) relocating tanks farther away from roof vents, (b) installing covers to existing tanks, (c) adding polyballs or other mechanical fume suppression, (d) replacing air sparging with mechanical agitation; (e) installing or upgrading pressure gauges, flowmeters or other required monitoring devices; or (f) installing a total enclosure around existing tanks. Consequently, the MFA requests PAR 1469 (c)(40) is changed to include the following additional exclusions from the definition of "Modification":

6-6

"... Routine maintenance and/or repair shall not be considered a physical change. A change in the method of operation of equipment, unless previously limited by an enforceable permit condition, shall not include:

- iv. The removal of air sparging as a method of agitation;*
- v. The addition of mechanical agitation as a method of agitation;*
- vi. The addition of polyballs or other mechanical fume suppression;*
- vii. Installation of covers for applicable tanks;*

Wayne Nastri, SCAQMD - Proposed Amended Rule 1469
November XX, 2017

- viii. *The relocation of applicable tanks within a facility.*
- ix. *Installing or upgrading pressure gauges, flowmeters or other required monitoring devices;*
- x. *Installing a total enclosure around existing tanks;*
- xi. *Installing heating, cooling or other rooftop ventilation equipment.*

6-6
(cont'd)

(4) Tier I Hexavalent Chromium Tanks – PAR 1469 (c)(58) proposes a threshold of 1,000 ppm of hexavalent chromium content to qualify Tier I tanks. As we have noted, there is insufficient scientific support and test data that justifies such an extremely low concentration threshold for Tier I tanks. Tier I should only apply to those tanks which exhibit the highest potential for hexavalent chrome emissions, and therefore exclude all other tanks from regulatory applicability, such as, chromate conversion tanks, dye tanks, cleaner and de-smut tanks, etch, neutralization, passivation, dilute chromate seal and rinse tanks. Based on the limited test data presented by the AQMD, and since there is no minimum chrome concentration to qualify a Tier II tank, there needs to be a much higher hex chrome threshold for Tier I tanks. In this regard, the MFA proposes the following definition for Tier I tank:

6-7

PAR 1469 (c)(58) - TIER I HEXAVALENT CHROMIUM-CONTAINING TANK means a tank permitted as containing a hexavalent chromium concentration of 5,000 parts per million (ppm) or greater.

(5) Tier II Hexavalent Chromium Tanks – PAR 1469 (c)(59) proposes a Tier II tank applicability for a Tier I tank with: (a) minimum operating temperature of 140° F; (b) conducts air sparging; or (c) is electrolytic. The MFA is concerned that there is no minimum hex chrome concentration to qualify a Tier II tank. In addition, there is no scientific support nor test data that justifies 140° F temperature threshold for Tier II applicability, which is extremely low. Based on the Staff Report, the minimum temperature threshold for Tier II tank applicability should be **190° F**, which captures tanks operating near the boiling point of water. The temperature threshold of 140° F is not supported technically, scientifically or otherwise. Lastly, the MFA remains concerned about air sparging restrictions as well, which are discussed further below. In this regard, the MFA proposes the following definition for Tier II tank:

6-8

PAR 1469 (c)(59) - TIER II HEXAVALENT CHROMIUM-CONTAINING TANK means a TIER I HEXAVALENT CHROMIUM-CONTAINING TANK that meets the following criteria:

- (A) Has an operating temperature above 190 degrees Fahrenheit; or*
- (B) Uses air sparging as an agitation method; or*
- (C) Is electrolytic.*

(6) Prohibition of Air Sparging – PAR 1469 (d)(3) prohibits any a Tier II tank from air sparging as a method of agitation after 180 days of rule adoption, unless proof of a military specification is submitted within 30 days, and there is written approval from the Executive Officer. Since Tier II tanks are already subject to air pollution controls, source testing and emission limits, there is no justification to prohibit air sparging in such tanks. Further, metal finishers require the flexibility to meet changing market demands, prime contractor specifications and customer requirements at all times, whether military or other markets. The requirement of a military specification and written prior approval from the AQMD will handcuff many metal finishers from chasing new business, quoting potential jobs, satisfying existing customers and running their businesses. Moreover, seeking prior AQMD approval will certainly be a speculative and likely time consuming process. As a consequence, this prohibition creates substantial business risk with little environmental benefit, which should be removed from PAR 1469.

6-9

Wayne Natri, SCAQMD - Proposed Amended Rule 1469
November XX, 2017

(7) Freeboard Height – PAR 1469 (d)(4) would require a minimum freeboard height of 8” for applicable Tier I and II tanks, which are newly installed (or modified) after the rule adoption date. The freeboard height requirement would not apply to existing tanks prior to rule adoption. As noted previously, the MFA opposes a freeboard height requirement for existing, new or modified applicable tanks, as it has not been demonstrated that a minimum freeboard height results in any meaningful emission reductions. In general, facility operators are already incentivized to maintain a tank freeboard to preserve product quality and minimize chemical losses. To manage a different freeboard height for different tanks would create significant compliance issues for facility operators while providing minimal environmental benefit.

6-10

(8) Building Enclosures – PAR 1469 (e)(1) through (e)(9) specifies numerous building enclosure requirements for both Tier I and Tier II tanks, which the MFA offers the following comments:

a) Limitation on Building “Openings” – As per PAR 1469(e)(1), the MFA opposes the 3% surface area limitation on the number of openings in building enclosures, such as doors, windows, roll up doors and others. Over the course of the prior 6 months of rule development and workshops, a specific surface area or other limitation on building openings has never been presented nor studied by the AQMD staff, and is not supported by any scientific or other evidence in the record.

6-11

b) Closure of Openings within 100 feet of Sensitive Receptor – As per PAR 1469(e)(2), the MFA requires additional flexibility in the requirement to close all building openings within 100 feet of a sensitive receptor, school or early education center. This requirement is vague as it may be interpreted to (a) include buildings without chrome tanks; (b) prohibit passive roof vents which are otherwise permissible; and (c) prohibit openings which could be closed with overlapping plastic strip curtains, vestibules, automated roll up doors or alternative means to minimize fugitives which are otherwise permissible under PAR 1469 (e)(3). The MFA requests additional clarity in this requirement, and the above flexibility as similar to PAR 1469 (e)(3).

6-12

c) Close Roof Openings within 30 feet – PAR 1469 (e)(4) requires the closure of all roof openings located within 30 feet above the edge of any Tier I or Tier II Tank. The MFA fails to see the purpose of this requirement, since Tier I tanks are not considered high emitting tanks under the rule, and Tier II tanks are required to have add-on controls. As a consequence, the MFA requests that this provision be removed.

6-13

d) Prohibition on Rooftop Ventilation – PAR 1469 (e)(5) prohibits any device in any roof opening that pulls air from building enclosures for Tier I and Tier II tanks. The MFA is concerned that such a broad prohibition on building ventilation will create uncomfortable, and likely unsafe, working conditions for employees within such enclosures. Moreover, as we have noted in prior working group meetings, the AQMD source test staff has indicated measured fugitive emissions through rooftop vents are far below any measurements at the tank surface by several orders of magnitude, even without any add-on control devices. Consequently, such a broad prohibition on rooftop ventilation for building enclosures are not warranted.

6-14

e) Breaks, cracks, gaps and deterioration – PAR 1469 (e)(6) and (7) specifies monthly inspections, and a 72 hour repair of “breaks, cracks, gaps and deterioration” of building enclosures. There is no clear definition of “breaks, cracks, gaps and deterioration” in the rule, and unlikely that a clear definition is possible. As a consequence, the MFA opposes these inspection and repair requirements, given the vagueness of “breaks, cracks, gaps and deterioration”, and a high risk of wide interpretation by AQMD enforcement officers for issuance of NOVs.

6-15

Wayne Nastri, SCAQMD - Proposed Amended Rule 1469
November XX, 2017

(9) Source Testing - PAR 1469 (k)(3) will require initial compliance source test for all facilities within 120 days from rule adoption, and then every 36 months thereafter. Alternatively, an emissions screening of a single test run may be conducted every 36 months in lieu of a full source test. The MFA requests the following changes:

a) For existing facilities, the MFA believes one (1) year should be allowed for the initial compliance source test;

6-16

b) Any compliant source test within the last 5 years (September 1, 2012) may be used to demonstrate compliance with the initial compliance test;

c) If the facility already has a compliant source test on record with the SCAQMD beyond 5 years, the initial compliance test should be an emission screening; and

d) Emission screenings be conducted **every five (5) years** thereafter, not every 3 years.

(10) Capture Efficiency Testing – PAR 1469 (k)(6) specifies routine slot velocity and smoke testing for applicable tanks with add-on control devices every 6-months, respectively. In particular, PAR 1469 specifies that a facility must “shut down” all chrome electroplating and anodizing lines, if such capture tests show a deviation of +/- 10% from the most recently approved AQMD source test or emission screening. The MFA is very concerned of such stringent limitations and shut down requirement, given the numerous factors that could impact these capture test results, such as, equipment sensitivity, testing locations, personnel handling and others. 10% is a very small margin for error which would be difficult to ensure compliance, could result in unnecessary equipment shut downs, and lead to triggering the on-ramp for a Permanent Total Enclosure (PTE) pursuant to PAR 1469 (t).

6-17

(11) Permanent Total Enclosures (PTEs) – PAR 1469 (t) specifies a trigger for PTEs for Tier II tanks based on (a) failure of a source test within 48 months; or (b) more than one incident of failure of smoke and/or slot velocity measurements. If triggered, PAR 1469 requires permit applications for a PTE within 90 to 180 days, and construction of the PTE within 12 months. In general, the MFA does not believe that PTEs are necessary to control potential Tier II tanks, as we anticipate the use of buildings, housekeeping and BMPs would be sufficient control measures. As we have noted, the use of PTEs can also be very costly and difficult to implement, especially for facilities that were not originally designed nor constructed to accommodate PTEs for existing tank operations. Due to a small margin of failure and issues noted above for smoke and slot velocity testing requirements, it is too easy for a PTE to be triggered under the proposed rule. For all these reasons, the MFA requests that a PTE on-ramp requirement be removed from the proposed rule.

6-18

(12) Notification of Incidents – PAR 1469 (p)(4)(A) requires a regulated facility to notify the AQMD within “one hour” of any failed smoke test, failed source test, exceedance of a permitted ampere-hour limit or malfunction of a non-resettable ampere-hour meter. Further, PAR 1469 (p)(4)(B) requires corrective action and a written report within seven (7) days of notification. The MFA believes these proposed notification requirements are redundant, as existing AQMD Rule 430 already covers the reporting of such incidents that result in rule or permit violations.

6-19

(13) Parametric Monitoring – PAR 1469 (m)(1)(D) adds a new requirement that the operator “shall ensure any velocity within 10 feet” of a Tier II tank with an add-on control device is “less than one-tenth of the collection slot velocity as specified in the most recent successful source test.” The MFA requests that this proposed requirement be removed as it is unclear what purpose it serves. Moreover, due

6-20

Wayne Nastri, SCAQMD - Proposed Amended Rule 1469
 November XX, 2017

to its vagueness, the requirement would be subject to wide interpretation by AQMD enforcement and likely lead to NOV's.

6-20
 (cont'd)

(14) Surface Tension Testing – PAR 1469 (o)(4)(D) proposes a “daily” surface tension test for 20 consecutive days, and then every 3rd day thereafter, provided there is no violation of surface tension requirements. As noted previously, the MFA opposes such rigorous testing frequency since the current requirement of weekly surface tension testing is sufficient to ensure compliance. Moreover, there is insufficient data which warrants a more frequent testing requirement.

6-21

(15) Housekeeping – The MFA supports housekeeping measures for applicable tanks under the amended rule with few exceptions. However, the MFA opposes daily cleaning of applicable tanks and operational areas, as currently proposed in PAR 1469 (f)(4), as this places an undue burden on metal finishers. The current cleaning requirement is once per week, which we believe is sufficient housekeeping for applicable operations.

6-22

(16) Water Spraying – The MFA supports Best Management Practices (BMPs) for applicable tanks under the amended rule with few exceptions. Regarding the proposed limitations on using water sprays as currently proposed in PAR 1469 (g)(2), the MFA does not believe such limitations are necessary. Given the water spray typically occurs over rinse tanks, and that neither the parts nor rinse tank will have significant amounts of chrome laden liquid.

6-23

(17) Compressed Air Cleaning or Drying – Regarding the proposed limitations on using compressed air cleaning or drying within 15 feet of a Tier I or Tier II tank as currently proposed in PAR 1469 (g)(7), the MFA does not believe such limitations are necessary. At this point in the process, any residual rinse water on finished parts will have negligible amounts of hexavalent chrome, if any.

6-24

(18) Add-on Control Devices for Tier II Tanks – PAR 1469 (h)(4) specifies add-on control devices for Tier II tanks, and proposes a hex chrome emission limit which is to be determined. As noted above, the MFA questions the need for add-on control devices for Tier II tanks, based on the limited and inconsistent emission data collected for chrome tanks and rooftop vents. Irrespective, if an emission limit will be adopted, the MFA opposes an emission limit for Tier II tanks that would be lower than the current hex chrome emission limits specified by Table 1, which are currently applicable to existing tanks. The current state of pollution control technology has not significantly changed since the prior amendments to Rule 1469, and therefore any lower emission limits would not be justified.

6-25

The MFA and its representatives look forward to continued discussions on the amended rule with the AQMD. Thank you and we look forward to your response.

Sincerely,

Wesley Turnbow
 President

cc: Barry Groveman, Musick Peeler
 Ryan Hiete, Musick Peeler
 Susan Nakamura, SCAQMD (via email only)
 Kurt Wiese, SCAQMD (via email only)

Responses to Metal Finishing Association of Southern California (MFASC) Comment Letter, submitted 11/XX/17

- 6-1 Response: Please see Response to Comment 1-1.
- 6-2 Response: Please see Response to Comment 1-2 and 1-12.
- 6-3 Response: Please see Responses to Comment 1-7 and Comment 2-3. The use of 1 ng/m³ in recent Orders for Abatement were established based on the impacts of the subject facilities' hexavalent chromium emissions on the nearest sensitive receptors. PAR 1469 does not include such a standard.
- 6-4 Response: PAR 1469 applies to facilities performing chromium electroplating and chromic acid anodizing. Proposed rule requirements are specific to tanks at these facilities. If facilities that do not perform chromium electroplating or chromic acid anodizing have process tanks that contain chromium, these other facilities are not subject to the requirements of PAR 1469. However, they are subject to Rule 1426, and under a future rulemaking for PAR 1426, additional requirements may be needed.
- 6-5 Response: PAR 1469 includes a definition for building enclosure under paragraph (c)(11). The language regarding breaks, gaps, cracks and deterioration was removed from the definition.
- 6-6 Response: Please see Response to Comment 2-1.
- 6-7 Response: Please see Response to Comment 2-6.
- 6-8 Response: The comment refers to Tier II Tanks. Most of these tanks are now considered Tier III Tanks, with an intermediate designation of Tier II for tanks that meet the definition of paragraph (c)(58). Please see Response to Comment 2-7.
- 6-9 Response: The prohibition on air sparging that was a part of the first proposal for PAR 1469 has been removed.
- 6-10 Response: The requirements for freeboard height have been removed from PAR 1469.
- 6-11 Response: The concept for the requirement for a 3.5% threshold for openings as a percentage of building envelope is based on EPA Method 204. PAR 1469 requires the lower 3.5% threshold, relative to the 5% allowance for a PTE under EPA Method 204, since building enclosures are not required to be kept under negative air pressure and vented to APC systems. PAR 1469 requires housekeeping and best management practices such as limiting cross-draft and prohibiting openings directly facing the nearest sensitive receptor, excluding schools, within 1,000 feet and directly facing the nearest

school within 1,000 feet to minimize exposure to sensitive populations in nearby communities.

6-12 Response: Paragraph (e)(3) has been modified to allow the requested flexibility as allowed under paragraph (e)(2). Additional clarification has been added under subdivision (e) to specifically state that the provisions apply to building enclosures where Tier II or III Hexavalent Chromium Tanks are operated. Paragraph (e)(3) requires enclosure openings that directly face the nearest sensitive receptor, excluding schools, within 1,000 feet and directly face the nearest school within 1,000 feet to be closed.

6-13 Response: The proposal has been revised to allow openings that are not within 15 feet from a Tier II or III Tank. PAR 1469 requires closure of all enclosure openings in the roof that are located within 15 feet from the edge of any Tier II or Tier III Hexavalent Chromium Tank, except enclosure openings in the roof that are used to allow access for equipment or parts, or provide intake air or circulation air for a building enclosure that does not create air velocities that impact the collection efficiency of a ventilation system for an add-on air pollution control device. Tier I Tanks are not subject to the requirements of subdivision (e). The modified language for these requirements is included in paragraph (e)(4).

As an alternative to permanently closing openings, facility owner/operators have the option of venting those openings through HEPA controls.

6-14 Response: Please see Response to Comment 6-13. PAR 1469 only requires that roof openings within 15 feet of the edge of a Tier II or III Hexavalent Chromium Tank be closed or equipped with HEPA filtration to prevent hexavalent chromium emissions. During site visits to plating and anodizing facilities, staff observed steam emitting from hexavalent chromium tanks that escaped building enclosures through overhead rooftop vents, thus serving as a source of hexavalent chrome emissions. The SCAQMD staff consulted with CAL-OSHA, and it was determined that no requirement in PAR 1469 conflicts with a requirement of OSHA or CAL-OSHA. PAR 1469 includes a provision that allows facilities to implement alternative requirements to closing doors and other building enclosure provisions if PAR 1469 conflicts with OSHA or CAL-OSHA requirements for worker safety.

6-15 Response: Since the comment was submitted, paragraphs within subdivision (e) have been renumbered. Paragraphs (e)(5) and (e)(6) have been modified to add clarity. Paragraph (e)(5) references repairs for a breach. The proposal includes a definition for building enclosure under paragraph (c)(11). Provisions to inspect the building enclosure for breaks, cracks, gaps, and deterioration have been removed from PAR 1469.

- 6-16 Response: Source testing requirements have been modified since this comment was received. PAR 1469 has been changed to require a subsequent source test after the initial source test every 60 months (five years) for facilities with permitted throughput of more than 1,000,000 amp-hrs/yr and every 84 months (seven years) for facilities with permitted throughput of less than 1,000,000 amp-hrs/yr, provided all capture efficiency tests conducted by the owner or operator within 48 months of the most recent successful SCAQMD-approved source test did not result in a failed measurement, requiring a tank to be shut down and all applicable inspection and maintenance requirements (specified in Appendix 4) were conducted. PAR 1469 allows the use of a source test conducted after September 1, 2015 to be used to demonstrate compliance with the initial source test requirement. In addition, an emissions screening test is allowed in lieu of a full source test, if the previous source test was conducted after January 1, 2009.
- 6-17 Response: Please see Response to Comment 2-12.
- 6-18 Response: Please see Response to Comment 1-11.
- 6-19 Response: Please see Response to Comment 2-13.
- 6-20 Response: The referenced subparagraph has been removed from the PAR 1469 rule proposal.
- 6-21 Response: Please see Response to Comment 2-15.
- 6-22 Response: Please see Response to Comment 1-9.
- 6-23 Response: Please see Response to Comment 1-10.
- 6-24 Response: Please see Response to Comment 2-18.
- 6-25 Response: Please see Response to Comment 2-20.

VERNE'S CHROME PLATING, INC
1559 W. EL SEGUNDO BLVD.
GARDENA, CALIF. 90249

Neil Fujiwara
 AQMD

You invited me to call you, to discuss my concerns about upcoming changes with rule 1469. I thought it was better put in writing, for your consideration.

I am probably the smallest decorative chrome plating shop in your control area. I have one small plating line consisting of 1 cleaning tank, 1 copper, 1 nickel, and 1 chrome tank. I also have the necessary strip and water tanks to make it work. That's it. My entire facility is in a 50 foot by 60 foot building. We are in your less than 20,000 amp-hour per year category for the chrome tank, using only a fraction of that!

Starting in 1980 I once peaked at 8 full time employees. This small shop is still providing a living for 3 families, but just barely now. I hope you will be making exceptions for small existing business like mine.

My 3 main concerns are as follows:

1. Ventilation restrictions.....The cleaner tank and the nickel tank consist of about 1300 gallons, at about 150 degrees. They give off a lot of heat and harmless steam. To make the workplace bearable, 2 small fans move air out the back of the building, drawing cooler dry air in the front. If you take that away, the heat and humidity will make working here impossible. Cal-OSHA has fined me for not wearing goggles, armpit length gloves, aprons, and full body coverings. We will be dropping from heat exhaustion here. You want no ventilation within 30 feet of the chrome tank. My entire plating area is 19 by 48 feet. Everything is within 30 feet of everything.

7-1

2. A cover on the chrome tank....If you want a cover when NOT in use, no problem, but what is the point of that? I can not operate the tank with a cover on it. A decorative shop puts 10 parts in the chrome tank then turns on the current. The smallest parts come out first, then power is increased, then mid size parts come out, then power is increased, then larger parts come out, then power raised to full on the last part. That will throw plating in a low current density area. This can NOT be done under a cover. I can't do parts one at a time, covering and uncovering with each tiny part.

7-2

3. Raised platforms changed to fiberglass.I have wood walkways, covered in roofing paper. I am a 100% dry floor shop with NO spillage of solutions (chrome or otherwise) on my floors or wood platforms. Any inspector can easily see this. Parts from my chrome tank go directly to a drag out tank adjacent to the chrome tank with plastic shielding preventing even a drop from hitting the floor, or wood platforms. Forcing a change over to fiberglass will accomplish nothing, and be a huge expense, not warranted by the minimal income this business can continue to produce.

7-3

Please consider restrictions on all new construction, but allow the few of us left in this business to continue for the little time we have left. Attrition will solve your decorative chrome plating problem in just a few more years.

7-4

Ronald L Verne
Verne's Chrome Plating, Inc.



Responses to from Verne's Chrome Plating, Inc Comment Letter (submitted 12/1/17)

- 7-1 Response: Please see Response to Comments 6-13 and 6-14. Openings that would provide ventilation within the building include the allowance for openings totaling 3.5% of building enclosure envelope. PAR 1469 also includes a provision that allows facilities to implement alternative requirements to closing doors and other building enclosure provisions if PAR 1469 conflicts with OSHA, CAL-OSHA or local municipal code requirements for worker safety.
- 7-2 Response: Chrome plating tanks are already required to be controlled by an air pollution control technique such as the use of chemical fume suppressants or add-on air pollution controls. Tank covers are allowed as a control option for Tier II Tanks. However, electroplating and chromic acid anodizing tanks are required to be controlled by an air pollution control technique as identified in PAR 1469.
- 7-3 Response: PAR 1469 does not require that walkways be constructed of fiber glass and allows for walkways that are made of wood.
- 7-4 Response: SCAQMD typically establishes requirements for both new and existing facilities in order to address emissions from both sources. PAR 1469 applies to both existing and new facilities.

From: Bruce Greene [<mailto:Bruce.Greene@hmfgroup.com>]
Sent: Friday, December 1, 2017 3:23 PM
To: Eugene Kang <EKang@aqmd.gov>
Cc: Susan Nakamura <SNakamura@aqmd.gov>
Subject: Hixson Metal Finishing - PAR 146B Comments

Eugene,

Please see attached for Hixson's comments on PAR 1469. Your consideration of these would be greatly appreciated.

If you have any questions or comments, please feel free to contact me.

Thanks

Bruce Greene
Environmental/Health & Safety

Hixson Metal Finishing
829 Production Place
Newport Beach, CA 92663
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Supporting Flight Excellence

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PAR 1469 Analysis

(c)(30) – Fugitive Emission – The definition indicates any emission that could “Potentially” contain hex chrome. Technically that could be almost anything. Concrete dust, concrete mix, dirt, diesel emissions, etc. As this is used throughout the rule this could potentially led to inspectors widening the scope to the entire facility or even construction areas. This has been addressed in the revised rule.

8-1

(c)(35) – Low Pressure Spray Nozzle – If contained within a tank (spray rinse tank) this should not be required. A new definition of a Spray rinse tank may be required if this is exempted. A spray rinse tank is a tank that uses one or more nozzles to pre-rinse parts to remove a majority of the plating/anodizing solution from the parts. The parts are then rinsed in an immersion rinse tank.

8-2

(c)(56) – Tank Process Area – Would a PTE be considered the nearest wall of a building enclosure. We have a Tier II tank that is within 1 foot of the wall of a PTE. If that wall is not considered a Building Enclosure wall the tank process area would extend 30 feet out into a racking and oven drying area. If the PTE is considered a building wall, call it be added to the definition?. This was been clarified to include a PTE

8-3

(c)(62) – Weekly – Can weekly be changed to once per calendar week?. This has been changed to calendar week

8-4

(d)(3) – Air Sparging – We feel that if the tanks are vented to air pollution controls and within a PTE with negative air, the prohibition on air sparging should be lifted. – This has been changed to allow air sparging if vented to a pollution control device.

8-5

(d)(4) – Freeboard Height – We feel that the freeboard height should be allowed to be at 4 inches if the tanks are ventilated to air pollution controls and are within a PTE with negative air. – No exception for PTE has been added. Also, has there been a determination as to the 6-8 inches

8-6

(e)(1), (e)(2), and (e)(3) – These requirements should be waived if all Tier I and Tier II processing tanks are in a PTE with negative air. – We still feel that these requirements should be waived if the tanks are within a PTE. Would not the ultimate goal to be that all processing tanks are contained within a PTE. Would this not provide an incentive to do so.

8-7

(e)(8) – OSHA requirements. There are some additional requirements such as building and fire codes that may also have to be addressed. These should be added if possible.

8-8

(f)(1) – Storage – I think the intent of this section was to make sure that the chromic acid power/flake is stored in closed containers in an enclosed building/structure but as written this could make all materials that contain chromium (Paint, Concrete mix, Paint Racks, Paint filters, Stainless steel, even painted/processed parts awaiting shipment etc.) be required to be stored in a closed container inside a enclosed storage area. This could, technically, allow an inspector to expand the scope of the rule to many other processes.

8-9

(g)(1)(b) – Dragout – In manually operated process line some dragout will always be present. We have installed drip trays between the tanks that will catch all dragout and return it to the tanks. We have also installed catch pans in the walkways that would catch any dragout that may fall to the floor. These catch pans are equipped with drains that lead to our waste treatment system so that can be easily cleaned at the end of each shift. Would this setup be in ~~compliance~~ compliance with this rule section? Also, this section seems to contradict sections (f)(3) and (f)(4) that gives a 1 hour maximum for clean up and a daily clean up requirement. – Drip tray or containment device has been added.

8-10

(g)(7) – Use of compressed air – This requirement should be exempted if the tanks and drying operation are within a PTE with negative air. – PTE exemption has been added

8-11

(h)(4)(A) – What if the scrubbed tanks are a combination of electrolytic and non-electrolytic? What standard applies? Would this require 2 separate source tests?

8-12

(h)(4)(A)(iii) – mg/hr – This is still to be determined. Any idea on the requirement? – Added a requirement of 0.20 mg/hr. This limit does not seem to take a number of factors into account such as tank size (square feet of surface area), the CFM of the pollution control equipment or the number of tanks being vented. Would it be better to determine a limit based on mg/dscf.

8-13

(h)(4)(B)(ii) – The section has a reference back to the same section, I think this is a typo and should reference back to (h)(4)(B)(i)?

8-14

(h)(4)(C) – This section seems to allow an exemption for scrubbers on tier II tanks as long as it meets the 0.0015 mg/amphr or 0.20 mg/hr. Is this the case?

8-15

(h)(5) – Ventilation Design – Our control equipment has already been designed, permitted and installed. We assume that our systems, as long as they pass source test would be in compliance with this requirement. – Can we add in this section “or if approved by the Executive Officer”

8-16

(k)(2)(B) – Source Testing for covered Tier II tanks – This seems to contradict section (h) that indicates that you need to prove that emissions are below 0.0015 mg/amphr or 0.20 mg/hr. How can you accomplish this without a initial source test?

8-17

(k)(3)(A) – Source Tests – Could the 36 month time period be extended if all process tanks are contained in a PTE with negative air? Since we have completed source tests prior to adoption of the rule when would the next 36 months be? On the anniversary date of the source test, 3 years after we receive results or 3 years after adoption of PAR 1469? – Can we please get some more information when the clock starts ticking on the 36 months? We should have all of our source tests complete by rule adoption. Is the timeline 36 months after rule adoption or 36 months from the testing date.

8-18

(k)(3)(B) – Source Tests – Since we have already completed source testing that was approved by the district, we assume that we would be in compliance with this section? – Can “or if approved by the Executive Officer” be added

8-19

<p>(k)(3)(C)(iii)(C) – These emission standards have not yet been determined – Please see section (h)(4)(A)(iii) above</p>	8-20
<p>(k)(4)(A) – Source Test Protocol – Sorry not sure what this section means. Can we please discuss?</p>	
<p>(k)(6)(A)(ii)(Table 4) – Push Air Manifold Pressure TBD. Any additional info? – This appears that it will be tied to the source test. Is this correct?</p>	8-21
<p>(m)(1)(C)(Table 5) – This means a gauge needs to be installed at each push header? Still not totally clear but this seems to mean that a pressure gauge will have to be installed in each push header and an anemometer will have to be installed at some point in the duct work of the pollution control system. Is this correct?</p>	8-22
<p>(m)(1)(D) – How is this to be measured? We also feel this requirement should be waived if the processing tanks are within a PTE with negative air. – Not Addressed. We would still not be able to pass this section of the rule in general plate without removing the tank or dialing back the CFM on the PTE. We still feel there should be an exemption for a PTE</p>	8-23
<p>(n)(2) – Indicates mechanical fume suppressants and refers to table 4-2 of appendix 4. There is no requirement in the table for pollyballs. There is a requirement in section (o)(4)(E) of the rule and this requires daily inspection</p>	8-24
<p>(o)(4)(C) – Pressure Measurements – What applicable pressure measurements is this referring too? – Table 5 subdivision (m) – Push air. Velocity and Static pressure of scrubber. Could it be added that we could measure FPM in order to comply?</p>	8-25
<p>Appendix 3 – Ongoing Compliance Report – Will a new report be provided by AQMD? – Yes</p>	8-26
<p>Appendix 4 – Table 4-1, Collection Slots and Air Manifolds - -There is still a requirement for all the holes in the push air manifold to be tested once per month with an anemometer. I though this was was changed for a gauge to measure the header and additional measurements every 180 days. I think that this applies to the velocity of the inlets on the hoods for the scrubber. Not the individual holes in the push air header. Is this correct?</p>	8-27
<p>Appendix 8, section 3 – Tesing Conditions – The smoke test now has to be conducted with parts being processed in the tank. Can this be stated in a way that would allow for test panels, racks or scrap parts can be used. Actual parts may not always be available.</p>	8-28
<p>Appendix 8 – Smoke tests – Does AQMD have a recommendation on the smoke devise to use since the Tel-Tru sticks and no longer available. We have been using the Drager Air Flow Tester. Will this be compliant? – No information was provided.</p>	8-29

Responses to Hixson Metal Finishing Comment Letter, submitted 12/1/17

- 8-1 Response: The definition for fugitive emissions has been modified under PAR 1469 paragraph (c)(28), as follows: “. . .*emissions generated from the operations at the owner or operator’s facility, including solid particulate matter, gas, or mist, potentially containing hexavalent chromium that becomes airborne by natural or man-made activities, excluding particulate matter emitted from an exhaust stack.*”
- 8-2 Response: The definition of low pressure spray nozzles is included in PAR 1469 paragraph (c)(34) as “*a water spray nozzle capable of regulating water pressure to 35 pounds per square inch or less*” and the allowable usage for low pressure spray nozzles is included under paragraph (g)(2) as follows: “. . .*the owner or operator of a facility that conducts chromium electroplating or chromic acid anodizing operations shall not spray rinse parts or equipment that were previously in a Tier II or Tier III Hexavalent Chromium Tank unless the parts or equipment are fully lowered inside a tank where the overspray and the liquid is captured inside the tank ...*”.
- 8-3 Response: A tank process area was clarified under paragraph (c)(55) to be: “. . .*the area in the facility within 15 feet of any Tier I, Tier II, or Tier III Hexavalent Chromium Tank(s) and any associated process tanks, or to the nearest wall in a building enclosure or permanent total enclosure, whichever is closer*”.
- 8-4 Response: The definition for weekly is: “. . . *at least once every seven calendar days*”. PAR 1469 does not amend this definition.
- 8-5 Response: The prohibition of air sparging has been removed from PAR 1469.
- 8-6 Response: The requirements for freeboard height have been removed from PAR 1469.
- 8-7 Response: The requirements of paragraph (e)(1), in particular the allowable enclosure openings as a percentage of the building envelope are applicable to both building enclosures and PTEs. The requirements of paragraphs (e)(2) and (e)(3) are applicable only to building enclosures; not to PTEs. Please also see Responses to Comments 18-6 and 18-7.
- 8-8 Response: Paragraph (e)(6) has been modified to recognize possible conflicting requirements by OSHA, CAL-OSHA or other municipal codes or agency requirements directly related to worker safety. This modified language requires notification to the Executive Officer of requirements “. . . *that cannot be complied with due to conflicting requirements set forth by the federal Occupational Safety and Health Administration (OSHA), California Division of Occupational Safety and Health (CAL-OSHA), or other municipal codes or agency requirements directly related to worker safety*”.

- 8-9 Response: The requirement to store other substances that may contain hexavalent in a closed container in an enclosed storage area when not in use is an existing requirement. PAR 1469 does not amend the requirement. This requirement only pertains to materials that are used in the process of chromium electroplating or chromic acid anodizing, not to concrete or stainless steel.
- 8-10 Response: Paragraph (g)(1) has been revised to allow liquid to be captured by a drip tray or other containment device. The requirement under paragraph (f)(3) requires spills to be cleaned up or contained using a drip tray within one hour. The commenter's arrangement of drip trays and catch pans would be sufficient to contain spills that fall on the drip trays and are directed to the catch pans. However, spills that are not captured by the drip trays are required to be cleaned up within one hour. The language of paragraph (f)(4) requires surfaces potentially contaminated with hexavalent chromium to be cleaned weekly.
- 8-11 Response: Paragraph (g)(6) has been reworded to read: "*...the owner or operator shall not conduct compressed air cleaning or drying operations within 15 feet of any Tier II or Tier III Hexavalent Chromium Tank(s) unless: A) A barrier separates the compressed air cleaning or drying operation from the compressed air cleaning or drying operation. A tank wall may function as a barrier as long as parts are compressed air cleaned or dried below the lip of the tank; or B) Compressed air cleaning or drying operations are conducted in a permanent total enclosure.*" Therefore, compressed air cleaning is allowed in a PTE.
- 8-12 Response: PAR 1469 requires that existing facilities that vent both electrolytic and non-electrolytic tanks to an air pollution control device to comply with either a 0.0015 mg/amp-hr or 0.0011 mg/amp-hr limit based on whether the facility is existing or new. An owner or operator would need to only conduct one source test per air pollution control device.
- 8-13 Response: PAR 1469 clause (h)(4)(A)(iv) was modified based on stakeholder feedback to allow an emission rate based on the surface area of tanks for larger ventilation systems. The surface area is based on Tier III Tanks and other tanks required to be controlled by the SCAQMD Permit to Operate.
- 8-14 Response: Clause (h)(4)(B)(ii) references subparagraph (h)(4)(B), which specifies the schedule for when permit applications for add-on air pollution control systems must be submitted.
- 8-15 Response: PAR 1469 allows owners or operators to demonstrate that non-electroplating or non-anodizing Tier III Tanks uncontrolled emissions are less than the emissions limits specified in paragraph (h)(4). An owner or operator who successfully demonstrates that uncontrolled emissions are less than the applicable emission standards are not required to vent the emissions

from the subject tank to an add-on air pollution control device. This does not include chromium electroplating or chromium anodizing tanks that will be required to comply with paragraph (h)(2) or (h)(3).

- 8-16 Response: The capture velocity specified in the most current edition (i.e., at the time the SCAQMD permit application was deemed complete by SCAQMD) of *Industrial Ventilation, A Manual of Recommended Practice for Design*, are considered to be the minimum allowable velocity for design of an air pollution control system. As such, Executive Officer discretion is not necessary in this paragraph.
- 8-17 Response: An initial source test is required pursuant to subparagraph (k)(3)(A).
- 8-18 Response: Please see Response to Comment 2-11.
- 8-19 Response: A source test which was previously approved by SCAQMD may be used satisfy the initial source test requirement if conducted after January 1, 2015.
- 8-20 Response: The emission limits in the comment are identified in subdivision (h). Please also see Response to Comment 8-13.
- 8-21 Response: The allowable push air manifold pressure is based on the pressure range determined during the source test.
- 8-22 Response: PAR 1469 will require a static pressure gauge to monitor the push manifold pressure. A flow meter or static pressure gauge will be required in the duct work of the air pollution control system to monitor static pressure or airflow velocity.
- 8-23 Response: The requirement for a minimum air velocity within 10 feet of a hexavalent chromium tank has been removed from PAR 1469. Regarding the comment on an exemption from parameter monitoring within a permanent total enclosure (PTE), PAR 1469 requires all parameter monitoring irrespective of whether the tank is located within a PTE.
- 8-24 Response: The requirements of Table 4-4 are specific to Inspection and Maintenance requirements for sources using chemical or mechanical fume suppressants.
- 8-25 Response: PAR 1469 allows pressure to be measured in inches of water column and airflow velocity measured in actual cubic feet per minute.
- 8-26 Response: The current requirements of new Ongoing Compliance Status and Emissions Reports are provided in Appendix 3 of PAR 1469.
- 8-27 Response: The requirements for Inspection and Maintenance Requirements are shown in the table below in Response to Comment 8-28.

8-28 Response: Table 4-2 in Appendix 4 has been modified to require the tank to be tested during typical operating conditions.

Control Technique/Equipment	Inspection and Maintenance Requirements	Frequency
Temperature Gauge	1. Install and maintain per manufacturer's specification at each Tier I, II, and III Hexavalent Chromium Tank.	1. Per manufacturer.
	2. Calibrated or confirmed to be accurate.	2. Once per year.
Collection Slots and Push Air Manifolds for Push-Pull Systems	1. Visually inspect slots and push air manifolds to ensure that there are no obstructions or clogs.	1. Once per week.
	2. Clean slots or push air manifolds.	2. Once every 180 days.
	3. Measure slot velocity of each slot and pressure at each push air manifold using a hot-wire anemometer, vein anemometer, or approved device	3. Once every 180 days.
Air Flow Gauges	Install and maintain per manufacturer's specifications.	Per manufacturer

8-29 Response: Staff does not make a recommendation for the smoke device to use during smoke tests.



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December 8, 2017

Wayne Nastri, Executive Director
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Re: Proposed Amended Rule 1469, Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations

Dear Mr. Nastri,

The Los Angeles County Department of Public Health (DPH) appreciates this opportunity to comment on the Proposed Amended Rule 1469 regarding hexavalent chromium emissions from hexavalent chromium electroplating and chromic acid anodizing operations. We support the South Coast Air Quality Management District's (SCAQMD) policy and enforcement efforts over the last year to reduce chromium emissions in the Los Angeles Basin. In October 2016, SCAQMD discovered that Anaplex, a chromium electroplating facility in the City of Paramount, was responsible for ambient chromium emissions up to 400 times higher than those reported for other urban areas in Los Angeles. SCAQMD and DPH coordinated their enforcement efforts to require Anaplex to reduce its chromium emissions to below 1 ng/m³. In this case, swift abatement action was necessary due to the well-known carcinogenicity of hexavalent chromium and proximity of residential areas. Hexavalent chromium compounds have been shown to cause lung cancer in humans when inhaled at high concentrations for long periods of time.

DPH is concerned that the potential for elevated hexavalent chromium emissions extends well beyond the borders of the City of Paramount and concentrates in communities already facing many other social, economic and environmental burdens. There are a total of 87 chromium electroplating and chromic acid anodizing operations with SCAQMD permits in Los Angeles County, and the majority of these are located in the most burdened areas of Los Angeles, as shown by the red shading in the attached map. The Proposed Amended Rule 1469 presents a golden opportunity for facilities to institute the necessary emission controls and prioritize the health of surrounding neighborhoods and

9-1

Page 2
December 8, 2017
Wayne Nastri, Executive Director

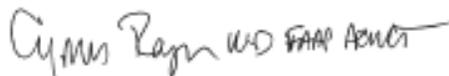
chromium workers. After review of the Proposed Amended Rule 1469, DPH recommends that SCAQMD revise the Rule to include the following requirements:

9-1
(cont'd)

- Consistent with recent European Union legislation, ban hexavalent chromium for decorative purposes. 9-2
- Periodic fence-line air monitoring to facilitate continued assessment of ambient hexavalent chromium emissions across Los Angeles County. 9-3
- Prior to using chemical fumes suppressants that do not contain perfluorooctanesulfonic acid (PFOS), which were banned in the Federal NESHAPs Rule, comprehensive toxicity assessments must be completed and demonstrate the safety of the proposed alternative chemicals. Available toxicity assessments by the Office of Environmental Health Hazard Assessment raised serious concerns about the safety of these chemicals (see attached). It is essential these alternative chemicals not be relied upon as a means to control emissions of hexavalent chromium in plating tanks unless and until their safety has been demonstrated. 9-4
- The current version of the proposed rule provides for additional protections for schools situated within 100 feet from a plating facility. While we support additional protections for schools and other sensitive land uses in proximity to plating facilities, we believe the distance of 100 feet is insufficient. These additional protections are warranted for any sensitive population in close proximity to emissions of hexavalent chromium. 9-5
- Establish a mandatory consultative process with the California Division of Occupational Safety and Health's (Cal/OSHA) to ensure adequate worker protection. 9-6

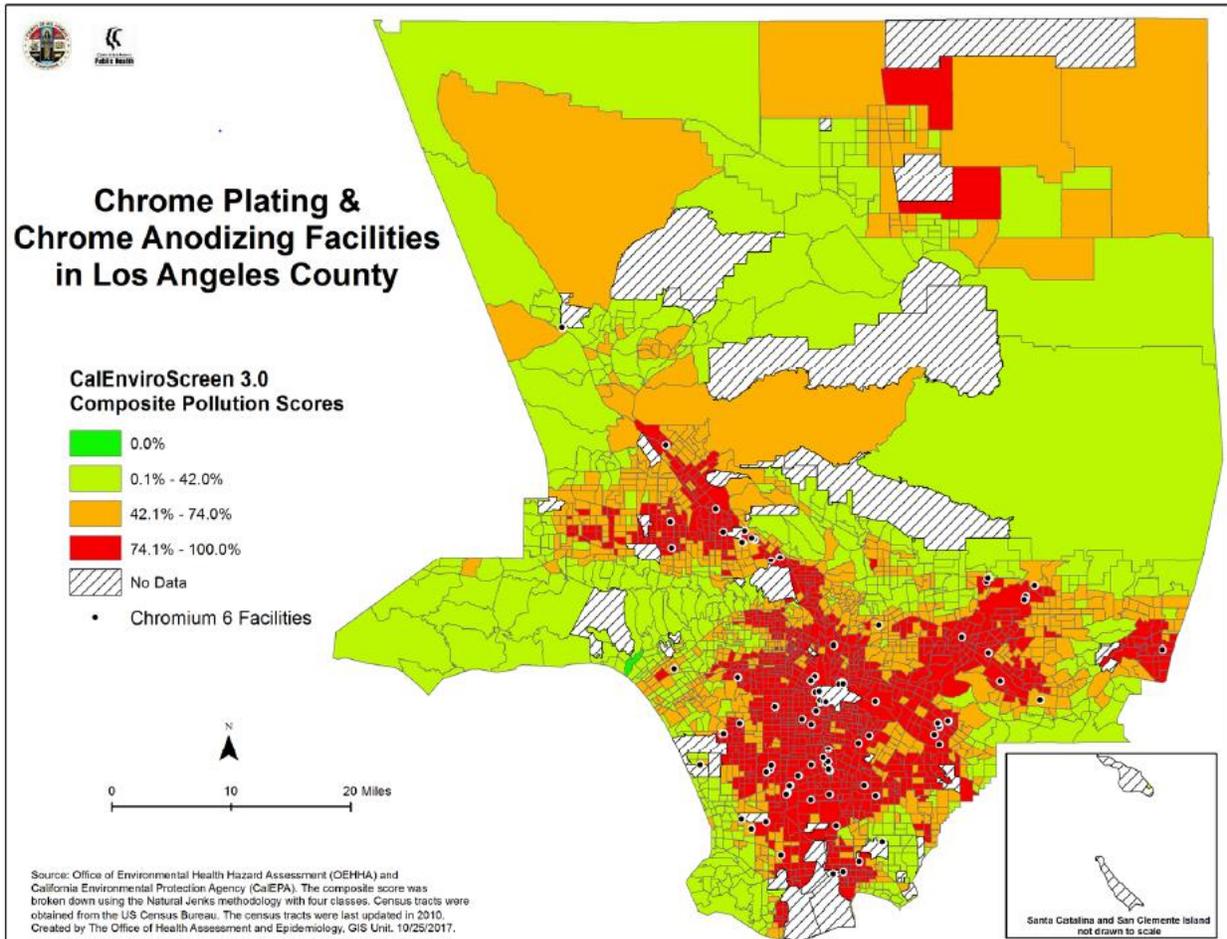
Considering both the toxicity of hexavalent chromium and the proximity of chromium facilities to Los Angeles County residents, we urge the SCAQMD to ensure that the Proposed Amended Rule 1469 requires the best technology available to prevent chromium emissions from impacting local air quality. 9-7

Sincerely,



Cyrus Rangan, M.D., F.A.A.P., F.A.C.M.T.
Director, Toxicology & Environmental Assessment
Environmental Health Division, Department of Public Health

Enclosures: (2)



**Responses to County of Los Angeles Department of Public Health (Cyrus Rangan)
Comment Letter, submitted 12/8/17**

- 9-1 Response: Implementation of PAR 1469 will reduce hexavalent chromium emissions from tanks that are currently not regulated. In addition, provisions for building enclosures, parameter monitoring, and periodic source testing will help to reduce exposure to hexavalent chromium to nearby communities. PAR 1469 includes limitations and restrictions for facilities located near sensitive receptors. Examples include:
1. Close any building enclosure opening that directly faces and opens towards the nearest:
 - a. Sensitive receptor, excluding schools, located within 1,000 feet; and
 - b. School located within 1,000 feet.
 2. Ensure a new facility is not located within 1,000 feet from the boundary of a sensitive receptor, a school under construction, or any area that is zoned for residential or mixed use;
 3. Expedited requirement to construct a permanent total enclosure (if triggered), if property line of the electroplating or anodizing facility is within 500 feet of the property line of any sensitive receptor or school; and
 4. Prior to approval of alternative compliance method for emissions control, demonstrate that the facility is at least 75 feet from a sensitive receptor.
- 9-2 Response: PAR 1469 incentivizes facilities that make an early commitment to phase out hexavalent chromium from their process by delaying requirements to install add-on air pollution controls on Tier III Tanks. If hexavalent chromium is phased out according to the approved phase-out plan, the facility will not incur costs for controls as they will no longer be required to install add-on air pollution controls. There are certain applications for decorative plating where it is necessary to use hexavalent chromium for quality or appearance, or to meet a customer specification tied to a long-term contract. The adoption resolution for PAR 1469 will have a commitment to conduct a study on alternatives to hexavalent chromium. Please refer to Chapter 1 for more information on the European Union's hexavalent chromium ban and see Response to Comment 3-8.
- 9-3 Response: Although ambient monitoring provisions are not included in PAR 1469, a separate rule for ambient monitoring is on SCAQMD's Rule Forecast for 2018. PR 1480 – Air Toxic Metals Monitoring will provide a comprehensive approach to monitoring of air toxics at all facilities emitting toxic air contaminants, not only hexavalent chromium emitting facilities. Therefore, it is more appropriate to consider monitoring within the context of PR 1480 instead of within PAR 1469. Please also see Response to Comment 1-7.

9-4 Response: Under the existing requirements of Rule 1469, certain facilities with low throughput are allowed to use a certified wetting agent chemical fume suppressant as the sole means of control instead of installing air pollution control equipment. PAR 1469 includes provisions which require SCAQMD and CARB to conduct tests to determine if these non-PFOS wetting agent chemical fume suppressants can be certified.

Beginning July 1, 2021, facilities may only add a wetting agent chemical fume suppressant that is certified based on a revised process conducted by SCAQMD and CARB. This date will allow sufficient time for facilities to implement alternatives, manufacturers to potentially reformulate chemical fume suppressants, and SCAQMD staff to certify the wetting agent chemical fume suppressant.

Staff has added a provision that the Executive Officer in consultation with CARB may approve an alternative to a wetting agent chemical fume suppressant that is as equally effective as a certified chemical fume suppressant pursuant to paragraph (1)(2) of PAR 1469. This approach will allow facilities to use an alternative to a wetting agent chemical fume suppressant if emissions testing conducted by SCAQMD demonstrates that the alternative is as equally effective as a certified wetting agent chemical fume suppressant. Additionally, the owner or operator of a facility that opts to use an alternative to a wetting agent chemical fume suppressant will be required to comply with conditions that are specified during the approval process.

The alternative to a wetting agent chemical fume suppressant would be available to only the smallest plating facilities that are currently allowed to use chemical fume suppressants. This approach will provide a cost savings, given that SCAQMD staff will conduct the necessary emissions testing. Also, similar to the use of certified chemical fume suppressants, no further emissions testing would be required, provided the operator complies with the conditions of the certification of the alternative.

PAR 1469 proposes to allow the continued use of certified wetting agent chemical fume suppressants during the revised certification process to protect workers in chromium electroplating and chromic acid anodizing facilities that may otherwise be exposed to emissions of hexavalent chromium from electrolytic tanks operated without APC systems. Chemical fume suppressants are a proven and highly effective method of reducing emissions from electroplating operations, thereby protecting workers from emissions of hexavalent chromium, a known human carcinogen.

The following documents submitted by the commenter as an attachment to the comment letter were considered during the rule development process:

1. Budroe, J. (2017, June 30). Toxicity of the Fume Suppressant Sodium Diamyl Sulfosuccinate [Letter to Robert Krieger].
2. Silva, R. M. (2015). *6:2 Fluorotelomer Sulfonate (FTS/FTSA) and Perfluorohexanoic Acid (PFHxA) Toxicity Review* (Office of Environmental Health Hazard Assessment). Sacramento, CA: OEHHA.
3. Silva, R. M. (2015). *Summary of Reproductive and Developmental Effects of Perfluorohexane Sulfonate (PFHxS)* (Office of Environmental Health Hazard Assessment). Sacramento, CA: OEHHA.
4. Silva, R. M. (2016). *6:2 Fluorotelomer Alcohol (FTOH) Toxicity Review (Office of Environmental Health Hazard Assessment)*. Sacramento, CA: OEHHA.

- 9-5 Response: PAR 1469 provides protections based on distance for both schools and sensitive receptors. For example, under paragraph (e)(3), facilities are required to close any building enclosure opening that directly faces and opens towards the nearest school that is located within 1,000 feet, as measured from the property line of the school to the building enclosure opening, except for the movement of vehicles, equipment or people. The same requirement applies to the nearest non-school sensitive receptor located within 1,000 feet.
- 9-6 Response: Mandatory consultations are not established in rules. However, staff has been in communication with Cal-OSHA in regard to issues such as indoor heat and the appropriate ventilation air required for chromium electroplating and chromic acid anodizing facilities. As a practice, staff communicated with Cal-OSHA as well as other agencies, as necessary, during the rulemaking process.
- 9-7 Response: Best available control technology for point source controls of hexavalent chromium from electroplating tanks, chromic acid anodizing tanks, and Tier III Tanks with the potential for significant emissions includes a collection hood under negative pressure, vented to air pollution control with a final control stage equivalent to HEPA controls or better. This is the level of control proposed by PAR 1469.

**VALLEY-TODECO, INC.**

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1Z 104 3RR 01 6907 6579

December 11, 2017

Mr. Neil Fujiwara
Planning, Rule Development and Area Sources
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

RE: Comments on SCAQMD Proposed Amended Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations

Dear Mr. Fujiwara:

Valley-Todeco, Inc. (Valley-Todeco) is pleased to submit the following comments on the November 17, 2017 preliminary draft rule language of South Coast Air Quality Management District's (SCAQMD) Proposed Amended Rule (PAR) 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations. Our California operations include a facility in Sylmar, California that would be directly impacted by PAR 1469.

Valley-Todeco is a wholly-owned subsidiary of Arconic Inc. (NYSE: ARNC). Arconic creates breakthrough products that shape industries. Working in close partnership with our customers, we solve complex engineering challenges to transform the way we fly, drive, build and power. Through the ingenuity of our people and cutting-edge advanced manufacturing techniques, we deliver these products at a quality and efficiency that ensure customer success and shareholder value.

Valley-Todeco is generally supportive of the SCAQMD's effort to develop an amended regulation to provide additional control of hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations to ensure that ambient air concentrations of hexavalent chromium remain protective of human health and the environment. We appreciate SCAQMD's continued interest in developing sound regulations that protect public health and the environment while minimizing unnecessary regulatory burdens on industry and offer the following comments to the SCAQMD for its consideration into the final amended Rule 1469.

1.0 Include a definition for buffing, grinding and polishing operations

PAR 1469 contains several requirements for buffing, grinding and polishing operations, including housekeeping requirements and best management practices. Valley-Todeco is concerned that, without a definition, the current interpretation of buffing, grinding and polishing activities and operations could be overly broad. For example, references to "clean, using an approved cleaning method, floors within 20 feet of a buffing, grinding, or polishing workstation" and "conduct all buffing, grinding, and polishing operations within a building enclosure" (emphasis added) could be interpreted that activities unrelated to chromium electroplating and chromic acid anodizing would be subject to these requirements, e.g. a maintenance area grinder for grinding a piece of angle iron or the grinding on a weld that has just been completed. These examples are clearly not within the stated purpose of the rule.

10-1

Therefore, Valley-Todeco recommends that PAR 1469 be revised by adding a definition for buffing, grinding, and polishing operations to read as follows:

BUFFING, GRINDING, OR POLISHING means the buffing, grinding or polishing of parts that have gone through a process that includes one or more Tier I or Tier II Hexavalent Chromium-Containing Tanks.

2.0 Include a definition for associated process tank

PAR 1469 makes numerous references to 'associated process tank' but this term has not been defined. Associated process tanks are considered within the definition of a Tank Process Area, must be operated within a building enclosure under section (e), and are included in the BMP requirements of section (g). The Preliminary Draft Staff Report identifies several types of non-electroplating and non-anodizing tanks that can contain elevated levels of hexavalent chromium that could become a source of significant emissions¹. Such tanks have been addressed in PAR 1469 through the 1000 ppm hexavalent chromium concentration threshold for Tier I and Tier II tanks and Valley-Todeco supports this. However, there are other tanks identified in the Preliminary Staff Report (Tables 1-1 through 1-4) that are associated with the overall process but which contain no or very low concentrations of hexavalent chromium and could not be a significant source of hexavalent chromium emissions. Some associated process tanks may even be located away from the main area of tank operations. Placing the same requirements on these tanks as Tier I Hexavalent Chromium-Containing Tanks would be an undue burden for little or no environmental benefit.

10-2

Valley-Todeco believes that PAR 1469 needs to include a definition of the term 'associated process tank' to exclude those tanks that are not located near a Tier I or Tier II Hexavalent Chromium Containing Tanks where there would be a higher potential for cross contamination, i.e. not located within a tank process area.

Therefore, Valley-Todeco recommends that PAR 1469 be revised by adding a definition for associated process tank to read as follows:

¹ Preliminary Draft Staff Report, Proposed Amended Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations, November 2017, p. 1-11.

ASSOCIATED PROCESS TANK means a tank that is located within a Tank Process Area but which is not a Tier I or Tier II Hexavalent Chromium-Containing Tank.

10-2
(cont'd)

3.0 Clarify the operation of devices in building enclosure openings that exhaust to the outdoor air

Section (e)(5) of PAR 1469 prohibits the operation of any device in a building enclosure opening in the roof that pulls air from the building enclosure and exhausts to the outside air unless the air is vented to a HEPA filter equipped air pollution control device. Valley-Todeco believes that the requirement needs to be clarified to specifically exclude air conditioning systems that pull air from the building enclosure and return air back to the building enclosure.

10-3

Therefore, Valley-Todeco recommends that section (e)(5) of PAR 1469 be revised to read as follows:

- (5) Prohibit operation of any device in any building enclosure opening in the roof that pulls air from the building enclosure to the outdoor air unless the air is vented to an add-on air pollution control device that is fitted with HEPA filters. Roof-mounted air conditioning systems that return air back to the building enclosure are excluded from this requirement

4.0 Clarify the areas subject to daily cleaning

Section (f)(4) of PAR 1469 requires daily cleaning for surfaces within an enclosed storage area, open floor area, walkways around Tier I and Tier II Hexavalent Chromium-Containing Tanks, as well as any other surfaces that may become potentially contaminated. While 'enclosed storage area' is defined and 'walkways around the Tier I and Tier II Hexavalent Chromium-Containing Tanks' can be readily interpreted, the term 'open floor area' is not defined in PAR 1469 or described in the Preliminary Draft Staff Report, and can be interpreted differently by different people. To avoid potential compliance issues as to what constitutes 'open floor area', Valley-Todeco believes that this term needs to be clarified within the description of the housekeeping requirements of section (f)(4).

10-4

Therefore, Valley-Todeco recommends that section (f)(4) of PAR 1469 be revised to read as follows:

- (4) Clean, using an approved cleaning method, surfaces within the enclosed storage area, open floor area within the tank process area, walkways around the Tier I or Tier II Hexavalent Chromium-Containing Tank(s), or any surface potentially contaminated with hexavalent chromium or surfaces that potentially accumulate dust at least daily;

5.0 Clarify that the edition of ACGIH's Industrial Ventilation manual that must be adhered to is the edition that is the most current edition at the time that a permit application for air pollution control equipment is deemed complete by SCAQMD

10-5

Section (h)(5) of PAR 1469 requires that air pollution control techniques are operated at the minimum hood induced capture velocity specified in the most current edition of

the *Industrial Ventilation, A Manual of Recommended Practice for Design*, published by the ACGIH. Valley-Todeco is concerned that the requirement as currently written could result in the minimum capture velocity becoming a moving target where a facility would have to purchase (not free!) a copy of each new edition of *Industrial Ventilation, A Manual of Recommended Practice for Design* to determine if the minimum capture velocity requirement has changed. Furthermore, as written the PAR would appear to require facilities to upgrade the ventilation system and controls if there is a change to the capture velocity requirements specified in the Manual, and it is unclear how quickly these upgrades would be required. Valley-Todeco believes that the minimum capture velocity requirement should be based on the edition of *Industrial Ventilation, A Manual of Recommended Practice for Design* which is in effect at the time that a permit application for air pollution control equipment is deemed complete by the SCAQMD. This approach is consistent with other SCAQMD regulations, such as the recently adopted Rule 1430.

10-5
(cont'd)

Therefore, Valley-Todeco recommends that section (h)(5) of PAR 1469 be revised to read as follows:

(5) Ventilation Design and Operation for Air Pollution Control Techniques

The owner or operator of a facility that conducts chromium electroplating or chromic acid anodizing operations shall operate air pollution control techniques required under subdivision (h) and (t) at the applicable minimum hood induced capture velocity specified in the most current edition of the *Industrial Ventilation, A Manual of Recommended Practice for Design*, published by the American Conference of Governmental Industrial Hygienists, at the time a permit application is deemed complete with the SCAQMD.

6.0 Delete the requirement for ensuring that air velocity within 10 feet of a controlled Tier II Hexavalent Chromium Containing Tank is less than one-tenth of the collection slot velocity of the more recent successful source test.

Section (m)(1)(D) requires that "any air velocity within 10 feet of a Tier II Hexavalent Chromium-Containing Tank vented to an add-on pollution control device is less than one-tenth of the collection slot velocity as specified in the most recent successful source test." However, the SQMD has provided no specifics on how this monitoring is to be accomplished, i.e. at what frequency, at how many locations, etc. in either PAR 1469 or in the Preliminary Draft Staff Report². Valley-Todeco is concerned that lack of specific instructions on how to determine compliance with this requirement will result in different interpretations by facilities and SCAQMD inspectors and result in unnecessary compliance issues. PAR 1469 contains requirements for a building enclosure and prevention of cross currents under section (e), for qualitative and quantitative assessment of capture efficiency under section (k)(6), and for static and velocity pressure monitoring under section (m)(1)(C). Collectively, these requirements should provide sufficient assurance for the proper capture of emissions at a Tier II

10-6

² Preliminary Draft Staff Report, Proposed Amended Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations, November 2017

Hexavalent Chromium-Containing Tank and make the poorly defined requirement of section (m)(1)(D) superfluous. Therefore, Valley-Todeco recommends that section (m)(1)(D) be removed from PAR 1469.

10-6
(cont'd)

7.0 Clarify the surface tension measurement frequency for existing facilities already subject to this requirement

Current Rule 1469, at section (g)(2), requires "...Surface tension shall be measured daily for 20 operating days, and weekly thereafter as long as there is no violation of the surface tension requirement. If a violation occurs, the measurement frequency shall return to weekly for 20 operating days, and weekly thereafter." Section (m)(2)(A) of PAR 1469 retains the daily monitoring requirement for 20 operating days, but changes the weekly monitoring requirement to "every third operating day thereafter, but not less than once per week."

10-7

Valley-Todeco seeks clarification from the SCAQMD that sources currently subject to Rule 1469, and which have previously completed daily surface tension measuring for 20 days, will only be required to change the measurement frequency from weekly to every third operating day but not less than once per week under PAR 1469. And, that there is not an expectation to redo the daily measuring for 20 days just because of the measurement frequency change from weekly to every third operating day proposed in PAR149.

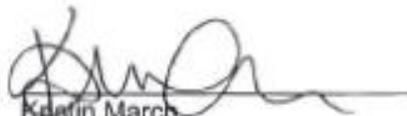
Conclusion

Valley-Todeco appreciates the opportunity to comment on PAR 1469. We are hopeful that our comments will help SCAQMD to further improve PAR 1469 and create a final amended rule that incorporates flexible and cost-effective compliance provisions for all affected facilities.

10-8

Should you require clarification or further discussion of our comments, please contact Dean Richardson (Valley-Todeco's Environmental Engineer) at dean.richardson@arconic.com or (818) 364-6062.

Sincerely,



Kristin March
Director of Operations
Valley Todeco, Inc.
Arconic Fastening Systems and Rings
Kristin.March@arconic.com

Responses to Valley-Todeco, Inc. Comment Letter, submitted 12/11/17

- 10-1 Response: The definition suggested in the comment does not capture all buffing, grinding and polishing operations of concern. In particular, it does not include products containing hexavalent chromium that are buffed, ground, or polished that do not go through a Tier I, Tier II or Tier III Tank.
- 10-2 Response: A definition for ‘Associated Process Tank’ has been added to the proposal as follows: *Associated Process Tank means any tank in the process line of a Tier I, Tier II, or a Tier III Hexavalent Chromium Tank.*
- 10-3 Response: The requirement under paragraph (e)(4) has been modified to require closure of all enclosure openings in the roof that are located within 15 feet from the edge of any Tier II or Tier III Tank. Please see Response to Comment 6-13. It is not the intent of this paragraph to include roof mounted air conditioners that return cooled air back into a building.
- 10-4 Response: Please see Response to Comment 1-9. Regarding the comment on “open floor area”, this language exists in the current version of Rule 1469. No clarifications to this language are proposed.
- 10-5 Response: The language for paragraph (h)(6) has been modified to read: *“The owner or operator of a facility shall operate air pollution control techniques required under subdivisions (h) at or above the applicable minimum hood induced capture velocity specified in the most current edition (i.e., at the time the SCAQMD permit application was deemed complete by SCAQMD) of Industrial Ventilation, A Manual of Recommended Practice for Design, published by the American Conference of Governmental Industrial Hygienists”.*
- 10-6 Response: The referenced subparagraph has been removed from PAR 1469.
- 10-7 Response: Please see Response to Comment 2-15.
- 10-8 Response: Thank you for your comment. The SCAQMD staff has worked with stakeholders throughout the rulemaking process to develop a proposal that is health protective and with consideration of cost impacts.



December 15, 2017

Mr. Eugene Kang
 South Coast Air Quality Management District
 21865 Copley Drive
 Diamond Bar, California 91765

Re: Public comments to Proposed Amended Rule 1469— Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing

Dear Eugene:

RadTech International hereby reiterates the comments we have made public workshop on proposed amended rule (PAR) 1469. RadTech is the association for the advancement of Ultraviolet/Electron Beam/Light Emitting Diodes (UV/EB/LED) technology. We represent over 800 members nationwide and have sister chapters worldwide. Our processes are environmentally friendly and generate essentially zero VOC emissions. Our technology has been recognized by the district and board members have been very supportive of our industry.

Some of our member companies have products that do not contain chrome. Thus, we would urge the district to provide incentives to companies who choose to reformulate their process and eliminate emissions of Hexavalent Chrome. The current overly prescriptive monthly reporting requirements for facilities who choose to phase-out chrome from their operations will be an impediment to the district's stated goal of reducing emissions of Hexavalent Chrome. As mentioned during the workshop, facilities who choose to eliminate toxics should be encouraged and supported to do so. Adding yet another regulatory process as a condition for conversion, is not helpful to businesses or to the district. We suggest that the frequency of the reporting be changed from twelve times per year to twice per year. Staff's concern with ensuring facilities are making progress with the conversion process, is addressed by the requirement for facilities to file a Compliance Plan to the district. The Plan would already have timelines in place and any undue delay would be covered under the Compliance Plan.

11-1

Additionally, much testimony was heard from small and medium sized businesses, regarding the financial hardships they face in meeting the requirements of PAR 1469. We urge the district to partner with our industry and the regulated community and provide financial support for conversion to chrome-free projects. The district has typically focused on funding mobile source projects and stationary sources have not seen their fair share of assistance. We are hopeful that our industry can participate in recent funding opportunities being considered by the district. Toxic emission reductions are a key component of Assembly Bill 617 (Garcia) and any financial support the district can provide will not only benefit the business community but also the environment and help the district meet its mandates.

11-2

We appreciate your attention to these issues and look forward to a productive rulemaking effort.

Sincerely

Rita M. Loof
Director, Environmental Affairs

Cc: Wayne Nastri, SCAQMD Board

Responses to RadTech International Comment Letter from (12/15/17)

11-1 Response: PAR 1469 has been modified to require a default quarterly frequency for progress reports relating to Hexavalent Chromium Phase-Out Plans, and also provides flexibility for approval of different reporting frequencies as determined by the Executive Officer.

11-2 Response: Please see Response to Comment 9-2. If the non-PFOS chemical fume suppressants are not certified, SCAQMD staff will seek funding to help affected facilities with the costs of installation of add-on pollution control systems.

Staff has added a provision that the Executive Officer in consultation with CARB may approve an alternative to a wetting agent chemical fume suppressant that is as equally effective as a certified wetting agent chemical fume suppressant pursuant to paragraph (1)(2) of PAR 1469. This approach will allow facilities to use an alternative to a wetting agent chemical fume suppressant if emissions testing conducted by SCAQMD demonstrates that the alternative is as equally effective as a certified wetting agent chemical fume suppressant. Additionally, the owner or operator of a facility that opts to use an alternative to a wetting agent chemical fume suppressant will be required to comply with permit conditions that are specified during the certification process.

The alternative to a wetting agent chemical fume suppressant would be available to only the smallest plating facilities that are currently allowed to use chemical fume suppressants. This approach will provide a cost savings, given that SCAQMD staff will conduct the necessary emissions testing. Also, similar to the use of certified wetting agent chemical fume suppressants, no further emissions testing would be required, provided the operator complies with the conditions of the certification of the alternative.

From: Alan Olick [mailto:alanolick@aol.com]
Sent: Friday, December 15, 2017 11:04 PM
To: Neil Fujiwara <nfujiwara@aqmd.gov>; ekang@aqmd.gov.
Subject: Re: Update: Delay for PAR 1469

Hi Neil and Eugene;

Please try to read my letters to the AQMD concerning my recent NOV's.

I feel we are being treated unfairly and I was just required to pay additional monies for a new source test and hiring a new testing company to repeat the same test

to certify our chrome tank which now one instead of two. The place my company is in seems to have no cure as it appears that even the

new approved fume suppressant might not be allowed.

We have spent about \$80,000.00 on testing our two chrome plating tanks and

many man hours of set up and clean up.

Please can you help us to cancel the recent NOV's?

I will have to close our chrome plating and my customers will send their plating to Mexico.

I will do whatever it takes to keep on the good side of the AQMD.

Thank You

Alan Olick

MFASC board member for 30 years.

President of Brite Plating and General Plating

1313 Mirasol St

Los Angeles, Ca. 90023

Alan Olick
alanolick@aol.com

12-1

Responses to from Brite Plating and General Plating Comment Letter, submitted 12/15/17

12-1 Response: PAR 1469 proposes to revisit the certification of the currently certified wetting agent chemical fume suppressants. Under the current proposal, beginning July 1, 2021, facilities may only add a wetting agent chemical fume suppressant to a Tier III Tank that is certified based on a revised process conducted by SCAQMD and CARB. The date was chosen to allow sufficient time for facilities to implement alternatives, manufacturers to potentially reformulate chemical fume suppressants, and SCAQMD staff to certify the chemical fume suppressants. The request to cancel the referenced Notices of Violations (NOVs) in the comment has been forwarded to SCAQMD's enforcement and legal staff. SCAQMD rules staff does not have the ability to cancel NOVs.

----- Original message -----

From: Robina <robinasuwol@earthlink.net>

Date: 12/7/17 2:22 PM (GMT-08:00)

To: Eugene Kang <EKang@aqmd.gov>, Susan Nakamura <SNakamura@aqmd.gov>

Subject: Please share comment- "Listen Only" Call-in

Dear Susan & Eugene,

Extremely disappointing to note that the "call-in" is listen only, especially in of the fires which makes traveling challenging.

13-1

Below, is the link to the Madrid Statement that I hope can be distributed to all of the 1469 Workshop participants.

13-2

I hope that you can share our deep concerns with those today that we are extremely concerned about the Fume Supressants because of their high persistence, bioaccumulation potential and extreme toxicity. The communities we work with cannot allow these toxic emissions to continue, especially when engineered controls are available.

13-3

We are committed to working with AQMD and industry to locate funding sources to assist in transitioning to engineered controls. Sources we are investigating include, but are not limited to the California Pollution Control Financing Authority.

13-4

It is unfortunate that we cannot voice these concerns on this call, and would have attended in person today, were it not for the fires.

Please kindly share these comments with all participating in person, on the call, or other 1469 Workshop participants who also may have been impacted by the fires and unable to attend today.

13-5

Respectfully,

Robina Suwol
Founder & Executive Director
California Safe Schools
818.785.5515 office
www.calisafe.org

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-----Original Message-----

From: Robina [mailto:robinasuwol@earthlink.net]

Sent: Thursday, December 7, 2017 2:49 PM

To: Eugene Kang <EKang@aqmd.gov>; Susan Nakamura <SNakamura@aqmd.gov>

Cc: dcapjane@aol.com; delamoactioncommittee@gmail.com; shabakaheru@yahoo.com; aguirrefel@gmail.com

Subject: Additional Concerns include: 100 ft. from sensitive receptors

Susan and Eugene,

I would also like to be on record for expressing serious concerns surrounding the recommendation of 100 feet from sensitive receptors. We are unclear what process and protocols were used to determine 100 feet, when most sensitive receptors are more in the 200- 300 foot range.

13-6

Protecting our most vulnerable is our highest priority, and the 100 feet proposal does would not provide sufficient protection.

Thank you very much for your consideration, and please kindly share this comment with the entire 1469 Workshop attendees today, and others who may not be able to attend. Thank you. so much.

Respectfully,

Robina Suwol
Founder & Executive Director
California Safe Schools
818.785.5515 office
818.261.7965 cell
www.calisafe.org

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Responses to Robina Suwol Comment Email, submitted 12/7/17

- 13-1 Response: Throughout the rule development process, the SCAQMD staff has held 13 Working Group Meetings. All Working Group Meetings that were held at SCAQMD's headquarters in Diamond Bar had a call-in number where people could conference into the meeting and dialogue with staff. Unlike Working Group meetings, Public Workshops only have a "listen only" ability when held in the auditorium. This was also indicated on the Notice of Public Workshop.
- 13-2 Response: Staff did not receive a link to the Madrid Statement as indicated in the comment. It is not SCAQMD's policy to distribute non-SCAQMD materials to attendees at the Public Workshop.
- 13-3 Response: The Public Workshop Presentation included information from OEHHA's memos regarding the toxicity of the non-PFOS chemical fume suppressants. See also Response to Comment 9-4.
- 13-4 Response: If no non-PFOS chemical fume suppressants is certified, SCAQMD staff will seek funding to help the affected facilities with the costs of installation of add-on pollution control systems.

Staff has added a provision that the Executive Officer in consultation with CARB may approve an alternative to a wetting agent chemical fume suppressant that is as equally effective as a certified wetting agent chemical fume suppressant pursuant to paragraph (1)(2) of PAR 1469. This approach will allow facilities to use an alternative to a wetting agent chemical fume suppressant if emissions testing conducted by SCAQMD demonstrates that the alternative is as equally effective as a certified wetting agent chemical fume suppressant. Additionally, the owner or operator of a facility that opts to use an alternative to a wetting agent chemical fume suppressant will be required to comply with permit conditions that are specified during the approval process.

The alternative to a wetting agent chemical fume suppressant would be available to only the smallest plating facilities that are currently allowed to use chemical fume suppressants. This approach will provide a cost savings, given that SCAQMD staff will conduct the necessary emissions testing. Also, similar to the use of certified wetting agent chemical fume suppressants, no further emissions testing would be required, provided the operator complies with the conditions of the certification of the alternative.

- 13-5 Response: Refer to Response 13-1. The comments received via email are included in the Staff Report and responded to. The comment is part of the public record and is available to the public as a result.

13-6 Response: A sensitive receptor means any residence including private homes, condominiums, apartments, and living quarters; education resources such as preschools and kindergarten through grade twelve (k-12) schools; daycare centers; and health care facilities such as hospitals or retirement and nursing homes. A sensitive receptor includes long term care hospitals, hospices, prisons, and dormitories or similar live-in housing. The requirement to prohibiting enclosure openings within 1,000 feet of the nearest sensitive receptor is meant to reduce the exposure to sensitive receptors while being cost conscious. In addition to prohibiting enclosure openings within 1,000 feet of the nearest sensitive receptor, PAR 1469 includes a requirement to install a permanent total enclosure under certain conditions for facilities located within 1,000 feet of a sensitive receptor.



February 2, 2018

Mr. Wayne Nastri
 Executive Officer
 South Coast Air Quality Management District
 21865 East Copley Drive
 Diamond Bar, California 91765

Re: Comments from Metal Finishers Association - Proposed Amended Rule 1469 and Preliminary Draft Staff Report, Working Group Meeting #9

Dear Mr. Nastri:

The Metal Finishers Association ("MFA") represents over 130 companies throughout Northern and Southern California, which comprise a diverse industrial base of metal finishing and related businesses that employ thousands of workers. Its members provide necessary products and services to manufacturers in various other industries, including, automotive, consumer products, industrial, energy, aerospace and numerous others. In particular, a large segment of our membership provide mission critical parts and components for military aircraft, satellites, telecommunications, defense and the like. In addition, well over 90% of the MFA membership meet the federal definition of Small Business with fewer than 150 employees, and these are typically private family businesses or otherwise small closely held companies.

Representatives of the MFA, including legal counsel and technical experts, have been actively engaged with AQMD staff since the beginning of this rulemaking process. MFA members and its representatives have also attended all nine (9) public working group meetings, including, the most recent meeting held on January 4, 2018 (referred to as "Working Group Meeting #9"), plus participated in numerous other meetings with the AQMD's legal counsel, economic experts and rule development staff. In addition, the MFA and its representatives attended and testified at Public Hearings on this rule development which were held on November 1, 2017 and December 7, 2017. This comment letter addresses information presented in PAR 1469 rule language and Preliminary Draft Staff Report dated January 19, 2018 ("Staff Report"), and public meetings held to date. The MFA reserves the right to modify or supplement these comments based on subsequent AQMD presentations, draft rules and other information.

1.0 RECENT DEVELOPMENTS AND IMPORTANT ISSUES

(1) PFOS Alternatives – Over the past decade, the MFA has been active on the research and rulemaking of PFOS alternatives at the federal and state level, and is very concerned about any suggested "phase out" of such alternatives for PAR 1469. As the SCAQMD is aware, many metal finishers depend upon the use of certified non-PFOS suppressants for regulatory compliance, which are currently allowed under the existing Rule 1469. Moreover, many of the smallest metal finishers depend solely upon such non-PFOS suppressants for compliance in lieu of add-on controls. Based on recent developments, the Staff Report indicates the SCAQMD and CARB is currently researching potential toxicity concerns with

14-1

Wayne Natri, SCAQMD - Proposed Amended Rule 1469
 January 31, 2018

such non-PFOS suppressants, such as, fluorotelomer alcohol (FTOH), fluorotelomer sulfonate (FTSA), perfluorohexanoic acid (PFHxA), perfluorohexane sulfonate (PFHxS) and others. Based on these reviews, the Staff Report indicates the SCAQMD has determined the toxicity for these chemicals are largely inconclusive, including any potential carcinogenic effects. Further, with the exception of FTOH, OEHHA did not develop interim Reference Exposure Levels (iRELs) for these PFOS alternatives. In the case of FTOH, there are no proposed cancer potency factors, and its iREL for chronic impacts is several times higher than hexavalent chromium. As a consequence, the MFA does not believe the suggested "phase out" of such PFOS alternatives are warranted until such time there is convincing scientific evidence these chemicals pose an equal or greater risk to public health than the compound which it is controlling, hexavalent chromium. In our view, the benefits of reducing hexavalent chromium emissions far outweigh the inconclusive findings of potential toxicity risks from these PFOS alternatives.

14-1
 (cont'd)

(2) Tier I Hexavalent Chromium Tanks – PAR 1469 (c)(58) proposes a threshold of 1,000 ppm of hexavalent chromium content to qualify Tier I tanks. As we have noted, there remains insufficient scientific support and test data that justifies such a low concentration threshold for Tier I tanks. Tier I should only apply to those tanks which exhibit the highest potential for hexavalent chrome emissions, and therefore exclude all other tanks from regulatory applicability. At this time, the Staff Report does not present sufficient test data to justify such a low concentration limit for Tier I tank applicability.

14-2

(3) Tier II Hexavalent Chromium Tanks – PAR 1469 (c)(59) proposes several categories of Tier II tank applicability based on minimum operating temperature and hexavalent chromium concentration. The SCAQMD presentation from Working Group #9 indicates a tank with as little as 100 ppm of hexavalent chromium would be a significant emission source. Further, the Staff Report concludes a tank that operates as low as 140°F with greater than 1,500 ppm would yield similar or greater amount of emissions. To support its conclusions, the Staff Report provide test data on Table 1-5 (shown below).

Table 1-5: SCAQMD Sampling of Various Temperatures

Tank Type	Tank Hexavalent Chromium Content (ppm)	Tank Operating Temperature (°F)	Run	Tank Hexavalent Chromium Emission Concentration (ug/m ³)	Tank Hexavalent Chromium Emission Rate (mg/hr)	Tank Hexavalent Chromium Emission Rate per Ft ² (mg/hr-ft ²)
Alodine Tank	347	150	1	37.9	0.037	3.75E-3
			2	25.7	0.025	2.53E-3
			3	58.8	0.054	5.40E-3
			AVG	40.8	0.039	3.89E-4
Alodine Tank	333	160	1	72.7	0.083	8.33E-3
			2	51.3	0.058	5.80E-3
			3	134.9	0.156	1.56E-2
			AVG	86.3	0.099	9.92E-3

14-3

As shown in Table 1-5, the Staff Report provides only six (6) data points from a single tank at two (2) operating temperatures (150° F and 160° F) and hexavalent chromium concentrations of 347 and 333 ppm, respectively. From this very limited sample size, the Staff Report averaged 3 data points per tank, and then concludes, "At 150°F, 0.20 mg/hr would be exceeded when tank hexavalent chromium concentrations exceed 1,780 ppm. At 160° F, would be exceeded when tank hexavalent chromium concentrations exceed 673 ppm." Further, based on this same data set, the SCAQMD presentation from Working Group #9 further indicates a tank with as little as 65 ppm of hexavalent chromium could be a

Wayne Natri, SCAQMD - Proposed Amended Rule 1469
January 31, 2018

significant source of emissions. The Staff Report appears to make a direct linear correlation of hexavalent chromium concentration and temperature based on this limited sampling data to support its conclusion that Tier II add-on controls are warranted.

The MFA disagrees with the SCAQMD stated conclusions and findings for the proposed Tier II tank categories. First, it is clear the proposed Tier II tank categories are based on very little test data, which are not statistically significant. Second, the Staff Report does not provide any evidence that the proposed Tier II tanks would result in any meaningful or significant emissions outside of a building enclosure. Quite the contrary, as we have noted in prior working group meetings, the AQMD source test staff has indicated measured fugitive emissions through rooftop vents are far below any measurements at the tank surface by several orders of magnitude, even concerning tanks with higher temperatures and concentrations. Third, the above test results are "theoretical" emissions, as the source test results do not take into account various operational effects, such as tank covers, mechanical suppressants, limited operating schedules, tank sizes, etc. Moreover, given that PAR 1469 already proposes severe restrictions on building enclosures, including 3% openings, no cross-draft, limited ventilation and other requirements, such minor emissions (if any) from such proposed Tier II tanks would be sufficiently contained inside a building enclosure, and further add-on controls would not be necessary.

Additionally, even though the SCAQMD proposed some revisions for larger airflows on larger tanks, the standard of .20 mg/hr still appears to be an inappropriate standard because it is essentially a mass load and is not scalable for different sized tanks and operations.

(4) Cost Estimates for APCD – The MFA has been collecting data on the cost of installing HEPA systems over Tier II tanks. Our economist is working closely with SCAQMD staff and will release his findings shortly. The cost per CFM is showing to be around \$20. The MFA believes that the early estimates from the SCAQMD January 4, 2018 meeting are unrealistically low.

(5) Capture Efficiency Testing – PAR 1469 (k)(6) specifies routine slot velocity, pressure of push air manifolds and smoke testing for applicable tanks with add-on control devices every 6-months. In particular, PAR 1469 specifies that a facility must "shut down" all chrome electroplating and anodizing lines, if such tests show a deviation of +/- 10% from the most recently approved AQMD source test or emission screening. The MFA remains concerned of such stringent limitations and shut down requirement, given the numerous factors that could impact these capture test results, such as, equipment sensitivity, testing locations, personnel handling and others. 10% is a very small margin for error which would be difficult to ensure compliance, could result in unnecessary equipment shut downs, and ultimately lead to triggering to costly Permanent Total Enclosure (PTE) requirements pursuant to PAR 1469 (t).

(6) Ambient Monitoring Near Metal Finishers – The Staff Report continues to present the ambient monitoring data of hexavalent chromium around metal finishers in the cities of Newport Beach, Paramount, Long Beach and Compton. Air toxics enforcement actions against these facilities have referenced a hexavalent chromium concentration of 1 ng/m³ as a fence line (or near fence line) threshold for enforcement purposes, which we have consistently argued is not supported by the current science. As noted on numerous occasions, the MFA have raised legitimate issues of flawed assumptions, unreliable data, lack of established protocols, use of monitoring equipment not supported by the manufacturer for the purpose for which it has been used, contributing sources, prohibitive costs and inconclusive results relating to this ambient air monitoring data. Based on testimony of affected small businesses during this entire rulemaking, it is clear the AQMD's continued use of such unreliable air monitoring data will have significant adverse economic impacts, including loss of customers, decreased business volumes and

14-3
(cont'd)

14-4

14-5

14-6

Wayne Natri, SCAQMD - Proposed Amended Rule 1469
 January 31, 2018

employee layoffs. To date, the ambient monitoring at many metal finishing facilities are still ongoing for at least 6+ months, and over a year in a few cases. Based on the extensive amount of ambient samples collected, the hexavalent chromium emissions data remains largely inconclusive for any regulatory purposes, and further, would not pass scientific or legal scrutiny in nearly all cases.

14-6
 (cont'd)

2.0 PROPOSED KEY AMENDMENTS

(7) Building Enclosures – PAR 1469 (c) specifies numerous building enclosure requirements for both Tier I and Tier II tanks, which the MFA remains concerned on several issues:

a) *Limitation on Building "Openings"* – As per PAR 1469(c)(1), the MFA opposes the 3% surface area limitation on the number of openings in building enclosures, such as doors, windows, roll up doors and others. Over the course of the prior 6+ months of rule development and workshops, a specific surface area or other limitation on building openings has never been presented nor studied by the AQMD staff, and is not supported by any scientific or other evidence in the record. At a minimum, the MFA does not believe the 3% limit for building enclosure should be stricter than EPA Method 204 (Permanent Total Enclosure), which provides for 5% of total surface area.

14-7

b) *Close Roof Openings within 15 feet* – PAR 1469 (c)(4) requires the closure of all roof openings located within 15 feet above the edge of any Tier II Tank. The MFA fails to see the purpose of this requirement since Tier II tanks are required to have air pollution controls and meet allowable emission limits. As a consequence, the MFA requests that this provision be removed.

14-8

c) *Prohibition on Rooftop Ventilation* – PAR 1469 (c)(5) prohibits any device in any roof opening that pulls air from building enclosures for Tier I and Tier II tanks. The MFA is concerned that such a broad prohibition on building ventilation/exhaust will create uncomfortable, and likely unsafe, working conditions for employees within such enclosures. Moreover, as we have noted in prior working group meetings, the AQMD source test staff has indicated measured fugitive emissions through rooftop vents are far below any measurements at the tank surface by several orders of magnitude. Consequently, such a broad prohibition on rooftop ventilation for building enclosures is not warranted.

14-9

d) *Breaks, cracks, gaps and deterioration* – PAR 1469 (c)(6) and (7) specifies monthly inspections, and a 72 hour repair of "breaks, cracks, gaps and deterioration" of building enclosures. There is no clear definition of "breaks, cracks, gaps and deterioration" in the rule, and unlikely that a clear definition is possible. As a consequence, the MFA opposes these inspection and repair requirements, given the vagueness of "breaks, cracks, gaps and deterioration", and a high risk of wide interpretation by AQMD enforcement officers for issuance of NOVs.

14-10

(8) Permanent Total Enclosures (PTEs) – PAR 1469 (t) specifies a trigger for PTEs for Tier II tanks based on (a) failure of a source test within a 48 month period; or (b) more than one incident of failure of smoke and/or slot velocity measurements within 48 month period. If triggered, PAR 1469 requires permit applications for a PTE within 180 days, and construction of the PTE within 12 months. In general, the MFA does not believe that PTEs are necessary to control potential Tier II tanks, as we anticipate the use of buildings, housekeeping and BMPs would be sufficient control measures. As we

14-11

Wayne Nastri, SCAQMD - Proposed Amended Rule 1469
January 31, 2018

have noted, the use of PTEs can also be very costly and difficult to implement, especially for facilities that were not originally designed nor constructed to accommodate PTEs for existing tank operations. Due to a small margin of failure and issues noted above for the proposed testing, it is too easy for a PTE to be triggered under the proposed rule. Moreover, the proposed requirement to shut down a Tier II tank for failing the quantitative tests is sufficient to maintain compliance, and such PTE requirements are unnecessary. For all these reasons, the MFA requests that a PTE on-ramp requirement be removed from the proposed rule.

14-11
(cont'd)

(9) Freeboard Height – PAR 1469 (d)(4) would require a minimum freeboard height based on the ACGIH Industrial Ventilation Manual for newly installed (or modified) Tier II tanks after the rule adoption date. As noted previously, the MFA opposes a freeboard height requirement for new or modified applicable tanks, as it has not been demonstrated that a minimum freeboard height results in any meaningful emission reductions. Moreover, to manage a different freeboard height for different tanks would create significant compliance issues for facility operators while providing minimal environmental benefit.

14-12

(10) Source Testing – PAR 1469 (k)(3) requires initial compliance source test for all facilities within 120 days from rule adoption, and then every 36 months thereafter. The MFA requests that subsequent source tests/screenings be conducted every 5 years after the initial test, not every 3 years.

14-13

(11) Notification of Incidents – PAR 1469 (p)(4)(A) requires a regulated facility to notify the AQMD within “one hour” of any failed smoke test, failed source test, exceedance of a permitted ampere-hour limit or malfunction of a non-resettable ampere-hour meter. Further, PAR 1469 (p)(4)(B) requires corrective action and a written report within seven (7) days of notification. The MFA believes these proposed notification requirements are redundant, as existing AQMD Rule 430 already covers the reporting of such incidents that result in rule or permit violations.

14-14

(12) Surface Tension Testing – PAR 1469 (o)(4)(D) proposes a “daily” surface tension test for 20 consecutive days, and then every 3rd day thereafter, provided there is no violation of surface tension requirements. As noted previously, the MFA opposes such rigorous testing frequency since the current requirement of weekly surface tension testing is sufficient to ensure compliance. Moreover, there is insufficient data which warrants a more frequent testing requirement.

14-15

(13) Housekeeping – The MFA opposes daily cleaning of applicable tanks and operational areas, as currently proposed in PAR 1469 (f)(4), as this places an undue burden on metal finishers. The current cleaning requirement is once per week, which we believe is sufficient housekeeping for applicable operations.

14-16

(14) Water Spraying – Regarding the proposed limitations on using water sprays as currently proposed in PAR 1469 (g)(2), the MFA does not believe such limitations are necessary. Given the water spray typically occurs over rinse tanks, and that neither the parts nor rinse tank will have significant amounts of chrome laden liquid.

14-17

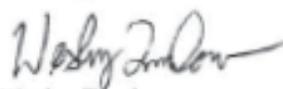
(15) Compressed Air Cleaning or Drying – Regarding the proposed limitations on using compressed air cleaning or drying within 15 feet of a Tier I or Tier II tank as currently proposed in PAR 1469 (g)(7), the MFA does not believe such limitations are necessary. At this point in the process, any residual rinse water on finished parts will have negligible amounts of hexavalent chrome, if any.

14-18

Wayne Nastri, SCAQMD - Proposed Amended Rule 1469
January 31, 2018

The MFA and its representatives look forward to continued discussions on the amended rule with the AQMD. Thank you and we look forward to your response.

Sincerely,



Wesley Turnbull
President

cc: Susan Nakamura, SCAQMD (via email only)
Kurt Wiese, SCAQMD (via email only)
Barry Groveman, Musick Peeler
Ryan Hiote, Musick Peeler

Responses to Metal Finishing Association of Southern California (MFASC) Comment Letter, submitted 2/2/18

14-1 Response: PAR 1469 proposes to revisit the certification of the currently certified wetting agent chemical fume suppressants. Under the current proposal, beginning July 1, 2021, facilities may only add a chemical fume suppressant to a Tier III Tank that is certified based on a revised process conducted by SCAQMD and CARB. The date was chosen to allow sufficient time for facilities to implement alternatives, manufacturers to potentially reformulate chemical fume suppressants, and SCAQMD staff to certify the chemical fume suppressant. Please see also Response to Comment 9-4.

Until the new certification process is completed, it is premature to consider the process a “phase-out” of the currently certified non-PFOS chemical fume suppressants. That is one of several possible outcomes of the re-certification process. Staff will work with CARB and the Office of Environmental Health Hazard Assessment (OEHHA), as well as other regulatory, agency, industry and public stakeholders as appropriate.

Staff has added a provision that the Executive Officer in consultation with CARB may approve an alternative to a wetting agent chemical fume suppressant that is as equally effective as a certified wetting agent chemical fume suppressant pursuant to paragraph (1)(2) of PAR 1469. This approach will allow facilities to use an alternative to a wetting agent chemical fume suppressant if emissions testing conducted by SCAQMD demonstrates that the alternative is as equally effective as a certified wetting agent chemical fume suppressant. Additionally, the owner or operator of a facility that opts to use an alternative to a wetting agent chemical fume suppressant will be required to comply with permit conditions that are specified during the approval process.

The alternative to a wetting agent chemical fume suppressant would be available to plating facilities that are currently allowed to use chemical fume suppressants. This approach will provide a cost savings, given that SCAQMD staff will conduct the necessary emissions testing. Also, similar to the use of certified wetting agent chemical fume suppressants, no further emissions testing would be required, provided the operator complies with the conditions of the approval of the alternative.

14-2 Response: Tier I Tanks are tanks that have a hexavalent chromium concentration of 1,000 parts per million (ppm) or greater and are not considered Tier II or Tier III Tanks. Source testing of numerous process tanks has demonstrated hexavalent chromium concentrations of less than 1,000 ppm may result in emissions greater than 0.2 mg/hr, for tanks that are air sparged, rectified, or heated. Therefore, the potential exists for emissions of concern exist from tanks with hexavalent chromium concentrations greater than 1,000 ppm.

However, there are limited rule requirements imposed on Tier I Tanks, as summarized below:

1. Operate Tier I Tanks indoors (not required to be located in a building enclosure);
2. Clean surfaces around Tier I Tanks weekly; and
3. Minimize dragout around Tier I Tanks by installing drip trays.

14-3 Response: PAR 1469 includes an intermediate Tier II Tank classification that corresponds to tanks operated at temperatures between 140 and 170 degrees Fahrenheit. Tier II Tanks will be allowed to use in-tank controls, such as tank covers and mechanical fume suppressants rather than being required to vent the tank to APC systems. Regarding the comments on limited test data and linear correlation between temperature and hexavalent chromium concentration in previous versions of PAR 1469, please see Response to Comment 1-1.

14-4 Response: Cost estimates for PAR 1469 include costs for APC systems that range from \$17/cfm to \$23/cfm. Staff obtained capital cost estimates for installation of APC systems from several sources for this analysis. Staff has worked with the MFASC's consultant from Environomics to validate the approach for establishing accurate cost estimates.

14-5 Response: Please see Response to Comment 2-12.

14-6 Response: Please see Responses to Comments 1-7 and 2-3. The use of the 1 ng/m³ threshold in the Orders for Abatement were supported during the Hearing Board deliberations. PAR 1469 does not include an ambient concentration limit or threshold similar to that in the Orders for Abatement.

14-7 Response: PAR requires Tier II and Tier III Tanks to be operated within a building enclosure. A building enclosure is not the same as a PTE as defined under EPA Method 204. In particular, a building enclosure is not required to be kept under negative pressure and maintain inward face velocity of at least 200 feet per minute (fpm) through all natural draft openings, as is required for a PTE.

Please also see Responses to Comments 1-2 and 6-11.

14-8 Response: Since the comment was received, the Tier II Hexavalent Chromium Tanks have been reclassified into Tier II and Tier III Tanks. The intent of the requirement to close openings within 15 feet of a Tier III Tank, whether natural draft openings or forced air openings, is to ensure that any fugitive emissions that escape the primary control at the tank surface are not emitted as fugitive emissions through a roof vent. Staff has observed Tier III Tanks located in close proximity to tanks that are operated at or near the boiling temperature of water, where there may be a transport mechanism (i.e. steam

that creates an updraft) to cause fugitive emissions from a building enclosure through an opening located directly above or very near the tank.

As an alternative to permanently closing openings located within 15 feet of a Tier II or Tier III Tank, facility owner/operators have the option of venting those openings through HEPA controls.

- 14-9 Response: The current proposal for PAR 1469 allows forced-air openings, provided they are at least 15 feet from the edge of a Tier III Tank. Please see Responses to Comments 6-13 and 6-14.
- 14-10 Response: Paragraphs (e)(5) and (e)(6) have been modified to add clarity. The proposal includes a definition for building enclosure under paragraph (c)(11). PAR 1469 removes references to breaks, cracks, gaps, and deterioration in the definition of Building Enclosure. Inspection of building enclosure focuses on a breach or large break in the enclosure and removes the references to breaks, cracks, gaps, and deterioration.
- 14-11 Response: PAR 1469 requires PTEs for facilities that have consistently shown they cannot meet the point source emission requirement or fail to adhere to requirements to shut down a tank that fails specific parameter monitoring provisions. Please also see Response to Comment 1-11.
- 14-12 Response: The requirements for freeboard height have been removed from PAR 1469.
- 14-13 Response: Please see Response to Comment 2-11.
- 14-14 Response: Please see Response to Comment 2-13.
- 14-15 Response: The currently certified non-PFOS fume suppressants have been demonstrated to degrade at a faster rate than previously certified PFOS fume suppressants. The proposed requirement to test surface tension every third operating day was previously discussed with the stakeholders. Please also see Response to Comment 2-15.
- 14-16 Response: Please see Response to Comment 1-9.
- 14-17 Response: The proposal under paragraph (g)(2) allows for the installation of splash guards as a means of compliance with this requirement. The use of splash guards is a reasonable and cost effective solution to capturing overspray for situations where spraying of parts is necessary over a tank.
- 14-18 Response: Please see Response to Comment 2-18.

**VALLEY-TODECO, INC.**

12975 BRADLEY AVENUE, SYLMAR, CALIFORNIA 91342 USA • TEL (818) 367-2261 • FAX (818) 364-6035

UPS Tracking Number:

1Z 104 3RR 01 6716 2603

February 9, 2018

Mr. Neil Fujiwara
Planning, Rule Development and Area Sources
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

RE: Comments on SCAQMD Proposed Amended Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations

Dear Mr. Fujiwara:

Valley-Todeco, Inc. (Valley-Todeco) is pleased to submit the following comments on the January 19, 2018 preliminary draft rule language of South Coast Air Quality Management District's (SCAQMD) Proposed Amended Rule (PAR) 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations. Our California operations include a facility in Sylmar, California that will be directly impacted by PAR 1469. These comments are in addition to comments submitted on December 12, 2017.

Valley-Todeco is a wholly-owned subsidiary of Arconic Inc. (NYSE: ARNC). Arconic creates breakthrough products that shape industries. Working in close partnership with our customers, we solve complex engineering challenges to transform the way we fly, drive, build and power. Through the ingenuity of our people and cutting-edge advanced manufacturing techniques, we deliver these products at a quality and efficiency that ensure customer success and shareholder value.

Valley-Todeco is generally supportive of the SCAQMD's effort to develop an amended regulation to provide additional control of hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations to ensure that ambient air concentrations of hexavalent chromium remain protective of human health and the environment. We appreciate SCAQMD's continued interest in developing sound regulations that protect public health and the environment while minimizing unnecessary regulatory burdens on industry and offer the following additional comment to the SCAQMD for its consideration into the final amended Rule 1469.

Include a definition for buffing, grinding and polishing activities

In its's earlier comments, Valley-Todeco had expressed concern that the absence of a definition for "buffing, grinding and polishing activities" could result in an interpretation that activities unrelated to chromium electroplating and chromic acid anodizing operations under PAR 1469, e.g. grinding done for facility or equipment maintenance, should be subject to PAR 1469 requirements. Such activities are clearly outside of the stated purposed and applicability of PAR 1469 as stated in sections (a) and (b).

Based on information contained in the presentation slides of the 10th Working Group Meeting for PAR 1469¹, SCAQMD is considering specific conditions to address "wet" buffing, grinding and polishing activities. Valley-Todeco conducts wet grinding operations at its facility, including wet grinding of parts that have gone through chromium electroplating and chromic acid anodizing operations. The wet grinding is done under a flood of coolant that used to carry grindings away from the grinding wheel. Given the flooding coolant, there is no potential to generate particulate emissions with wet grinding. PAR 1469 section (f) already contains housekeeping provisions that include the cleanup of spilled materials and potentially contaminated surfaces. These provisions should ensure that drying and tracking of spilled coolant and grindings is prevented. Valley-Todeco is concerned that inclusion of wet grinding within the scope of buffing, grinding and polishing operations will result in additional costs for enclosures with no commensurate environmental benefit.

SCAQMD has previously considered wet grinding and maintenance grinding in its development and adoption of Rule 1430 – Control of Emissions from Metal Grinding Operations at Metal Forging Facilities and concluded that these were outside of the scope of that rule. The applicability section of Rule 1430 states "[T]his rule does not apply to metal grinding or metal cutting conducted under a continuous flood of metal removal fluid, or grinding activities conducted to maintain or repair equipment at the facility."

Therefore, Valley-Todeco recommends that PAR 1469 be revised by adding a definition for buffing, grinding, and polishing operations to read as follows:

BUFFING, GRINDING, OR POLISHING means the buffing, grinding or polishing of parts that have gone through a process that includes one or more Tier I or Tier II Hexavalent Chromium-Containing Tanks. This does not include buffing, grinding or polishing conducted under a continuous flood of metal removal fluid or conducted to maintain or repair equipment at the facility.

Adding this definition is consistent with other SCAQMD rules and will provided the needed clarification to the intent of PAR 1469.

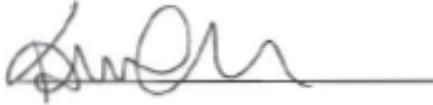
Conclusion

Valley-Todeco appreciates the opportunity to comment on PAR 1469. We are hopeful that our comments will help SCAQMD to further improve PAR 1469 and create a final amended rule that incorporates flexible and cost-effective compliance provisions for all affected facilities.

¹ Working Group Meeting #10, slide 19. http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1469/par1469_wg10_020618.pdf?sfvrsn=6 Accessed February 8, 2018.

Should you require clarification or further discussion of our comments, please contact Dean Richardson (Valley-Todeco's environmental manager) at dean.richardson@Arconic.com or (818) 281-5342.

Sincerely,

A handwritten signature in black ink, appearing to read 'Kristin March', is written over a horizontal line.

Kristin March
Director of Operations
Valley Todeco, Inc.
Arconic Fastening Systems
Kristin.March@arconic.com

Responses to Valley Todeco, Inc. Comment Letter from, submitted 2/9/18

15-1 Response: An exemption has been added under paragraph (r)(2) that addresses the requirements to conduct all buffing/grinding/polishing operations within a building enclosure, and to install a barrier between the buffing/grinding polishing area and tank area, when operated under a continuous flood of metal removal fluid. Please also see Response to Comment 10-1.



ITAR
ISO 9001
AS 9100
ISO/TS 16949
Nadcap-CP
FAA Repair Station
CERT. #M2TR048L

February 22, 2018

Eugene Kang
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765

Reference: PAR 1469 - HEXAVALENT CHROMIUM EMISSIONS FROM
CHROMIUM ELECTROPLATING AND CHROMIC ACID ANODIZING OPERATIONS,
COMMENTS ON PORTIONS OF JANUARY 19, 2018, DRAFT RULE

We are writing to reiterate & expand on our verbal comments at the
Stationary Source meeting on February 16, 2018 on PAR 1469 and from
site visits at MSI. These comments are specifically for MSI but some
may have application to other plating facilities.

1. Our major difficulty with PAR 1469 is section (e) (5)
"Requirements for Building Enclosures". You & your staff have seen
our facility but we are explaining our situation in more written
detail so that others can understand our problem with the PAR (draft
January 19, 2018.

MSI has one Hex Cr plating tank already permitted & controlled with
a HEPA system. We have two small 24" x 30" chromate tanks that would
qualify as a Tier II Cr tank due to T > 140 F. However, these 3
tanks are located in our Main Shop in building 1 which also contains
about 180 tanks for multiple processing operations (Cd, Zn, Ni, Cu,
Pb etc) all permitted under various SCAQMD rules (including R1426).
Building 1 also houses our Precious Metal Department which includes
about 100 tanks & is totally isolated from the Main Shop.

16-1

Building 1 is about 100' W x 200' L x 20' H. It was designed & built
over 50 years ago and includes ventilated skylights, convection
exhaust ambient air vents, fan & motor operated exhaust ambient air
vents & other roof & wall openings. MSI has added multiple other
exhaust ventilation systems which exhaust through the roof for
specific process tanks to remove heat, fumes, & excessive moisture
from the work space.

Overall we estimate that building 1 exhausts about 200,000 cfm of
air from the work space. MSI does not have the resources, nor does
it make sense to add HEPA control systems to all this volume of air
to capture fugitive Cr emissions from one plating tank plus two
small chromate tanks.

Metal Surfaces, Inc. 6050 Shull Street, Bell Gardens, CA 90201 Ph: (562)927-1331 Fax: 562-927-0692 www.metalsurfaces.com

Eugene Kang - AQMD
 February 22, 2018
 Page 2

We therefore suggest that (e) (5) be deleted or applicable only to roof exhausts within 15' - 20' of Tier II chrome tank.

16-1
 (cont'd)

2. Section (e) (8) is too narrow in its scope with reference to OSHA regulations. We suggest it include reference to conflicting requirements of the Universal Fire Code, Universal Building Code, Industrial Ventilation (A Manual of Recommended Practice for Design), or just good engineering practice for the design of ventilation systems for Industrial buildings utilized by the architects/mechanical engineering societies.

16-2

3. Two additional sections of PAR 1469 require some clarification/modification:

- a. Section (f) (8) "Abatement of Roof Surfaces" is totally overreaching & would be difficult to enforce fairly. We suggest (f) (8) be deleted or rewritten to simplify the requirements.
- b. Section (g) (7) "Prohibited Compressed Air" needs to be rewritten. If the intent of this provision is to prevent the compressed air cleaning from creating stray air currents around a Tier I or II tank, then change the word "areas" in the 3rd & 4th line to "tank". If the intent is to prevent the liquid particles blown off the parts from becoming airborne or collecting on the floor, then require a shield behind the sprayed parts to stop the liquid particles.

16-3

If you need clarification of any our comments, please call me.

Sincerely,

Sam Bell

Sam R Bell /Charles K Bell
 Metal Surfaces, Inc.

Responses to Metal Surfaces Incorporated Comment Letter, submitted 2/22/18

- 16-1 Response: SCAQMD staff has visited Metal Surfaces Inc. on multiple occasions throughout the rulemaking process. Although there is currently no source-specific toxics rule that prohibits the ventilation configuration at MSI, the SCAQMD staff has expressed concern that there are multiple non-Rule 1469 tanks that are currently ventilated to the ambient air. Many of these tanks will likely be covered under PAR 1426 which covers non-hexavalent chromium plating tanks such as cadmium, nickel, zinc, lead, and copper. Regarding the comment on roof vents, paragraph (e)(4) requires roof openings located within 15 feet from the edge of any Tier II or Tier III Tank to be closed or controlled. Please also see Response to Comment 6-13.
- 16-2 Response: Paragraph (e)(6) has been revised to allow consideration of other municipal codes or requirements directly related to worker safety. This will allow the necessary flexibility. Please also see Responses to Comment 5-1 and 18-10.
- 16-3 Response: Paragraph (f)(8) has been revised to apply to cutting of roof surfaces of building enclosures. Requirements include 1) that affected roof surface areas be cleaned by HEPA vacuum prior to cutting, 2) fugitive emissions be minimized by using a method(s) such as constructing a temporary enclosure and HEPA vacuuming, and 3) notifying the Executive Officer at least 48 hours prior to the commencement of any work being performed by calling 1-800-CUT-SMOG.

Regarding the comment on the intent of the requirement for compressed air cleaning, please see Responses to Comments 2-18 and 8-11.

From: Lisa Lappin [mailto:ljtutoring@gmail.com]
 Sent: Thursday, February 22, 2018 11:17 PM
 To: Wayne Nastri <wnastri@aqmd.gov>; Susan Nakamura <SNakamura@aqmd.gov>; Philip Fine <pfine@aqmd.gov>; Dr. Joseph K. Lyou <jlyou@aqmd.gov>; Rachel Uranga <ruranga@scng.com>; Tony Barboza <tony.barboza@latimes.com>; Jane Williams <dcapjane@aol.com>; Clerk of Board <Front_PC@aqmd.gov>; Liza Tucker <liza@consumerwatchdog.org>; Laurie Guillen <laurieguillen1987@gmail.com>; Ho, Jessica <jho@bos.lacounty.gov>; Magdalena Guillen <bluegirl_76@hotmail.com>; Maya Golden-Krasner <mdgoldenkrasner@gmail.com>; Sonia Olmos <sonia4paramountschools@gmail.com>; Public Advisor <publicadvisor@aqmd.gov>; Rebecca Plevin <rebecca.plevin@gmail.com>; Robina Suwol <calisafe@earthlink.net>
 Subject: Public Comment on rule 1469

Dear Mr. Nastri and SCAQMD decision makers,
 The following letter was signed by 965 petitioners asking for you to put the needs of low-income communities ahead of the profits of 117 companies. Each petitioner represents many more who can not (children) or will not (adults without documentation or afraid of retaliation) sign. Why should the profit margin for 117 companies take precedence over the critical health needs of numerous communities throughout Southern CA impacted by hexavalent chromium that is endangering human lives?

The petition and its signatures sent to all of you this evening should be entered into public comment. For the record, it reads as follows:

We, the undersigned, call on Mr. Wayne Nastri, CEO of South Coast Air Quality Management District (SCAQMD), to direct staff at SCAQMD to revise wording on proposed rule 1469, chrome plating and anodizing, in order to require that the 117 companies using hexavalent chromium be required to conduct continuous outdoor ambient air monitoring and install state of the art pollution control systems including HEPA filtration and negative air with total enclosure. We can not wait for a company to fail source testing. We needs these protections now!

17-1

Furthermore, we ask that SCAQMD seriously consider incentives for companies to use alternatives to the highly toxic chemical, hexavalent chromium, that is claiming the lives of innocent children whose immune systems are not strong enough to withstand the assault of these deadly chemicals. Europe has already banned hexavalent chromium for decorative uses and non essential purposes, requiring strict procedures that their defense industry must follow before getting approval for its use. We want California to join Europe in being a leader in the movement toward a less toxic environment for communities. There are solutions waiting to be discovered but your agency is not taking a lead in finding them and making them happen.

17-2

We believe that the health and safety of our children should be the priority for Southern California's air regulatory agency. Your agency was created to protect our region from breathing toxic air. SCAQMD decision makers, we are counting on all of you to listen to our cry for help. Please do your job and put the well being of the public, especially our children, ahead of the needs and desires of a long unregulated metal industry pushing for a weakened rule. Our children are nonnegotiable.

17-3

Please do your job and put the well being of the public, especially our children, ahead of the needs and desires of a long unregulated metal industry pushing for a weakened rule. Our children are nonnegotiable. They are our future. Protect them Mr. Nastri.

Responses to Lisa Lappin Comment Email, submitted 2/22/18

- 17-1 Response: Please see Response to Comment 1-7.
- PAR 1469 contains additional requirements which will reduce hexavalent chromium emissions including the installation of air pollution control devices, where triggered by PAR 1469 requirements.
- 17-2 Response: Please see Responses to Comments 3-8 and 9-2.
- 17-3 Response: Thank you for your comment. Please see Responses to Comments 9-1 and 9-2.

From: Bruce Greene [mailto:Bruce.Greene@hmfgroup.com]
Sent: Tuesday, February 27, 2018 10:08 AM
To: Neil Fujiwara <nfujiwara@aqmd.gov>
Cc: Eugene Kang <EKang@aqmd.gov>; Susan Nakamura <SNakamura@aqmd.gov>
Subject: Hixson Comments on PAR 1469

Neil,

Sorry for the late email but wanted to get you our comments on the latest version of PAR 1469 prior to the meeting.

Please see attached.

If you have any questions or comments, please feel free to contact me.

Thanks

Bruce Greene
Environmental/Health & Safety

Hixson Metal Finishing
829 Production Place
Newport Beach, CA 92663
Direct: 949.722.3459
Office: 800.900.9798
www.HMFGroup.com

Supporting Flight Excellence

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PAR 1469 Review and Comments

- (c) (23) – Enclosure Opening – This indicated that stacks for add on air pollution control devices subject to this rule are not considered an enclosure opening. In our case, we have a number of ventilation hoods that draw ambient air from the processing areas in order to create the ventilation required to make the PTE. These vents are directed to a wet scrubber (no HEPA) and are within 15 feet of some Tier I and Tier II tanks. We feel that that these should be exempted if used or located within a PTE and not be considered Enclosure Openings. 18-1
- (c) (28) – Freeboard Height – As written, if you were using a foam blanket to control emissions, then your freeboard could be 4 – 6 inches of foam blanket along with the 8 inches that you are looking for on the freeboard. This could create a freeboard to solution level of 12 to 14 inches. 18-2
- (c) (36) – Low Pressure Spray Nozzle – There should be a distinction from spray nozzles used in open space and those used inside a tank where the entire part and rack are lowered completely into the tank for rinsing. 18-3
- (c) (59) – Tier II Tanks – the limit of 100 ppm at or above 160 degrees concerns me. In the past we have had some rinse tanks approach close to this limit. It would all depend upon when this tank would be sampled. There should be an exclusion of all rinse tanks since a majority of the time the tanks would be well below the 100 ppm (0 to 10 ppm from past testing). 18-4
- (e) (1) – Building enclosures – If the tanks are located within a negative pressure PTE within a building enclosure or the building enclosure is a negative pressure PTE this should not be required. EPA Method 204 allows for 5% openings. 18-5
- (e) (2) – Building enclosure openings – If the tanks are located within a negative pressure PTE within a building enclosure or the building enclosure is a negative pressure PTE this should not be required. EPA method 204 requires an inward flow into the building or PTE in excess of 200 fpm. 18-6
- (e) (3) – Building enclosure openings facing sensitive receptors – If the tanks are located within a negative pressure PTE within a building enclosure or the building enclosure is a negative pressure PTE this should not be required. EPA method 204 requires an inward flow into the building or PTE in excess of 200 fpm. 18-7
- (e) (4) – Roof Openings – We assume that these openings will not include the intakes for additional ventilation systems that are used to vent air through a wet (non-HEPA) scrubber in order to capture fugitive acid emissions and create the required ventilation for a PTE. 18-8
- (e) (5) – Same as (e) (4) above 18-9
- (e) (8) – This indicates prior to initial startup. What if the line is already in operation? 18-10
- (f) (1) – Storage – This indicates “other substances that may contain hex chrome”. Would this mean that all concrete material during any building/construction activities needs to be stored in an enclosed 18-11

storage area? Would this include stainless steel and other metals (to include parts from customers) that contain hex chrome? This should be rewritten to only pertain to materials that are used in the process of chromium plating or chromic acid anodizing.	18-11 (cont'd)
(f) (5) – Containers – A number of times these container will be reused or recycled and per other regulations are required to be triple rinsed. This section should include rinsing/cleaning operations.	18-12
(g) (1) (A) – Automated Lines – Processing solution will be dripped onto the trays, so it would be impossible to clean in a way that no visible dust or residue on the drip trays could be seen at any time. A periodic cleaning schedule should be indicated as once per day as you have indicated in (g) (2) (A).	18-13
(h)(4)(A)(iv) and (v) – The parameters as forth in this section would still penalize a processor if there were multiple small tanks that were vented to a single scrubber. In our case the small tanks in building 3, using the requirements as indicated in section (h)(4)(A)(v) would give us a emission limit of 0.18596 mg/hr-ft ² since we are above the 5,000 cfm and in a PTE. Would this not push an operator to instead install 2 smaller scrubbers that are rated less than 5,000 cfm and therefore be given an emission limit of 0.2 mg/hr-ft ² per scrubber or 0.4 mg/hr-ft ² total. This is gaming the system. This section also does not address how electrolytic and non-electrolytic tanks should be tested if vented to the same scrubber.	18-14
(h)(5) – Ventilation Design – If an alternative design is approved by the executive officer, the design should be allowed. Can we add at the end of the section “or as approved by the Executive Officer”	18-15
(l)(1) – Chemical Fume suppressants – Question. Can these suppressants be used on non-electrolytic tanks to comply with some provisions as indicated in Alternative Compliance Methods and those using Trivalent chromium tanks? If this is the case then this section only covers electrolytic tanks.	18-16

Responses to Hixson Metal Finishing Comment Letter, submitted 2/27/18

- 18-1 Response: The definition for Enclosure Opening has been revised and excludes stacks, ducts, and openings to accommodate stacks and ducts.
- 18-2 Response: The requirements for freeboard height have been removed from PAR 1469.
- 18-3 Response: PAR 1469 does not require low pressure spray nozzles to be utilized when the spray nozzle is used inside a tank and where the entire part and equipment are lowered completely into the tank for rinsing.
- 18-4 Response: A Tier II Tank is defined under paragraph (c)(58) as: *“a tank that is operated or permitted to operate by the SCAQMD within the range of temperatures and corresponding hexavalent chromium concentrations specified in Appendix 10 and is not a Tier III Hexavalent Chromium Tank”* Under Appendix 10, the hexavalent chromium concentrations for a Tier II Tanks must remain in the concentration range for the specified temperature and be required to comply with paragraph (h)(4). Tanks that exceed hexavalent chromium concentration for a corresponding temperature are considered a Tier III Tank and must comply with subparagraph (h)(4)(A). The following tank concentrations define a Tier II Tank, depending on temperature:

Temperature (° F)	Tier II Tank Hexavalent Chromium Concentration (ppm)	Tier III Tank Hexavalent Chromium Concentration (ppm)
140 to <145° F	5,200 to <10,400	≥10,400
145 to <150° F	2,700 to <5,500	≥5,500
150 to <155° F	1,400 to <2,900	≥2,900
155 to <160° F	700 to <1,600	≥1,600
160 to <165° F	400 to <800	≥800
165 to <170° F	180 to <400	≥400
≥170° F	≥100 to <200	≥200

- 18-5 Response: PAR 1469 requires 3.5% building enclosure openings as a fraction of the building envelope (i.e. area of walls, floor and horizontal projection of roof) for both a building enclosure and a PTE.

Please also see Response to Comment 6-11.

- 18-6 Response: PAR 1469 paragraph (e)(2) requires *“. . .that any building enclosure openings that open to the exterior and are on opposite ends of the building enclosure where air movement can pass through are not simultaneously open except during the passage of vehicles, equipment or people, not to exceed two hours per operating day, by closing. . .”* or using a specified

method, including automated doors, overlapping plastic flaps, vestibule, airlock system, etc. This requirement is applicable only to building enclosures, not to permanent total enclosures.

- 18-7 Response: PAR 1469 paragraph (e)(3) requires that *“Except for the movement of vehicles, equipment or people, close any building enclosure opening or use any of the methods listed in subparagraphs (e)(1)(A) through (e)(1)(E), that directly faces and opens towards the nearest: (A) Sensitive receptor, with the exception of a school, that is located within 1,000 feet, as measured from the property line of the sensitive receptor to the building enclosure opening; and (B) School that is located within 1,000 feet, as measured from the property line of the school or early education center to the building enclosure opening.”* This requirement is applicable only to building enclosures, not to permanent total enclosures.
- 18-8 Response: Please see Response to Comment 6-13.
- 18-9 Response: Please see Response to Comment 18-8.
- 18-10 Response: PAR 1469 requires facilities existing or already in operation to submit the written notification that indicates a conflict between PAR 1469 requirements and OSHA, CAL-OSHA, or other municipal codes or agency requirements directly related to worker safety for review and approval no later than [30 day after Date of Rule Adoption].
- 18-11 Response: The requirement to store other substances that may contain hexavalent chromium in a closed container in an enclosed storage area when not in use was a previous requirement. PAR 1469 did not amend the requirement. This requirement only pertains to materials that are used in the process of chromium electroplating or chromic acid anodizing, not to concrete or stainless steel.
- 18-12 Response: One intent of PAR 1469 is to reduce and/or eliminate fugitive hexavalent chromium emissions from housekeeping activities. Containers that contain chromium-containing waste material shall be kept closed at all times except when being filled or emptied. Containers that are being rinsed do not contain hexavalent chromium waste material and therefore, are not subject to this provision. Paragraph (f)(5) allows the operator to identify the appropriate methods to ensure wastes generated from housekeeping activities do not lead to fugitive emissions.
- 18-13 Response: PAR 1469 requires that facilities keep trays or other containment equipment such that the liquid is captured and returned to the tank(s), and cleaned such that there is no accumulation of visible dust or residue on the drip tray or other containment equipment. PAR 1469 adds an additional requirement of prohibiting the accumulation of residue on the drip tray or other

containment equipment. Please also see Responses to Comments 8-10 and 21-5.

- 18-14 Response: The emission limit under clause (h)(4)(A)(iii) is specific to air pollution control equipment that does not serve electrolytic tanks and the ventilation system has a maximum exhaust rate of 5,000 cfm or less. Clause (h)(4)(A)(iv) was added at the request of the industry, specifically to address situations where electrolytic tanks are vented to the same air pollution control as non-electrolytic tanks. As such, it was necessary to develop an emission factor that reflects emissions coming from both sources. The emission factor under clause (h)(4)(A)(iv) was developed with the input of the industry. The proposed language allows facility operators to design air pollution control for electrolytic as well as non-electrolytic tanks to provide flexibility in engineering a solution to unique issues at that facility, while meeting the rule limits.
- 18-15 Response: PAR 1469 has been modified to allow owners or operators to have an alternative design if approved by the Executive Officer.
- 18-16 Response: PAR 1469 allows facilities to utilize alternative methods to control hexavalent chromium emissions under subsection (i) with the approval of the Executive Officer.



The Boeing Company
4000 Lakewood Blvd
Long Beach, CA 90808

March 01, 2018

SCAQMD
21865 E. Copley Drive
Diamond Bar, CA 91765

ATTN: Neil Fujiwara
Planning, Rule Development and Area Sources

Re: SCAQMD Rule 1469 Proposed Amendments

Thank you for the opportunity to provide comments relating to the proposed amendments to SCAQMD Rule 1469 (Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations). Boeing requests that the following changes/clarifications be incorporated into the proposed amendments to the rule:

- Proposed Amended Rule 1469 contains a number of new requirements that appear to be in force immediately upon adoption of the proposed rule. These include the following:
 - (f)(4): Cleaning, used an approved cleaning method – Sites may have to purchase new equipment, such as HEPA vacuums, to comply with requirement. 19-1
 - (f)(6): Cleaning floors within 20 feet of buffing, grinding, or polishing workstations – Sites may have to purchase new equipment, such as HEPA vacuums, to comply with requirement. 19-2
 - (g)(2)(B): With respect to low pressure water nozzles, sites may have to purchase and install new equipment to meet requirement. 19-3
 - (g)(3): New labels for each tank will be required to reflect additional information that is specified. 19-4
 - (g)(7): Installation of barriers to separate air cleaning or drying operations from process tank lines 19-5
 - (n): Complete revision of existing Operation & Maintenance Plans to reflect new rule requirements 19-6
 - Appendix 4 (Table 4-1): Installation of temperature gauges and temperature data loggers will be required, as well as a new weekly inspection requirement for collection slots and push air manifolds. 19-7

A number of new requirements contained in the rule have been granted additional time to achieve compliance. Facilities must be given adequate time upon rule adoption to assure that the above-mentioned requirements, as well as other requirements contained within the proposed rule, are put into place in an orderly fashion that allows the facility to assure compliance with the final rule. The District should allow facilities 90 days from date of rule adoption to implement any new requirements contained in the proposed rule. 19-8



The Boeing Company
4000 Lakewood Blvd
Long Beach, CA 90808

- With respect to the proposed language in (f)(4), request that the proposed language be modified to reflect that cleaning only be performed each operating day, rather than the current "daily".] 19-9
- Appendix 9 (Smoke Tests): The language in (3) Testing Conditions, does not reflect the updated language incorporated into (k)(6)(B)(7). Language in Appendix 9 (3) should be updated to reflect this language.] 19-10

Boeing looks forward to continuing to work with District staff in the development of the proposed amendments to SCAQMD Rule 1469. If you should have any questions or require additional information, please do not hesitate to contact me.

William Pearce
Senior Environmental Engineer
Environmental Services
Environment, Health & Safety

Responses to Boeing Comment Letter, submitted 3/1/18

- 19-1 Response: The requirement to clean surfaces is an existing requirement under Rule 1469 (c)(4)(D) and would continue to be required under PAR 1469. As such, it is expected that facilities are currently using one or more approved methods to clean the areas described under PAR 1469 (f)(4), and no new equipment is expected to be required to clean surfaces under PAR 1469. Please also see Response to Comment 1-9.
- 19-2 Response: Acceptable cleaning methods to clean floors within 20 feet of a buffing, grinding, or polishing workstation include HEPA vacuuming, hand wiping with a damp cloth, and wet mopping, and alternative cleaning methods as approved by the Executive Officer. As such, PAR 1469 provides sufficient flexibility to comply using methods which do not require the purchase of new equipment and can be done immediately upon adoption of PAR 1469.
- 19-3 Response: A provision has been added to subparagraph (g)(2)(B) for low pressure nozzles to be used in lieu of splash guards and to allow compliance within 90 days after adoption of PAR 1469. This will provide facilities the time for purchase and installation of any new equipment necessary to meet this provision.
- 19-4 Response: A provision has been added to paragraph (g)(3) to allow compliance with the requirement to relabel tanks within 60 days after adoption of PAR 1469.
- 19-5 Response: The referenced requirement for barriers to separate air cleaning or drying operations from process tank lines is an existing requirement in Rule 1469 (c)(4)(F). The requirement has been clarified under PAR 1469 to include all tanks regulated under the proposal, including Tier II and Tier III Tanks.
- 19-6 Response: Paragraph (n)(9) requires a facility's operation and maintenance plan to be revised within 90 days after rule adoption, and made available upon request to the Executive Officer to reflect the incorporation of the inspection and maintenance requirements for a device or monitoring equipment that is identified in Table 4-2 and Table 4-3 of Appendix 4.
- 19-7 Response: Paragraph (n)(4) has been revised to allow up to 90 days to install temperature gauges and temperature data loggers.
- 19-8 Response: For the requirements noted in responses to the previous comments, additional time has been provided for compliance, or an explanation has been given regarding the reasons why additional time is not necessary for compliance.
- 19-9 Response: The language under paragraph (f)(4) has been modified to require weekly cleaning.

19-10 Response: Appendix 9 has been amended to reflect the requested language.



ISO 9001-2000
AS 9100
Nadcap
FAA

March 1, 2018
Via Scan/Email and
First Class Mail

Eugene Kang
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Re: PAR 1469 HEXAVALENT CHROMIUM EMISSIONS FROM CHROMIUM
ELECTROPLATING AND CHROMIC ACID ANODIZING OPERATIONS,
ADDITIONAL COMMENTS ON PORTIONS OF JANUARY 19, 2018, AND
FEBRUARY 25, 2018, DRAFT RULE

Dear Mr. Kang:

While understanding time is short, we are writing to suggest a "de minimis" provision be included in Subdivision (i) of PAR 1469 regarding small chromate tanks (Tier II or III) that are seldom utilized. For example, we have one tank that fits this description as we operate the tank less than ten (10) days per year. The rest of the year, the chromate solution is cold and covered or the solution is drummed and the tank is empty. We suspect other companies in the District may have similar situations with minimal use tanks. These tanks allow us to meet our customer's specifications and needs. For our tank, the business volume/revenue cannot begin to justify the cost for hooding, ventilating, controlling with a HEPA system, conducting source tests, etc.

We would like to see an exemption from PAR 1469 provisions (h)(2), (h)(4), and Appendix 7 for these tanks (as an example, tanks only used up to thirty (30) production days per year) as long as all other provisions of PAR 1469, have been met. Less stringent than HEPA control techniques (for instance, fume suppressants, polyballs, or other "in tank" techniques) should meet the SCAQMD objectives for this rule.

20-1

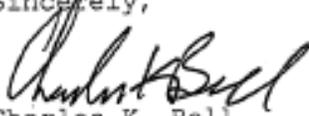
METAL SURFACES, INC. 6060 Shull St., Bell Gardens, CA 90201-6297. Mail: PO Box 5001, Bell Gardens, CA 90202-5001.
Tel: (562)-927-1331, Fax (562)-927-0922 www.metalsurfaces.com

Eugene Kang
South Coast Air Quality Management District
March 1, 2018
Page 2

We do appreciate the District's consideration given to this suggestion, to the prior comments referred to in our February 22, 2018, letter, and as discussed at the 11th Working Group Meeting on February 27, 2018.

Thank you for your consideration. Please contact us with questions, suggestions, or instructions.

Sincerely,



Charles K. Bell
Metal Surfaces, Inc.

cc: Neil Fujiwara
Wesley Turnbow - MFASC
Brian Ward - AAA Plating
Samuel R. Bell - MSI
George Petrusek - MSI
(via scan/email)

Responses to Metal Surfaces Incorporated Comment Letter, submitted 3/1/18

20-1 Response: Uncontrolled chromate tanks that are designated as Tier II or Tier III Tanks under PAR 1469 have the potential for emissions that may be significant. Therefore, the request to provide a low usage exemption based on operation of less than 30 production days per year was not included in PAR 1469.

From: Bruce Greene <Bruce.Greene@hmfgroup.com>
Sent: Thursday, March 8, 2018 2:19 PM
To: Neil Fujiwara; Eugene Kanq
Cc: Susan Nakamura
Subject: Hixson Metal Finishing - PAR 1469 Comments
Attachments: PAR 1469 Review and Comments_030818.docx

Neil,

Please see the attached for comments on the proposed draft rule language of Rule 1469 as provided on February 25, 2018.

If you have any comments or questions, please feel free to contact me.

Thanks

Bruce Greene
Environmental/Health & Safety

Hixson Metal Finishing
829 Production Place
Newport Beach, CA 92663
Direct: 949.722.3459
Office: 800.900.9798
www.HMFgroup.com

Supporting Flight Excellence

The data attached/enclosed may contain information (including technology and technical data) which is subject to the U.S. International Traffic in Arms Regulations (ITAR) or Export Administration Regulations (EAR). This information may not be exported, released, or disclosed to foreign persons either inside or outside the United States without first obtaining the proper U.S. export license or written authorization. The information and articles described herein may either be patented or proprietary, and the copying or reproduction thereof is prohibited without Hixson Metal Finishing's prior written consent. In addition, the information contained in this communication may also be privileged and confidential, and is intended only for the use of the recipient(s) named above. You are hereby notified that any dissemination, distribution, or copying of this communication, or any of its contents, to any other party, is strictly prohibited. If you have received this communication in error, please return it to the sender immediately and delete the original message and any copy of it from your computer system.*

PAR 1469 Comments

- (d)(5) – I may be reading this wrong but as written this prohibits running any tier I – III process tank within a building enclosure. Shouldn't this prohibit running a tanks unless it is within a building enclosure?

21-1
- (e)(2) – Building Enclosure Openings - If the building enclosure is considered a PTE with negative air, this provision should not apply. As per EPA Method 204 a minimum of 200 fpm inward flow velocity must be maintained.

21-2
- (e)(3) – Building Enclosure Openings - If the building enclosure is considered a PTE with negative air, this provision should not apply. As per EPA Method 204 a minimum of 200 fpm inward flow velocity must be maintained.

21-3
- (f)(1) – Storage – As written with the words “or other substances that may contain hexavalent chromium” this would technically require all concrete, stainless steel, parts/assemblies that have been plated, liquid chromic waste, etc. to be stored in a closed container within a closed storage area. This should be more closely defined to include only make up chemicals or chemicals used in the plating process.

21-4
- (g)(1)(A) – Automated Lines, Drip Trays – There is no way to completely eliminate the dripping of process solutions on the drip trays and therefore you cannot keep them clean at all time. A time interval should be provided in order to clean the trays as in once per day.

21-5
- (h)(4)(A)(iii) and (iv) – The parameters as forth in this section would still penalize a processor if there were multiple small tanks that were vented to a single scrubber. In our case the small tanks in building 3, using the requirements as indicated in these sections would give us an emission limit of 0.18596 mg/hr since we are above the 5,000 CFM. Would this not push an operator to instead install 2 smaller scrubbers that are rated less than 5,000 CFM and therefore be given an emission limit of 0.2 mg/hr per scrubber or 0.4 mg/hr total. This is gaming the system. Also, as written, since 1 of my tanks is electrolytic, this would mean that the emissions from all 8 of my tanks (Tiers I, II and III since permitted) that are controlled by the scrubber would have to meet the 0.0015 mg/amp hr emission limit combined. This would allow a smaller shop that may only have 1 or 2 scrubbed tanks the same emissions limits but with far fewer operating tanks. This would also push operators not to scrub Tier I and Tier II tanks since the emission limit would be shared with all scrubbed tanks.

21-6
- (h)(6) – Ventilation Design - Can the statement “or as approved by the executive officer” be added at the end

21-7
- (k)(2)(c) – This refers to appendix 10. I think it should be appendix 9

21-8
- (k)(6)(A)(i) – Can we add “or as approved by the executive officer” at the end

21-9
- Appendix 2, line 16 – The 5% allowance should be noted if the compliance status report covers a PTE.

21-10

Responses to Hixson Metal Finishing Comment Email, submitted 3/8/18

- 21-1 Response: Paragraph (d)(5) requires “Operate any Tier II or Tier III Hexavalent Chromium Tank within a building enclosure that meets the requirements of subdivision (e)”. The intent is that all Tier I, Tier II, and Tier III Tanks must be operated within an enclosure; however, only Tier II and Tier III Tanks are subject to the building enclosure requirements as described in subdivision (e).
- 21-2 Response: The requirements to limit cross draft under paragraph (e)(2) are applicable only to building enclosures, not to PTEs.
- 21-3 Response: The requirements to close doors that directly face the nearest sensitive receptor, excluding schools, within 1,000 feet and directly face the nearest school within 1,000 feet under paragraph (e)(3) are applicable only to building enclosures, not to PTEs.
- 21-4 Response: The language under paragraph (f)(1) is existing language in Rule 1469(c)(4)(A) and no amendments are proposed. Please also see Responses to Comment 8-9 and Comment 18-11.
- 21-5 Response: The language under paragraph (g)(1) is existing language in Rule 1469(c)(4)(H)(i) and no amendments are proposed.
- 21-6 Response: The emission limit under clause (h)(4)(A)(iii) is specific to air pollution control equipment that does not serve electrolytic tanks. Clause (h)(4)(A)(iv) was added at the request of the industry stakeholders, specifically to address situations where electrolytic tanks are vented to the same air pollution control as non-electrolytic tanks. As such, it was necessary to develop an emission factor that reflects emissions coming from both sources. The emission factor under clause (h)(4)(A)(iv) was developed with the input of industry stakeholders. The proposed language allows facility operators to design air pollution control for electrolytic as well as non-electrolytic tanks to provide flexibility in engineering a solution to unique issues at that facility, while meeting the rule limits.
- 21-7 Response: Please see Response to Comment 8-16.
- 21-8 Response: The reference in subparagraph (k)(2)(C) has been revised to Appendix 9.
- 21-9 Response: Executive Officer discretion is already incorporated into this language and no further revision is required.
- 21-10 Response: Under PAR 1469, building enclosures as well as PTEs are required to meet a limit of 3.5% building openings as a ratio of the building envelope. Therefore, no modification to Appendix 2 is necessary.

Comment and Response to Felipe Aguirre Comment Email, submitted 3/15/18**Comment Read into the Record at 3/16/18 Stationary Source Committee Meeting**

Comment: I wish to ensure AQMD places monitors at all schools that are 1500 feet from the source of hexavalent chromium such as the Heliotrope Elementary School here in Maywood which is located across the street from Cooks Induction Heating.

Response: Cook's Induction Heating is not a Rule 1469 facility, but rather a heat treating facility that would be subject to a future rule for heat treating.

From: Universal Metal Plating <universalmetalplating@verizon.net>
Sent: Wednesday, April 4, 2018 7:41 PM
To: Neil Fujiwara
Subject: Rule 1469

Hello Neil

I just wanted to clear up some information about the working group meeting this morning.

- | | |
|---|-------------------------|
| <ol style="list-style-type: none"> 1. The phase out for hexavalent chromium for decorative plating. <ol style="list-style-type: none"> a. Is this for all decorative plating shops to move to trivalent chromium? b. Or if you have H.E.P.A. filter in place will you be able to continue doing business? 2. When fume suppressants are to be eliminated. <ol style="list-style-type: none"> a. If you have pollution controls in place will you still be able to use hex chrome? b. By 2021 will it matter how many amp hours or how few amp hours used that you will still be able to use hex chrome? | <p>22-1</p> <p>22-2</p> |
| <p>By 2021 will amp hours matter on if you need to have pollution controls or will any decorative plating shop need to have controls installed no matter the amp hours used?</p> | <p>22-3</p> |
| <p>Will hex chrome eventually be phased out in Southern California?</p> | <p>22-4</p> |
| <p>Will it matter if a decorative plating shop have a permanent total enclosure to phase out hex chrome?</p> | <p>22-5</p> |
| <p>I understand that most of the problems are coming from the hex chrome anodize shops but this is one of the first time that decorative shops have been called to phase out hex chrome. Is there anything that can be done to continue using hex chrome or is it being phased out completely?</p> | <p>22-6</p> |

Just a few questions I have if you can please answer them when you have time.

Thank you,

Jose

Jose De Jesus Martinez
Universal Metal Plating
 1526 W. First St.
 Azusa, CA 91702
 (626) 969-7932 / (626) 969-7931
admin@universalmetalplating.com
<http://www.universalmetalplating.com>

Responses to Universal Metal Plating Comment Email, submitted 4/4/18

- 22-1 Response: As discussed in PAR 1469 Working Group #12, staff's recommendation is to conduct a pilot study and investigate available technology options for alternatives to hexavalent chromium for all applications, including decorative chromium. Trivalent chromium electroplating is an alternative that may be recommended. At this time, it is not possible to predict how extensive the phase-out would be, if any, or what other control measures might be allowed in lieu of a complete phase-out. A phase-out if proposed may allow the use of hexavalent chromium under specific conditions or it may be a complete prohibition.
- 22-2 Response: PAR 1469 does not prohibit the use of hexavalent chromium. If a wetting agent chemical fume suppressant is not certified, the owner or operator may install an add-on air pollution control device or use an SCAQMD approved alternative that is equally effective as the emission limit required for a wetting agent chemical fume suppressant. While PAR 1469 does not limit the amount of ampere-hours to use a hexavalent chromium, owners or operators shall still be subject to the emission limits with corresponding ampere-hour thresholds listed in paragraph (h)(2)
- 22-3 Response: Facilities that are eligible to utilize a certified wetting agent chemical fume suppressant as their only form of control is subject to either a 20,000 annual ampere-hour limit if located less than or equal to 330 feet to a sensitive receptor or a 50,000 annual ampere-hour limit if located more than 330 feet to a sensitive receptor. In the event that wetting agent chemical fume suppressants are not available, the facility would need to install an add-on air pollution control device or use an SCAQMD approved alternative that is equally effective as the emission limit required for a wetting agent chemical fume suppressant.
- 22-4 Response: PAR 1469 includes provisions for owners and operators of facilities who choose to phase-out the use of hexavalent chromium to have fewer requirements than if they continued with the use of hexavalent chromium. PAR 1469 does not include a requirement for the phase-out of hexavalent chromium use for all facilities. Please see Response to Comment 22-1.
- 22-5 Response: Please see Response to Comment 22-4.
- 22-6 Response: Please see Responses to Comments 22-2, 22-3, and 22-4.

From: Universal Metal Plating <universalmetalplating@verizon.net>
Sent: Friday, April 6, 2018 7:30 PM
To: Neil Fujiwara
Subject: RE: Rule 1469

Hello Neil

Just another question about what makes the reverse strip tank a tier 3 chrome tank?

| 23-1

We strip the chrome in our chrome strip tank which is muriatic acid not an electroplating tank. Then we use the reverse strip tank to remove the nickel and copper of die-cast and brass pieces.

Can you please clear this up for me?

Thank you,

Jose

Jose De Jesus Martinez
Universal Metal Plating
1526 W. First St.
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(626) 969-7932 / (626) 969-7931
admin@universalmetalplating.com
<http://www.universalmetalplating.com>

From: Neil Fujiwara [mailto:nfujiwara@aqmd.gov]
Sent: Thursday, April 05, 2018 7:42 AM
To: Universal Metal Plating <universalmetalplating@verizon.net>
Subject: RE: Rule 1469

Hi Jose,

The phase out of hexavalent chromium is an option for facility to avoid installing add-on controls. We have received comments from various stakeholders to prohibit the use of both CFS and hexavalent chromium (if an alternative is available). Rather than outright ban either substance, pilot studies of alternatives of hexavalent chromium and a re-certification process of chemical fume suppressants would take place following the adoption of PAR 1469. Most of your questions seem to be related to the results of both the re-certification of CFS and the pilot studies. If hypothetically CFS are eliminated, under PAR 1469 a facility may continue to use hexavalent chromium if meeting the emission limit.

I hope this at least partially answers some of your questions.

Please contact me if you have additional questions.

Thanks

Neil Fujiwara
Air Quality Specialist

Response to Universal Plating Comment Email, submitted 4/6/18

23-1 Response: Stripping tanks may be considered a Tier III Hexavalent Chromium Tank as it has potential to be a source of hexavalent chromium emissions. Stripping or reverse plating tanks use an electrical current to remove a layer of metal. The electrical current can create hydrogen gas, which forms small bubbles that have a high misting potential, similar to electrolytic tanks. This can lead to hexavalent chromium emissions if there is a high enough concentration of hexavalent chromium in the tank. Based on site visits, staff identified stripping tanks (which are electrolytic) at facilities with a hexavalent chromium tank concentration above 1,000 ppm, thus meeting the definition of a Tier III Tank.

From: Pearce (US), William R <william.r.pearce@boeing.com>
Sent: Thursday, April 19, 2018 9:09 PM
To: Neil Fujiwara
Subject: FW: PAR 1469 Comment Letter
Attachments: PAR146903012018.pdf

Sorry, misunderstood your voicemail. The issue with (n) is that we need to take our existing Operation & Maintenance Plan that is in effect currently and completely revise to include all new requirements that are contained in the rule. This will also include the development of new recordkeeping forms and revision of existing recordkeeping forms to match the new requirements. Also will need to train employees with respect to the new O&M Plan. Not a simple task due to the increased complexity of the proposed rule if the plan and associated documents are to be prepared correctly. Also, this is being completed in conjunction with assuring all other requirements in the proposed rule are being met. Boeing believes the request for 90 days is appropriate under these circumstances.

24-1

Let me know if you need anything and will see you tomorrow.

Response to Boeing Comment Email, submitted on 4/19/18

24-1 Response: The due date for a revised operational and maintenance plan has been revised under paragraph (n)(9) as follows: *“No later than [90 Days After Date of Adoption], the facility’s operation and maintenance plan shall be revised and made available upon request to the Executive Officer to reflect the incorporation of the inspection and maintenance requirements for a device or monitoring equipment that is identified in Table 4-2 and Table 4-3 of Appendix 4 and shall include the elements required in subparagraphs (n)(5)(A) and (n)(5)(B).”*

From: Roger Sanchez <rsanchez@picoriveraplating.com>
Sent: Wednesday, May 2, 2018 3:07 PM
To: Neil Fujiwara
Cc: Jillian Wong; Susan Nakamura; Eugene Kang; Robert Gottschalk
Subject: RE: PAR 1469 Follow-Up: Stationary Source Committee Meeting 4/20/18

Neil

Regarding rule 1469 my main concerns was to make sure that AQMD'S Staff understands that California is losing business right and left do to the fact of to many rules and regulations that affect not only metal finishing shops but business in general.

We don't plate Chrome or Nickel the only Finish we do is Zinc plating only so 1469 RULE Might not be a big issue for us but is always a concern once again before a final decision is done for rule 1469 I ask all of you to consider every one's comments and work with us.

At this time I don't consider a need to meet or have a meeting but if you have any other questions please let me know thanks.

Good day to you.

Roger

25-1

Response to Pico Rivera Plating Comment Email, submitted 5/2/2018

25-1 Response: Thank you for your comment. The SCAQMD staff has worked with stakeholders throughout the rulemaking process to develop a proposal that is health protective and with consideration of cost impacts to facilities.

From: Robina [mailto:robinasuwol@earthlink.net]
Sent: Tuesday, July 17, 2018 11:31 AM
To: Neil Fujiwara <nfujiwara@aqmd.gov<mailto:nfujiwara@aqmd.gov>>; Susan Nakamura <SNakamura@aqmd.gov<mailto:SNakamura@aqmd.gov>>
Subject: Re: Concerns Surrounding NEW School Definition -Page 9

Dear Neil & Susan,

On page #9 I note that the definition of schools has been changed and does not include early education, pre-schools, Early Headstart and Headstart. Perhaps this was an unintentional error. Can you please include them in the definition. Thank you so very much.

26-1

Warm Regards,

Robina

Robina Suwol
Executive Director
California Safe Schools
818.785.5515 office
818.261.7965 cell
www.calisafe.org<<http://www.calisafe.org>>

Responses to Robina Suwol Comment Email, submitted 7/17/18

26-1 Response: The definition of SCHOOL has been revised under paragraph (c)(47) as follows: *“School means any public or private school, including juvenile detention facilities with classrooms, used for the education of more than 12 children at the school in kindergarten through grade 12. School also means an Early Learning and Developmental Program by the U.S. Department of Education or any state or local early learning and development programs such as pre-schools, Early Head Start, Head Start, First Five, and Child Development Centers. A school does not include any private school in which education is primarily conducted in private homes. The term includes any building or structure, playground, athletic field, or other area of school property.”*

From: Pearce (US), William R <william.r.pearce@boeing.com>
Sent: Tuesday, July 17, 2018 7:25 AM
To: Susan Nakamura
Cc: Neil Fujiwara
Subject: PAR 1469 Comments

Just some quick comments (not inclusive) on PAR 1469 that was released on Friday. Formal comments to follow. Please let me know if you have any questions.

- (c)(6) Approved cleaning method is too restrictive. The language in SCAQMD Rule 1420 allows the following: “Clean by wet wash, wet mop, or with a vacuum in a manner that does not generate fugitive lead dust”. Proposed language eliminates ability to use walk behind wet sweepers to clean floors without going through a time-consuming and unnecessary process for District approval. Language should be revised to read as follows:

“Approved cleaning method means cleaning by wet wash, wet mop, damp cloth, low pressure spray nozzle, HEPA vacuum, or other method as approved by the Executive Officer”.

27-1
- (c)(29) has been revised to apparently state that fugitive emissions now include stack emissions. The District has always treated these two categories as separate in the way the emissions are treated in rules and how they are reported to the District. Language should be reinstated that excludes particulate matter emitted from an exhaust stack.

27-2
- (e)(2) now includes a requirement that building enclosure openings are not open more than two hours per operating day. Does the District envision that a system will now have to be put into place to track the time that these doors remain open to assure that the two hours per operating day requirement is not exceeded?

27-3
- (f)(6) requires that buffing, grinding, and polishing workstations have the floors cleaned within 20 feet on each day when these types of operations are conducted. Request that the District consider an exemption (as an incentive) for these types of operations when they are vented to a control device.

27-4
- (g)(3) requires that new labeling requirements are effective 30 days after rule adoption. This is a more complex and time consuming process than can be completed in 30 days due to the number of tanks involved and revision of the associated Health & Safety labels currently on the tanks to allow room for the new signage. Request that labeling requirements be effective 60 days after rule adoption.

27-5
- Appendix 9, #3 requires a minimum 12 point matrix for all tanks, regardless of size. Some of the tanks that will now be covered by the rule only have a surface area of 10 square feet, at least at the Boeing facility. Suggest that the District consider a sliding scale for the point matrix for these smaller tanks.

27-6

Bill Pearce
310-200-3155

Responses to Boeing Comment Email, submitted on 7/7/18

- 27-1 Response: The definition for APPROVED CLEANING METHOD has been modified to include the requested methods and reads as follows, “...means cleaning using a wet mop, damp cloth, wet wash, low pressure spray nozzle, HEPA vacuum, or other method as approved by the Executive Officer.”
- 27-2 Response: The definition of FUGITIVE EMISSION has been revised to restore the proposed exclusion of “*particulate matter emitted from an exhaust stack.*”
- 27-3 Response: PAR 1469 does not require a system or recordkeeping that would track the duration of when doors are open. The facility can decide what measures to If District staff have evidence that a door is open for more than two hours (e.g., by direct observation), then District staff would note a violation of paragraph (e)(2) and subsequent enforcement actions will occur.
- 27-4 Response: Staff does not have a specific exemption for operations vented to a control as material may still land on work space that could result in an accumulation of dust.
- 27-5 Response: Paragraph (g)(3) has been modified as follows: “*Beginning [60 Days After Date of Rule Adoption]...*”
- 27-6 Response: This is an existing requirement and not changed as a result of PAR 1469. Staff is not aware of any facilities which have been unable to meet this requirement in the current rule.

From: Brian Ward <brian@aaaplating.com>
Sent: Wednesday, August 8, 2018 2:42 PM
To: Neil Fujiwara
Subject: Re: PAR 1469 Notice of Public Hearing Documents

Neil-

Will companies on a phase out plan be required to complete another source test?

28-1

Thanks.

Brian Ward
 AAA Plating and Inspection, Inc.
 (310)637-1066

On Wed, 08 Aug 2018 13:53:16 -0700, Neil Fujiwara <nfujiwara@aqmd.gov> wrote:

> To All Proposed Amended Rule (PAR) 1469 Stakeholders,
 >
 > As a reminder, the public hearing for PAR 1469 - Hexavalent Chromium
 > Emissions from Chromium Electroplating and Chromic Acid Anodizing
 > Operations is scheduled for the following time and location:
 >
 > Friday, September 7, 2018 at 9:00 AM
 > SCAQMD Headquarters-Auditorium
 > 21865 Copley Drive
 > Diamond Bar, CA 91765
 >
 > Additionally, the following documents are available and can be
 > accessed by clicking on the titles below:
 >
 > PAR 1469 Draft Rule
 > Language<http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1469/draft-par-1469_30-day-final_8-2018.pdf?sfvrsn=8>
 > PAR 1469 Draft Staff
 > Report<http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1469/draft-par-1469-staff-report_30-day-final_8-2018_complete.pdf?sfvrsn=8>
 > Revised PAR 1469 Draft Socioeconomic Impact Assessment
 > Report<<http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1469/revised-draft-socio-report-par-1469-aug-7.pdf?sfvrsn=8>>
 >
 > If you have any questions, please contact Neil Fujiwara, Air Quality
 > Specialist, by phone at 909-396-3512 or e-mail at
 > nfujiwara@aqmd.gov<<mailto:nfujiwara@aqmd.gov>>.

Responses to AAA Plating and Inspection, Inc. Comment Email, submitted on 8/8/2018

28-1 Response: If the owner or operator of a facility submits a Hexavalent Chromium Phase-Out Plan, the requirements of paragraph (h)(4) to vent a Tier III Hexavalent Chromium Tank to an add-on air pollution control device would no longer apply and no source test is required.

From: Pat V <Patv1.123@outlook.com>
Sent: Thursday, August 9, 2018 1:47 PM
To: Neil Fujiwara; Dr. Joseph K. Lyou; fourthdistrict@bos.lacounty.gov; kaya@ceh.org; geraldcerda@aol.com; Martha Camacho-Rodriguez; Mandi Bane; Public Advisor
Subject: RULE 1469 Stakeholders September 7, 2018 at 9:00am

Hello, As a resident of Paramount & community advocate I have the following concern on the date & time of the proposed public hearing for PAR 1469. Why does the agency continue to hold these working " public hearings" during the times that our low income communities cannot attend or call in to these hearings? Communities that are afflicted by environmental toxins such as Hexavalent Chromium are working class communities that do not have the luxury to take a day off to attend , some might not even have means of transportation to get there. I have attended several of these meetings & in contrast have found a lot of participation mostly by the metal industry. This does not fully engage the communities that are suffering from these problems. Your agency is suppose to protect our communities from environmental toxins. I strongly urge you to reconsider the time & locations of these meetings.

29-1

Regards,
Sara Patricia Huevo
Social Eco Education
SEE

Responses to Sara Patricia Huezo Comment Email, submitted 8/9/18

29-1 Response: In an effort to promote community involvement during the rule development process for PAR 1469, staff held two of the 13 working group meetings during the evening at the Dollarhide Community Center in Compton. Working Group meetings held at SCAQMD headquarters also included a conference call option, which allowed members of the public to participate remotely. Also, staff held two informational meetings on August 28th and 29th, 2018 at 5:00 PM, in the Boyle Heights and El Monte communities. Documents related to the development of PAR 1469, such as presentations, are sent to working group members and can be found on the proposed rule page on SCAQMD's website (available on the internet at <http://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules#1469>). Staff have been available and responsive to questions from stakeholders and interested parties throughout the rulemaking process.

The Public Hearing for PAR 1469 is scheduled for 9 a.m. on November 2, 2018. The public hearings for adoption of SCAQMD rules occur during the SCAQMD Governing Board meetings, which are held on the first Friday of every month starting at 9 a.m. Members of the public who are unable to attend the public hearing in person and wish to submit written comments for review prior to the hearing must submit such comments to the Clerk of the Board on or before Tuesday, October 23, 2018, as noted in the Notice of Public Hearing. The public hearing is also webcast live on SCAQMD's website at <http://www.aqmd.gov/home/news-events/webcast>.

From: Wesley Turnbow <wturnbow@emeplating.com>
Sent: Tuesday, August 21, 2018 4:01 PM
To: Susan Nakamura
Cc: Neil Fujiwara
Subject: SCAQMD PAR1469 - More Thoughts About The Remaining MFASC Concerns

Hello Susan,

The MFASC has thought through your helpful responses to our issues and the modified language provided. Yet, we feel concerns still remain. Here they are:

1) Regarding the protection for small shops, Section (l)(7-9) on page 45. It boils down to if wetting agent chemical fume suppressants ultimately are not allowed, then on July 1, 2021 facilities may use an alternative. This as yet undetermined alternative has to meet <0.01 milligrams per ampere hour, be approved by the district (CARB, too?), used with their approval, and permitted. The SCAQMD is to test and approve materials, then provide a list. Facilities could choose from the list and comply.

30-1

This now seems to fall on the facilities to prove that an alternative is adequate and then jump through the hoops of approval and re-permitting. Can small facilities afford that and accomplish that in the time allowed?

2) Regarding the PTE triggers, Section (p)(4) (A) requires reporting of "any failed smoke test, any failed source test, any exceedance of a permitted ampere-hour limit, or any malfunction of a non-resettable ampere-hour meter" within "four hours of the incident or within four hours from the time the owner or operator of a facility knew or reasonably should have known". That's open for interpretation, and ominous. A reasonable scenario is that a shop is late in performing a semi-annual smoke test, they perform one and it fails. The shop immediately shuts down the process. They are now required to call it in. When should they have known about the failure? A day ago when they were supposed to run the test? The shop has probably run the tank after they reasonably should have known... PTE now required.

30-2

I think that tightening and editing a bit of rule language may alleviate these two concerns. What do you think?

-Wesley

-----Original Message-----

Sent on 8/16/2018:

Hi Wesley,

Please find attached a highlighted copy of PAR 1469 Draft Rule Language.

The requirements that were discussed this afternoon are highlighted and can be found on Page 45 and Page 68.

Please let me know if you have any questions.

Thank you

Neil Fujiwara
 Air Quality Specialist

Responses to Wesley Turnbow Comment Email, submitted 8/21/18

- 30-1 Response: PAR 1469 allows facilities to utilize an SCAQMD approved alternative air pollution control technique to meet an equivalent emission rate of 0.01 mg/ampere-hour. As described in the staff report, the SCAQMD approved alternative air pollution control technique(s) will undergo an approval process by SCAQMD, in cooperation with CARB, that will include source tests conducted by staff. If smaller facilities utilize the SCAQMD-approved alternative air pollution control technique, the facility will not be required to conduct initial or recurring source tests. Eligible facilities will need to apply for permit modifications to their chromium electroplating or chromic acid anodizing processes. A SCAQMD approved alternative air pollution control technique will streamline the requirements on facilities and provide facilities with a lower cost option within the time allowed.
- 30-2 Response: In the event that the owner or operator of a facility is “late” conducting a semi-annual smoke test, the owner or operators of the facility would be in violation of subparagraph (m)(1)(E) and be subject to enforcement action. The owner or operator of a facility would be subject to the requirement to shut down all Tier II or Tier III Hexavalent Chromium Tanks that are associated with the failed smoke or slot velocity test after the test is conducted, not on the day when they needed to run the test to be compliant with the smoke test schedule specified in subparagraph (m)(1)(E). The facility would be subject to permanent total enclosure requirements if the tank associated with the failed smoke or slot velocity test is not shut-down following failure of the test.



Comments on the Draft Socioeconomic Impact Assessment for PAR 1469

We are pleased to have the opportunity to provide comments on behalf of the Metal Finishing Association of Southern California (MFASC) on the South Coast Air Quality Management District's (SCAQMD's) draft Socioeconomic Impact Assessment (SIA) for Proposed Amended Rule (PAR) 1469.

While most of our specific comments represent instances where we criticize the draft SIA and suggest improvements to it, this should not detract from our appreciation for the notable effort the District staff have made in estimating the compliance costs and economic impacts of PAR 1469 and summarizing their analysis in the draft SIA. District staff have conducted an open and collaborative process with stakeholders to develop and analyze PAR 1469. The product of this effort – the proposed rule itself and its supporting documentation – have benefited from many discussions and sharing of information and perspectives. We hope these comments will contribute to an improved SIA and to further improvements in the proposed rule.

MFASC's Perspective on Economic Issues Associated with PAR 1469

The draft SIA estimates the costs that affected chromium electroplating and anodizing facilities in the SCAQMD will incur in complying with the requirements of PAR 1469 and then analyzes the economic impacts that will result from these compliance costs. The magnitude of the economic impacts that are projected depends directly on the magnitude of the compliance costs that are estimated.

The draft SIA estimates that affected facilities will incur compliance costs amounting to \$2.6 - \$4.3 million per year. We estimate costs higher than these. In an analysis in which we estimated compliance costs for a set of nine or ten MFASC member-owned facilities and then scaled up to all facilities in the District, we estimated costs of \$6.5 million per year, about 50% more than the higher cost scenario estimate projected in the draft SIA. While SCAQMD staff and we shared data and agreed on many elements of the cost analysis, there remain in the draft SIA a few areas where we believe staff have missed some likely significant costs and have underestimated others.¹ We provide comments in this document on how the District staff can improve the cost estimates in the draft SIA.

Despite underestimating compliance costs, the draft SIA nevertheless finds that PAR 1469 will have significant and worrisome adverse economic impacts on the electroplating and anodizing industry. The draft SIA estimates that:

¹ Another reason why our cost estimates may be higher than those in the draft SIA is that our sample of nine or ten facilities from which we extrapolate to all 115 affected facilities may be representative of the MFASC membership but perhaps not entirely representative of the full set of affected facilities. In particular, our sample may over-represent anodizers (who the draft SIA estimates will face higher than average compliance costs per facility from PAR 1469) and under-represent decorative and hard chrome platers (who are estimated to face lower than average compliance costs, unless non-PFOS fume suppressants are not recertified).

- The average electroplating/anodizing facility will face PAR 1469 compliance costs amounting to 1.8% to 3.3 % of revenues.
- The smaller facility segments of the industry will face even higher compliance burdens -- 3.4% to 7.4% of revenues on average for the 27 small decorative plating facilities, for example.

A regulatory cost burden of this magnitude will eliminate most or all of the average electroplating or anodizing facility's profit margins. By way of comparison, the job shop electroplating industry's pretax profit margin nationally over the past 27 years has averaged under 4%. (This is a low-margin, highly competitive industry.)

While the SCAQMD has not as a general matter established a level of cost impact relative to revenues that they consider threatening for a regulated industry, other regulatory agencies have. Both the Federal Environmental Protection Agency (EPA) and Occupational and Safety and Health Administration (OSHA) have adopted cost thresholds at 1% or 3% of revenues as levels of concern. EPA has said that 3% or more of revenues represents an "unquestionably significant" impact on small businesses. OSHA traditionally uses 1% of revenues and 5 to 10% of profits as thresholds of economic impact concern for their regulations. We're looking here at PAR 1469 costing 100% of profits for many facilities.

We fear that the compliance costs the draft SIA has projected for the industry in the four South Coast counties would cause a significant share of the industry to go out of business. Hundreds or even thousands of good jobs will be lost in the metal finishing industry and the industry's suppliers and customers.

Note that all MFASC members know of competitors nearby -- in Northern California, in San Diego, in Mexico and in other States -- that won't face these regulatory costs and that will take much of the South Coast producers' business if local firms were to try to raise their prices by 3% or 5% or 10% to cover the PAR 1469 costs. The findings in the draft SIA suggest that the local industry faces an unfortunate choice between absorbing the regulatory costs and seeing their already modest profitability vanish, and increasing prices to cover the regulatory costs and losing a significant portion of their business to nearby competitors who don't face the PAR 1469 costs.

Summary of Comments on the Draft SIA

We provide the following specific comments suggesting improvements to the draft SIA. If the draft SIA is improved as we suggest, it will further support the MFASC's concerns about the adverse impacts of PAR 1469.

- Capital costs for add-on APCDs will not show economies of scale to the extent assumed in the draft SIA. Larger systems will have lower unit costs than smaller systems, but not to the degree that District staff have estimated in the draft analysis.
- The O&M costs of an air pollution control system should be estimated in relation to the volume of airflow needing control, not to the capital costs of the system. Making this change to the

31-1
Cont

manner in which O&M costs are estimated in the SIA will bring the estimates much closer to the available cost information for systems that are now operating.

- Costs to meet the enclosure requirements are underestimated. The enclosure provisions will require facilities to do more than meet the 3.5% limitation on openings in the building envelope. There will be additional costs to meet the cross-draft requirements and to provide supplemental ventilation at some facilities.
- The SIA underestimates costs for restrictions on spray rinsing of parts. The SIA estimates costs for these requirements by assuming that facilities with automated lines will install drip trays between each electroplating or anodizing tank and adjacent tanks. For many facilities with automated lines this won't be feasible, and alternative solutions should be costed out. Compliance costs should be estimated also for the facilities that do not have automated lines.
- Additional costs for source testing and for permitting should be included. The draft SIA estimates some costs, but misses the costs for labor hours that facility personnel will expend in managing these activities. The draft SIA also may underestimate the number of new permits that will need to be acquired and renewed as a result of PAR 1469.
- In view of the many uncertainties in estimating compliance costs, the sensitivity analysis in the draft SIA that aims to provide high and low compliance cost estimates and to bracket the likely true cost is important and should be expanded. The SIA should include more of the variables that lead to large uncertainties in estimating costs as differences that are analyzed in the low cost scenario versus the high cost scenario. A high cost scenario is not less reasonable or less likely to prevail than a low cost scenario, and implications in the draft SIA to the contrary should be deleted.
- The SIA's facility-based impact analysis is key in evaluating whether PAR 1469 will be affordable for the affected electroplating and anodizing facilities and in projecting the number of facilities that are likely to close because they will not be able to afford the PAR 1469 compliance costs. We appreciate the District staff's work to include this analysis in the draft SIA. While this analysis in the draft SIA addresses the average facility in each of the categories into which the industry has been divided, the final SIA should do better in portraying the variability in PAR 1469 compliance cost burden across all affected facilities in each category. We suggest a methodology by which District staff could use available data to estimate the facility-by-facility variation in cost burden (facility-by-facility ratio of compliance costs to revenues) and to project the number of facilities that are likely to find compliance not to be affordable. Such an analysis should be included in the final SIA.

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Capital Costs for Add-on APCDs Will Not Show Economies of Scale to the Extent Assumed in the SIA

We appreciate the District staff's collaborative work with industry consultants to obtain actual incurred cost figures, vendor quotes, engineering estimates and other data with which to develop a relationship that projects the capital cost/cfm for different sized HEPA APCD systems. The individuals involved in this work ultimately agreed on a representative figure of \$23/cfm for the capital cost of a relatively small system of approximately 5,000 cfm. While the seven capital cost estimates collected by the MFASC's consultants suggested a lower average figure of about \$19.50/cfm, these individual estimates and this average figure did not include any costs for local approvals, building electrical upgrades (typically a thousand dollars or more for each system) and sales tax (5 - 7 % typically). The group judged \$23/cfm to be a representative figure that might include the latter two of these additional items.² The figure of \$23/cfm also matched the figure obtained by SCAQMD staff from an experienced Southern California

31-2

² We believe that the large number of local approvals typically required will likely result in costs exceeding \$23/cfm when all costs are included. Unless the building has been built in the last several years – which none of the nine sample facilities in the MFASC's cost analysis have been – when the company goes to the city to get a permit to install the APCD or upgrade the electrical, this will trigger requirements for a number of upgrades (tenant improvements) that may require the facility owner to bring the entire building up to current code. The upgrades can include:

- Seismic upgrades. Could include bracing of the roof and walls. Possible replacement of the entire roof structure and foundation upgrades.
- Electrical upgrades (do you have enough power to run all your equipment and the new scrubbers?). If not, you need to bring in new service that opens your entire electrical system to upgrades to meet current code.
- If you install anything on the roof, be prepared for equipment line of sight barriers as well as possible structural upgrades.
- Noise compliance studies may have to be conducted.
- Possible sound barriers may have to be installed.
- ADA compliance (Handicapped Parking, compliant paths of travel, ADA compliant bathrooms, etc.)
- The building will probably be reclassified as an H4 occupancy (High Hazard). This brings with it fire sprinkler requirements, fire and hazard alarm and monitoring, and 2- to 4-hour fire barrier walls between H4 and other occupancies. Though a number of cities don't seem to push it this could require the replacement of all ductwork with CPVC or installation of fire heads in all ductwork.
- This can also affect secondary containment. If you have to install fire sprinklers or increase their capacity, the water from the sprinklers (20 minutes) also has to be taken into account for secondary containment calculations.
- Depending upon where your chemical storage area is, fire bunkers may have to be installed or alternate emergency exits and paths of travel will need to be considered.
- Since most older neighborhoods do not have the water pressure at the street to accommodate an H4 occupancy, you may have to install a fire house with a fire pump. Big dollars here.
- Is your lighting Title 22 compliant?
- Water-tolerant landscaping requirements. Yes you may have to tear out the grass.

While we agree with the draft SIA statements to the effect that costs for the upgrades likely to be required by local governments are both uncertain and difficult to predict (see page 17), we believe that the capital cost figures for APCDs used in the draft SIA should be viewed in light of the failure to include any costs reflecting the usually significant required local upgrades.

installer/vendor and was very close to the figure of \$22.62/cfm that is obtained by updating to 2017 dollars CARB's estimate for the 2008 PATCM for a 5,000 cfm system.

The SIA appropriately recognizes that the cost per cfm for a larger APCD system will likely be somewhat lower than the cost per cfm for a smaller system. There will be economies of scale in purchasing and installing a larger system. However, we believe that the step function approach and the specific figures chosen by the District to represent these economies of scale in the SIA cost analysis are too crude. The District's approach for reflecting economies of scale should be improved.

The District's step function approach generates some illogical results. If, as the SIA assumes (page 16), a system of up to 5,000 cfm costs \$23/cfm and a system of between 5,000 and 10,000 cfm costs only \$17/cfm, then the District would project that a 6,500 cfm system will actually cost less to purchase and install than a smaller 5,000 cfm system. (5,000 cfm x \$23/cfm = \$115,000 while 6,500 cfm x \$17/cfm = only \$110,500.) The same sort of illogical result occurs for larger systems also; the District's chosen relationship would project, for example, that a 12,000 cfm system (at \$14/cfm) would cost less than a 10,000 cfm system (at \$17/cfm).

The District's chosen step function approach also does not reflect what most engineers would expect to be a smooth increase in economies of scale as system size increases.

It would be better, in our view, to represent economies of scale in capital costs for APCDs with a smooth, continuous function. This could be done in either of two ways:

- Most simply, the District could assume a typical exponent of 0.7 or 0.8 to represent scale economies in the capital costs of air pollution control. Doubling the size of the system to be purchased is typically assumed in costing references (e.g., EPA's *Air Pollution Control Cost Manual*) to increase the cost of an air pollution control system not by a factor of two but instead by a factor of $2^{0.7}$ (=1.62) or $2^{0.8}$ (=1.74). If a 5,000 cfm system costs \$115,000 (\$23/cfm), then a 10,000 cfm system would be estimated to cost \$187,000 (\$18.70/cfm) using the 0.7 exponent or \$200,100 (\$20.10/cfm) using the 0.8 exponent.
- Alternatively, the District could perform a regression analysis to develop a relationship between system capital cost and system size in cfm, using the five (most appropriate) or seven (total, of which two are less appropriate) HEPA system cost quotes that we obtained and provided to District staff earlier this year.

Either of these approaches to representing economies of scale would provide two significant advantages over the step function approach the District uses in the Draft SIA. Either would: 1) Avoid the illogical results obtained using the District's approach; 2) Provide a smooth, continuous functional relationship that easily allows for estimating the cost of any particular sized system and reflects continually increasing economies of scale as the size of the APCD increases.

The District appears to have drawn the SIA cost estimates for systems larger than 5,000 cfm from the CARB PATCM estimates, but in our view staff have misinterpreted the CARB estimates. CARB estimated

31-2
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\$17/cfm specifically for a 10,000 cfm system, not as staff assumes in the draft SIA for all systems in the range from 5,000 cfm to 10,000 cfm. A system toward the low end of this range, i.e., only slightly larger than 5,000 cfm, would have a cost substantially higher than \$17/cfm. Likewise, CARB estimated \$14/cfm specifically for a 20,000 cfm system, not for all systems in the range from 10,000 to 20,000 cfm. A system toward the low end of this range would have a cost much closer to \$17/cfm (the CARB figure for a 10,000 cfm system) than to \$14/cfm as the District has assumed for the SIA.

Finally, note that Ike Molvi, an installer/vendor with whom District staff have been in contact, estimated \$23/cfm for a 5,000 cfm system and \$18 - \$19/cfm for a larger 20,000 cfm system.

In sum, we believe that the SIA estimate of \$23/cfm in capital cost for a 5,000 cfm system is reasonable (although it still likely does not reflect the costs of local approvals necessitated by construction of the system), but that the SIA cost estimates for larger size systems are too low, reflecting too large a reduction in costs as system size increases.

Please note also that District staff appear perhaps to have made an error in the logic of their worksheet in which capital costs for APCD systems have been estimated.

SCAQMD staff provided us with a redacted copy of the worksheet used to develop the compliance cost estimates in the SIA. The worksheet is redacted in two respects: 1) Information that could reveal the identity of any particular facility has been removed; and 2) The formulas linking cells in the worksheet have been removed, leaving each cell so that it includes only a number without explanation of how that number might have been derived. The latter alteration to the worksheet makes it somewhat difficult for us to understand and to trace the analysis, but we believe in most instances that we have figured out what the formulas are likely to be in the non-redacted worksheet. We appreciate the opportunity to review this material and appreciate the effort the District staff have made in explaining this material to us.

The possible error that we are concerned with occurs in the worksheet titled "Cost Sheet for PAR 1469_StuCopy". In the first tab (High Estimate - Rev) of this worksheet, in Column D, the average tank size is multiplied by the number of tanks at the facility to get the total square footage of tanks at the facility. In column E, this total square footage at the facility is multiplied by 150 cfm/sq ft (plus 30% more for the tanks with hot, saturated air flows assumed to exist at medium anodizers) to obtain the total airflow needing APCD control at the facility. In column J, the total airflow needing APCD control is then multiplied by \$23/cfm (up to 5,000 cfm) or by \$17/cfm (5,001 to 10,000 cfm) or by \$14/cfm (10,001 to 20,000 cfm). This procedure of totaling the cfm for all the tanks at the facility and then multiplying by the cost/cfm step function seems inappropriate. In the high cost scenario, the assumption is supposed to be that there will be one APCD system per tank needing APCD control. If so, it is not appropriate to total the cfm for all the tanks at the facility needing control and then to price a single large APCD that will provide control for that total air flow. Instead, distinct APCDs should be priced individually for the air flows for each tank needing APCD and then costs should be added across the multiple APCDs. The error lies in applying the cost/cfm figure (\$23 or \$17 or \$14 per cfm) to the total air flow at the facility rather than to the air flow for each individual tank.

31-2
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The Estimated O&M Costs of an Air Pollution Control System Should be Related to the Volume of Airflow Needing Control, Not to the Capital Costs of the System

Applying an approach used by CARB for the 2006 chromium electroplating ATCM and relying mostly on data provided by industry, the SIA applies cost figures to the effect that the annual operating and maintenance costs for an APC system will equal 18% of that system's capital costs. We believe that a better interpretation of the available data would suggest instead applying an annual O&M cost of roughly \$6 per cfm or, if the District wishes to reflect some economies of scale in the estimates, perhaps \$10 per cfm for smaller systems of approximately 5,000 cfm and \$4 per cfm for larger systems exceeding 15,000 cfm.³

The table shown on the page after next summarizes the information on O&M costs for HEPA filtration APCDs that we provided to District staff earlier. We've added to the table a final column at the right that shows O&M costs as a function of the APCD system size expressed in cfm, which we believe is the best way to estimate O&M costs. This is in contrast to the CARB 2006 approach that has been adopted for the draft SIA, in which annual O&M costs are expressed as a function of APCD system capital costs. In our view, O&M costs are most directly a function of an APCD system's size measured in terms of airflow, and any observed correlation between a system's O&M costs and its capital cost is due in fact to more fundamental relationships between the system's capital cost and its size/airflow and between O&M cost and size/airflow. Why not express the relationship between system size and O&M cost directly rather than indirectly in two steps via the relationship between system size and capital cost? The District staff's approach to estimating APCD O&M costs yields the following cost/cfm estimates when the 18% of capital cost figure is combined with the staff's capital cost estimates (which we discussed earlier and suggested that they represent too much in the way of economies of scale).

31-3

**O&M Costs for APCDs as a Function of System Size in cfm
Figures Resulting from SCAQMD Draft SIA Approach**

APCD system size (cfm)	Capital cost/cfm	Annual O&M cost relative to capital cost	Resulting estimated O&M cost/cfm
Up to 5,000	\$23	18%	\$4.14
5,001 to 10,000	\$17	18%	\$3.06
10,001 to 20,000	\$14	18%	\$2.52

The estimates the District staff uses in the SIA are too low when expressed on a per cfm basis in this manner. For small APCD systems under 5,000 cfm the staff's approach results in estimated O&M costs of \$4.14/cfm, in contrast to the estimate of \$13.89/cfm for the only small system in our limited data set. For large systems exceeding 10,000 cfm, the staff's approach results in estimated O&M costs of \$2.52/cfm in contrast to the three estimates for actual large systems that range from \$3.18 - \$4.10/cfm.

³ We have no data for systems in the vicinity of 10,000 cfm and thus no recommendation specifically for them, although somewhere between the \$4 and \$10 per cfm figures for smaller and larger systems might seem reasonable.

Annual Operating and Maintenance Costs for APCDs for Hex Chrome Plating/Anodizing/Finishing Tanks

Unit Cost Assumptions:

Annual permit renewal (SCOWMD estimate): \$1,409 per APCD
 Initial permit application (SCOWMD estimate): \$4,354 per APCD (assume average of 7 yrs after initial permit before significant changes and new permit application needed. Vry cost thus = (initial application cost + 6*annual application cost)/7
 Superintending, inspecting, APCD operation: 3 hours/month/APCD (Workload estimate by one facility engineer after compliance w/PAR 1469)
 Reading APCD gauges, reading data logfiles: 6 hours/month/APCD (Estimate by one facility engineer for lab personnel workload after compliance w/PAR 1469)
 Cost for UFA filter: \$700
 Cost for HEPA filter: \$700
 Capital cost for HEPA + scrubbers/mesh pad APCD: \$23 weekly/yr
 Avg engineer/supervisor/lab technician cost: \$44.84 per hr
 Avg labor cost: \$22.42 per hr
 Electricity cost: \$0.18 per kW-hr (Note: seasonal and time-of-day industrial rates will end up higher than this figure. E.g., one facility pays avg of \$0.17/kW-hr winter and \$0.35/kW-hr in summer. This is one imptr reason why these O&M costs are likely underestimated)

Facility Number	Number of APCD Systems	APCD System	Capital Cost	Airflow (cfm)	Annual Energy Cost Reported or Estimated by Facility	Filters	Replacement Schedule	Cost per yr to purchase replacement filters	Estimated Crew Hours per Changeout	Crew Cost per yr for filter replacements	Hazardous Waste Disposal Cost	Total Filter Cost/yr	Overnight Training Data Logging, etc. Hour/yr	Overnight etc. Cost/yr	Permit cost/yr	% of Capital Cost/yr for Property Tax, Insurance, Overhead (Source: EPA)	Total Annual O&M Cost for APCD	Annual Cost as % of Capital Cost	Annual Cost per cfm of Airflow
1	1	7 plating tanks/baths vented to scrubber, mesh pad, prefilters, HEPA + some bldg ventilation	\$890,000	30,000	\$48,000	30	2x/yr, 30 per changeout	\$18,000	36	\$3,228	\$5,600	\$26,828	420	\$18,833	\$1,830	\$27,600	\$123,091	18%	\$4.10
2	2	2 systems serving 7 hand chrome plating tanks	\$250,000	4,500	\$5,371	9 prefilters 9 intermediate 9 HEPA	Prefilters quarterly Others 2x/yr Thus avg 18 per quarterly changeout	\$21,600	21.6	\$3,874	\$8,320	\$33,794	216	\$9,685	\$3,659	\$10,000	\$62,510	25%	\$13.89
3	1	1 system serving 6 hand chrome plating tanks: mesh pad, prefilters, HEPA	\$403,650	17,550	\$12,000	9 prefilters 9 HEPA	2x/yr, 30 per changeout	\$10,000	21.6	\$1,937	\$5,600	\$17,537	?	\$8,333	\$1,830	\$16,146	\$55,946	14%	\$3.18
4	1	vent and control didramate seal tank + building	\$370,000	17,000	\$5,000	28 HEPA 10 UFA	HEPA 2x/yr, UFA 3x/yr Thus 38 filters once, 28 fresh time, avg 33 at 2x/yr	\$23,800	39.6	\$3,551	\$6,000	\$33,351	108	\$4,843	\$1,830	\$14,800	\$59,824	16%	\$3.52

Average: \$6.17
 Weighted average: \$4.36

Costs to Meet the Enclosure Requirements are Underestimated

For our sample of facilities, we estimate higher costs to meet the enclosure requirements than the costs estimated in the SIA. We expect six sorts of costs that should be estimated in the SIA:

1. Costs to close roof vents that are within 15 feet of Tier II or III tanks. Roof vents this close to a tank must be closed. The area of any such roof vents counts toward the total square footage of building openings, and thus the closure of any such roof vents helps toward meeting the 3.5% allowance. Among the sample of 9 facilities in our cost analysis, we believe there are zero such openings within 15 feet of what will be Tier II or III tanks. (There were many within 30 feet, however.) The ceiling height of the great majority of electroplating/anodizing buildings is 20 feet or more, meaning that a vent even directly above a tank with 3-foot walls on a 2-foot platform will not be within 15 feet of the tank. We suggest that the District's cost analysis should not include roof vents in the scenario that is costed out for closing openings.

2. Costs to close additional openings as necessary to meet the 3.5% allowance. The draft SIA suggests that most facilities are already below 3.5% openings, and we agree. Among our 9 sample facilities, only two appeared currently to exceed 3.5%. One facility would need to reduce its openings by about 140 ft² and the other by about 100 ft² in order to achieve 3.5%. One of these facilities would likely choose to install an automated 14' x 12' roll-up door to close a large bay opening at a cost of about \$10,000. The other would likely cover over a window, close a large wall vent, and replace an open doorway with plastic strip curtains, at a total cost of perhaps \$2,000.

3. Costs to ensure that openings on opposite sides of the building are not open simultaneously, except for a maximum of 2 hours per opening per day to allow ingress/egress of personnel and equipment. This requirement applies additionally, beyond the requirement to limit total openings to 3.5%. In our view, this means in practical terms that in any situations where there are openings of any sort on both sides of a building and/or in both the front and back walls of the building then all the openings on one of the two opposing walls must be fitted in some manner that keeps them generally closed, with the exception of a maximum of 2 hours/day for ingress/egress. Thus, for example, even for a building that already easily meets the 3.5% requirement, if on one side there are several open windows, a wall vent and a swamp cooler vent and on the other side there are several open doorways, then all of these items on one or the other of the two sides must be fitted in a way so that they remain generally closed, except when specifically opened for ingress/egress. Perhaps all of the open doorways on one side would be fitted with plastic strip curtains or doors that close automatically and remain closed except when being used, or perhaps the windows, wall vent and opening for the swamp cooler on the other side (none of which are used for ingress/egress of people or equipment) would be permanently closed, but one or the other of these two options would need to occur. Among our nine sample facilities, most had openings on two opposing sides of their building that are typically kept open, and some facilities had openings on all four of the opposing sides of the building. The District should estimate the costs to close a typical assortment of such openings in addition to the costs to reduce the total area of openings to meet the 3.5% requirement. A reasonable collection of such openings to assume perhaps as typical for a higher cost scenario might include two walls needing closures (one side wall, and either the front or back wall);

31-4

one wall with a small bay opening for entry and exit of equipment, an open doorway for personnel, a large window and a large wall vent, and another wall with only an open doorway and a large window or wall vent. As a representative lower cost scenario, one might assume only a single wall needing closures for an open doorway and a large window or wall vent. The costs to close these openings at typical facilities in a manner such that they could be opened when necessary would likely substantially exceed the costs the District has estimated on page 12 of the draft SIA (4 openings per facility at a cost of \$200 each). While the assumption of 4 openings per facility seems perhaps reasonable as a middle cost scenario, the assumption of \$200 per opening is much too low to represent the installed cost of automated roll-up doors or closing large vents and disposing of fans, housings and swamp coolers or fitting a door with an automatic closer or installing a good strip curtain arrangement in an open doorway.

4. Costs to close any openings that directly face toward and are within specified distances of sensitive receptors or schools. We did not inquire about such openings with our nine sample facilities, and thus did not estimate the costs to close them. The draft SIA also does not appear to have investigated how many openings of this sort exist and how much it might cost to close them. We understand that the District has GIS capabilities to determine how close each facility is to sensitive receptors and schools, and this would provide a start toward estimating the costs to meet this requirement.

5. Costs to address special or unusual closure situations that require structural changes in facilities. We appreciate the effort made in the SIA to recognize and account for such situations (see the two situations described at the bottom of page 12). In the first of these referenced situations, the large gaps between the wall and the roof do not necessarily have to be closed to meet the 3.5% requirement, but without closing them there will inevitably be substantial cross-drafts in the building. It would perhaps be more accurate to attribute the costs of closing these gaps to the cross-draft requirement than to the 3.5% requirement. An engineer for the facility has estimated the cost to extend the wall and join it to the roof would be about \$50,000. In the other situation, as described in the SIA, the facility's managers have what they view as compelling reasons for keeping large openings at both ends of their large building open -- worker health, safety and comfort; and the logistics of moving equipment and very large parts in and out. They would prefer to meet the cross-draft requirements of PAR 1469 by extending some existing interior walls within the building to make the plating area inside the building into an enclosure rather than by closing the openings at one or the other end of the building. It may be true, as the SIA indicates, that this represents a business choice and may not be the least-cost way to meet the PAR 1469 enclosure requirements. However, if one takes a broad view on what constitutes "costs", including worker discomfort and logistical difficulties as costs in addition to construction activities, then this facility's preferred strategy to develop an enclosure within the building may well be the least-cost solution for them.

6. Costs for additional ventilation to provide acceptable conditions for workers after the facility is closed up. Among our nine sample facilities, the managers of five of them believed that the combined impact of the closures due to the five requirements cited above would leave the building as needing more ventilation after it is closed up than would be provided assuming: 1) current levels of ventilation plus 2) the additional airflow that will be provided by the projected new APCDs for Tier III tanks. In our cost

31-4
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analysis, we attempted to quantify how much additional ventilation would be needed to meet a target of 6 air exchanges per hour within the building enclosure, and then split this additional ventilation needed into a share attributable to insufficient ventilation now and a share attributable to the additional closures due to PAR 1469. We admit that neither four of the five facility managers who thought they would need additional ventilation nor our calculations had the benefit of input or review by ventilation engineers. One of the five facilities did have a knowledgeable consulting engineer review the current facility ventilation situation relative to the PAR 1469 requirements and estimate needs and costs. In our cost analysis, we estimated that the total annualized cost for additional ventilation needed by the five facilities upon compliance with PAR 1469 would be about \$14,000/year/facility.

One additional point to make about estimating the costs to meet the enclosure requirements of PAR 1469 is that these requirements apply to each enclosure within which Tier II and III hexavalent chromium tanks are located. The draft SIA equates enclosures with facilities, assuming in effect one enclosure per electroplating/anodizing facility, and scaling up the estimated unit compliance costs for a typical enclosure by multiplying by the 111 facilities affected by the enclosure requirements. Some electroplating/anodizing facilities, however, have multiple buildings or multiple enclosures within which Tier II and III tanks are located. Among our nine facilities that serve as case studies for our cost analysis for the enclosure provisions, there are 11 or perhaps 12 buildings within which Tier II and III hexavalent chromium tanks are located and there will be 12 enclosures within the meaning of PAR 1469. The SIA cost analysis for the enclosure requirements should scale up appropriately to the number of enclosures within the SCAQMD, not simply to the number of affected facilities.

31-4
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The SIA Underestimates Costs for the Restrictions on Spray Rinsing of Parts

PAR 1469 would require operators when spray rinsing parts or equipment that were previously in a Tier II or Tier III hexavalent chromium tank to:

- Do so with parts fully lowered inside a tank where the overspray and all of the liquid is captured inside the tank; or
- Alternatively the operator may rinse above a tank if the tank is equipped with splash guards in good condition and the splash guards are cleaned weekly with water.
 - For a tank where installation of splash guards would restrict an overhead crane system, the operator may rinse above the tank if s/he uses a low pressure spray nozzle and the water flows off of the part or equipment and into the tank.

31-5

The SIA states that costs are estimated for these provisions by assuming that operators will comply by installing a drip tray between each electroplating or anodizing tank and adjacent tanks for facilities with automated lines. The capital cost of an installed drip tray is estimated at \$310 including installation labor, and no cost is estimated for maintenance, cleaning or replacement. Several aspects of this cost estimate raise questions:

- Despite the statement to the effect that costs are estimated only for drip trays at facilities with automated lines, the cost estimate appears to reflect one drip tray for each electrolytic tank and for each Tier III tank (305 total tanks) without regard to whether the facility has an automated line or not. The estimate thus reflecting one drip tray per electrolytic or Tier III tank appears to presume that a drip tray needs to be installed between the electrolytic/Tier III tank and an adjoining tank on only one side of these tanks, as if parts are always moved out of one of these tanks in only one direction. Movement of parts in either direction from one of these tanks would imply in most instances drip trays on both sides of the tank, not only on one side.
- The cost estimate presumes that it is feasible in all instances where there are electrolytic or Tier III tanks to install and maintain and clean drip trays, and that drip trays represent the only method that operators will elect to meet the spray rinsing requirements. The SIA does not offer any suggestions about the circumstances under which other options available under PAR 1469 such as rinsing with parts fully lowered into a tank would be chosen. When might rinsing with parts fully lowered into a tank be feasible and cost-effective? Nor does the SIA offer any suggestion about the circumstances under which it may be feasible or not feasible or cost-effective or not cost-effective to rinse above a tank with a low pressure spray nozzle with the water flowing off the parts and into the tank.

We suggest a different approach to estimating the costs to comply with the PAR 1469 spray rinsing requirements.

In April of 2018 we conducted a quick survey (supplemental to our original cost survey) of nine MFASC member-owned facilities to acquire information needed to estimate their costs to comply with these and two other specific PAR 1469 housekeeping provisions. Six of the nine facilities participating in this project at that time responded. Respondents cited several reasons why they would incur additional costs if they were to perform their spray rinsing in the manner prescribed by PAR 1469:

- At most facilities, there are few or no tanks that are empty or almost empty and into which parts can be fully lowered for rinsing that are in the same process lines and near the plating or anodizing tanks. In general, fully in-tank rinsing is not an available option for most automated lines. For hand lines, empty tanks could be found within which spray rinsing could occur, but available empty tanks are often some distance away and carrying parts to distant tanks for rinsing would substantially increase the time required for rinsing and make it difficult to return the collected plating chemicals.
- Installation of spray bars that spray rinse slightly downward while parts are raised by a hoist out of the liquid in a tank would maximize the fraction of overspray that is collected in the tank and would meet the PAR 1469 requirements. Although one of the survey facilities has such a system and finds that this system has reduced operating costs, it would be quite costly to install a spray bar system on a retrofit basis for an existing line of tanks served by an overhead crane. An

31-5
Cont

ascending rinse spray bar system could be installed cost-effectively only when a tank line is being newly constructed or significantly modified.

- Most facilities thus indicated that most of their spray rinsing is done above tanks, while making an effort to ensure that overspray and drips are collected in the tanks below. The tanks above which spraying occurs have secondary containment around the base of the tanks, typically a sump below a metal grating. The sump collects any overspray or drips that aren't collected in the tanks. The material collected in the sump is usually routed to the facility's wastewater treatment system and the sump is cleaned out periodically. This approach limits the degree to which overspray or drips can result in fugitive emissions, and it is not clear that the PAR 1469 spray rinse requirements would reduce emissions to any significant degree relative to current practice.
- Several operators cited difficulties their employees face in spray rinsing above tanks in a manner that maximizes the collection of spray and drips in the tank below as PAR 1469 would appear to require. It's often not possible to access the full perimeter of a tank and spraying is thus sometimes conducted from a non-optimal location: from farther away using a higher pressure spray that carries further and provides a concentrated, well-directed spray but splashes off more; or in a direction more horizontally rather than downward; or across the short side of a rectangular tank rather than lengthwise along the tank. These time-saving practices may result in an increased portion of the overspray or drips missing the tank below and instead getting collected in the secondary containment. More material could be collected in the tank if employees spent more time and were extra-careful in their spraying. Estimates ranged from 30 – 60 minutes more per shift per employee for the workers conducting spray rinsing to do it more carefully.
- One operator objected specifically to being required to use low pressure nozzles when spray rinsing above a tank. Many of his parts have complex geometry with crevices, hollow areas and indentations and he needs to use a high pressure spray to be sure of efficiently removing all traces of unwanted chemicals adhering to parts' surfaces. He is uncertain whether he can meet product quality specifications using only low-pressure spray rinsing. He nevertheless estimated about a half hour additional per employee involved in spray rinsing per shift if he were to spend more time and rinse more carefully using low pressure nozzles.
- Most operators felt that installation of more splash guards was not feasible for their tanks, and that spray rinsing above a tank would be by far the most frequent approach to meet the PAR requirements. Reasons given for the inability to install more splash guards included: insufficient clearance for an overhead crane/conveyor to lift racks and parts out of tanks and carry them elsewhere, and insufficient space between tanks to install splash guards. A couple of operators commented that it is difficult to access all existing splash guards in order to clean them weekly;

31-5
Cont

another reason why rinsing above tanks is the preferred approach for trying to comply with the proposed requirements rather than installing, cleaning and maintaining splash guards.

The following table summarizes the costs that we estimate the six facilities that responded to our survey will incur to meet the proposed spray rinsing requirements.

The several unit cost figures that we use in developing these cost estimates are:

- Low pressure spray nozzle and hose assembly (includes any necessary plumbing): \$200
- Splash guards fully around the perimeter of a tank: \$1,000
- Additional labor hours to conduct spray rinsing more carefully and as required are priced at the average hourly production worker wage rate for each facility as reported in our survey, loaded with 41% additional benefits (average for Los Angeles area). The range for the six facilities responding to this survey is from \$21.19/hour to \$31.49/hour. The average loaded hourly wage rate for the eleven facilities that participated in an earlier survey was \$22.42/hour.

31-5
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Estimated Costs to Meet PAR 1469 Spray Rinsing Requirements

Facility	# Low Pressure Sprays Needed	# Tanks Needing Splash Guards	# Workers w/Added Workload	Add'l Time per Worker per Shift (hrs)	Capital Cost	Annual O&M Cost	Total Annualized Cost	Comments
C	3	0	5	0.5	\$600	\$28,072	\$28,390	Now spray above/in a few empty tanks, but most is above process or rinse tanks. Most tanks are 5' deep; with parts fully out of the tanks employees must spray up to rinse top of parts -- overspray. Prohibitively costly to rinse on the rise (would require 2 employees simultaneously, 1 for crane and 1 to rinse) or to install spray bars on all necessary tanks. Have secondary containment. PAR 1469 would require: more lowering of parts into tanks for spraying, more low pressure nozzles, and painstaking care when spraying above tanks.
E	0	0	0	0	\$0	\$0	\$0	Meets these requirements already with ascending spray/rinse as racks with parts are pulled up and out of most tanks. Requires coordination between crane operator and tank personnel. Was costly to set up.
F	0	4	3	0.25	\$4,000	\$10,169	\$11,068	Have secondary containment. Typically rinse above the tank. Sometimes rinse while rack is being moved on crane, with drip pan carried below. Assume this will be OK. A couple of tanks could use splash guards also to reduce uncaptured overspray.
G	6	0	3	1	\$1,200	\$16,949	\$17,585	Would need to switch to low pressure nozzles and take much greater care in spraying above tanks. Have secondary containment. "Why is this necessary?"
H	10	0	10	0.5	\$2,000	\$26,483	\$27,543	Concerned about product quality impact w/low pressure spray. Will be major problem for parts with complex geometries. Could perhaps spend much extra time w/low pressure rinse to get it close to right. Note secondary containment. Can't do splash guards because of tank/crane configurations. Don't in most cases have empty tanks in which to do spraying.
I	1	0	0	0	\$200	\$0	\$106	Use low pressure spray above tanks in most cases now already. Would be feasible in most instances (but more costly) to rinse in empty tanks or to install splash guards and clean them

Average per facility: \$1,333 \$13,612 \$14,116
 Avg for small facility: \$8,846
 Avg for large facility: \$16,750

Additional Costs for Source Testing and for Permitting Should be Included

Costs are estimated in the draft SIA for source testing and emissions screening only for the payments that facility owners will make to consultants and source testing contractors for performing the tests. Costs have been omitted but should be included also for the labor hours that facility personnel will expend in contracting for, arranging and supervising the tests and in recording the results and keeping records. There are often also significant costs involved in shutting down production on a line while source testing proceeds on that line, but it would be quite difficult to estimate these costs. We suggest that the SIA should assume an average of 24 hours of facility personnel labor per source test or emissions screening, with these hours priced at double the average hourly loaded rate for shop personnel of \$24.42/hour to reflect the managerial and technical nature of the labor hours required for these activities.

The draft SIA is likewise incomplete in estimating the costs of the additional new and renewal permits that will be prompted by PAR 1469. The draft SIA includes the costs to be paid to the District by facility owners and operators for these permits, but fails to include an estimate of the costs of the labor hours that facility personnel will expend in seeking these permits and the costs incurred for consultants to assist in permit acquisition. These costs also should be estimated and included in the SIA.

31-6

The draft SIA assumes that one permit will be issued and renewed per each new add-on APCD system that will be installed to meet PAR 1469 requirements. We have found, however, that many facilities have had to obtain and have been issued a permit for both the APCD and for a tank or the tank line that the APCD serves. We do not understand the typical procedures applicable in these situations. We suggest that the high cost scenario in the final SIA should reflect a reasonable assumption regarding the additional numbers of tanks or tank lines that will require permits beyond the numbers of APCDs that will require permits.

Uncertainties in the Estimated Number of Tier III Tanks and Estimated Number of APCDs Needed

Costs for purchasing, installing, operating and maintaining APCDs are the largest of the several varieties of compliance costs estimated in the draft SIA. The manner in which the District estimates the number of these controls that will need to be implemented is thus key in the analysis.

As we understand it, the District does not have a census of the tanks existing at the 111 Cr(VI) electroplating/anodizing facilities and the characteristics of these tanks (e.g., Cr(VI) concentrations, operating temperatures, electrolytic and/or air sparged) as would be needed to estimate with confidence the number of tanks that will need control with add-on APCDs. Nor does the District have sufficient information about the purposes and co-location of these tanks needing new controls with each other and with existing APCD-controlled tanks as would be necessary to project confidently whether each of these newly-to-be-controlled tanks will require its own dedicated APCD or whether many of these newly-to-be-controlled tanks could be grouped together in new APCDs serving multiple tanks, or could be vented into existing APCDs. Absent this information, the District makes a several assumptions or estimates. We offer a few comments:

31-7

- The District projects in the draft SIA that the 111 affected Cr(VI) electroplating and anodizing facilities will need to construct somewhere between 64 (low cost estimate) and 103 (high cost estimate) APCD systems to control existing tanks that will become Tier III. This ratio of new APCD systems to facilities is quite similar to what we projected – eight new APCD systems -- for our much smaller (but more thoroughly researched) sample of 10 MFASC member facilities. The District projects 0.58 – 0.93 new APCDs per facility, while we project 0.8, well within the District's range.⁴ The District's overall high and low projections bracket ours; these projections appear reasonable in the aggregate.
- The draft SIA appears to suggest (page 14) that 25 of the 62 responses (among 111 facilities, assuming that none of the survey respondents are trivalent chromium only) to the District's survey provide sufficient information to judge how many Tier III tanks there will be at particular facilities and what the characteristics of these tanks are. If these 25 survey respondents are spread across all 12 of the non-trivalent facility categories that the District sets up for the draft SIA, then there are an average of only two survey respondents in each category. This rather limited coverage suggests that there is substantial uncertainty in the details of the District's characterization of the typical facility in each category as drawn from the survey responses, including: how many Tier III tanks, their average size, the number that use CFS, the number that are air sparged and could be switched to eductors, the number of stripping tanks, etc..

We question several of the District's specific estimates that staff have derived from this limited number of survey responses:

- The District notes that there are 27 affected facilities that are controlled only by certified fume suppressants, and assumes if chemical fume suppressants are not recertified prior to 2021 that each of these facilities will need only one APCD system. We doubt that this is a good assumption. Among the set of 10 sample MFASC member-owned facilities that we studied for our cost analysis is a hard chrome facility that has two electroplating tanks that are controlled now with fume suppressants and polyballs and no APCDs. This facility would have two additional Tier III tanks (reclaim rinse) if PAR 1469 were adopted. These four tanks are in two different process lines (an automated line and a hand line) and will clearly require two APCDs if fume suppressants are not recertified. Two distinct APCDs will be required partly because these two lines are some distance apart, but more importantly because the two process lines are often run at differing times. It would be quite inefficient to connect all four of these tanks to a single APCD and to run that APCD at all times when any one of the tanks is being operated. We expect that there are additional facilities among the 27 currently controlled only by certified fume suppressants that would need more than one APCD if fume suppressants were not

⁴ We did not consider in our analysis the possibility that chemical fume suppressants will not be recertified. If chemical fume suppressants were in fact not recertified by 2021, the number of new APCD systems constructed across our ten case example facilities would increase from eight to ten; giving a higher ratio of new systems to facilities than the District projects even for their high cost scenario.

31-7
Cont

recertified. The District staff should be able to determine from permit records the number and nature of Cr(VI) electroplating and anodizing tanks at most or perhaps all of these 27 facilities and may be able to obtain information on the additional tanks that will become Tier III at some or all of these facilities. We expect that a significant number of these facilities, perhaps as many as half, will be found to have more than one tank that will need APCD control if fume suppressants are not recertified. For the cost analysis in the final SIA, the District should then apply their high cost scenario (one APCD system per tank needing APCD control) to this larger number of estimated tanks that will need APCD control if fume suppressants are not recertified. (In the low cost scenario the District assumes that fume suppressants will be recertified and that the facilities that control Cr(VI) electroplating/anodizing tanks now using fume suppressants only will use fume suppressants also to control any Tier III tanks.)

- The discussions provided in the draft SIA should be clarified as to why some tanks that might appear perhaps be Tier III have not been counted as Tier III in the analysis (e.g., “adjusted” Tier III tank count). In particular, we are interested in how many chem film, passivation and other tanks that are now air sparged have been assumed as converting to eductors and avoiding Tier III status. Among our sample of facilities, facility operators judged that only about half of these tanks could be switched to eductors without raising concerns about product quality. We are also interested in the SIA providing further details on how a determination was made regarding the fraction of stripping tanks that have Cr(VI) concentrations exceeding 1,000 ppm (thus Tier III) and the fraction that do not. If there are substantial uncertainties on these issues, perhaps they should be included among the variables for which sensitivity analysis is conducted between the low and high cost scenarios.
- More generally, the discussion in the draft SIA about why facilities can realize savings by controlling multiple tanks with a single APCD is misleading insofar as it presents a positive case for consolidating control of multiple tanks into a single APCD (see the three points cited on page 17) without presenting also the reasons why consolidation may not be cost-effective. The potential savings from connecting multiple tanks to a single APCD can be outweighed by the costs of doing so when the tanks to be controlled:
 - Are not close to each other and connecting them would require longer duct runs; or
 - Are in different process lines which are operated on differing schedules; or
 - Generate emissions air flows that differ qualitatively (hot, saturated air flows vs. cooler, drier and less concentrated flows) and pose differing control needs that are best served by differing control technologies; or
 - Could be connected but doing so would require significant retrofit costs to integrate the new tanks to be controlled into an existing APCD system. (Note, for example, that EPA made a general assumption in costing retrofit APCD applications for the electroplating

31-7
Cont

NESHAP regulation that retrofits cost 50% more for the same airflow controlled than entirely new, purpose-built applications.)

Also, tanks not in proximity to each other can rarely be moved closer together as the draft SIA suggests in order to vent them to a common APCD. Most tanks are located as they are because they represent components in process lines. Moving an individual tank out of its process line in order to realize a potential savings in control costs is likely not possible without upsetting various important logistical relationships particular to the process line (e.g., hoists to move parts from tank to tank along the process line, locations of drying stations).

The Sensitivity Analysis that Aims to Provide High and Low Compliance Cost Estimates is Important and Should be Expanded

The District should include more elements in differentiating a low cost scenario from a high cost scenario. The high cost scenario is not less reasonable or less likely to prevail than the low cost scenario.

We support the approach adopted in the draft SIA of estimating costs for both a lower cost scenario and a higher cost scenario, with the aim of bracketing what the PAR 1469 compliance costs are likely to be. But we suggest adding to the list of elements that have been chosen to differentiate the high cost scenario from the low cost scenario. And we disagree with the manner in which both scenarios have been characterized in the SIA:

- In our view, the high cost scenario does not represent “the highest expected cost of compliance with the requirements of PAR 1469.” There are many respects in which compliance costs could prove in practice to be higher than what is estimated in the draft SIA’s high cost scenario. We will list some below.
- The low cost scenario also does not represent “the costs associated with a more reasonable scenario”. We view the two scenarios as approximately equally likely and reasonable – the low cost scenario is neither more likely nor more reasonable than the high cost scenario. We will list below some respects in which we believe this also to be true.

In sum, we would suggest that the District should refer neutrally and in a balanced manner to the two cost scenarios, not posing one as more reasonable or likely than the other. We would suggest that they be termed as a “higher cost scenario” and as a “lower cost scenario”. The two scenarios should be viewed as representing an effort to bracket the compliance costs that will ensue from PAR 1469, with the costs actually incurred by the affected sources likely, though not necessarily, to be between the lower cost estimate and the higher cost estimate.

Some reasons why the costs that District staff estimate for the high cost scenario might be lower than the costs that ultimately prevail would include:

31-7
Cont

- Omitted categories of costs. The District has not estimated costs for facility personnel to arrange for and supervise the additional source tests and emissions screening required by PAR 1469, nor the costs for facility personnel and consultants to pursue the additional permits that will be needed. The District has not estimated the additional operating costs that some facility owners will incur to spray rinse parts more carefully so as to capture all overspray in tanks.
- Generally underestimating some categories of costs. We believe that costs are likely to be higher than the District estimates for enclosures and for capital and O&M costs for APCDs (our particular concerns regarding APCD costs involve accounting for economies of scale and the costs for local approvals that have not been included).
- Underestimating the count of items that will need to be controlled or managed or accomplished. There will be more enclosures that will need to be created and meet the PAR 1469 requirements than there are facilities. At least some facilities that are now controlled only with fume suppressants will have more than one tank that will need APCD control if fume suppressants are not recertified. For some APCD systems, both the system and one or more of the tanks may need permits.
- The discount rate used in the analysis. There are several arguments for applying a discount rate higher than the 4% figure the District uses for the high cost scenario. Federal economic analyses, pursuant to guidance from the U.S. Office of Management and Budget, usually apply a real discount rate of 7%/yr. Many analysts believe that a hurdle rate of return approach that gives even higher figures is appropriate for establishing the discount rate to apply when compliance spending displaces productive private capital investments.

31-7
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Some reasons why we don't consider the low cost scenario to be "more reasonable" or more likely to prevail than the high cost scenario include:

- No one knows whether fume suppressants actually will or will not be recertified.
- Discount rates. Choice of a discount rate as low as 1% (low cost scenario) is very rare in regulatory impact analyses, while the choice of a discount rate higher than the 4% assumed for the high cost scenario is common.

We also suggest that several additional quantities that are both important and uncertain should be added to the list of those that are varied between the lower and the higher cost scenarios. These include:

- The number of Tier III tanks needing control. The number of Tier III tanks has been estimated based on a limited number of site visits and survey responses that together cover only a small fraction of the 115 affected facilities. There is very large uncertainty in then projecting the number of facilities in each category with Tier III tanks and the average number of tanks per facility that has them. The several adjustments that are then applied to the number of Tier III

tanks are further uncertain and should be subject to sensitivity analysis -- the fraction of chem film, passivation and other tanks that can (despite product quality concerns) be switched from air sparging to eductors to reduce control costs; the fraction of stripping tanks that have Cr(VI) concentrations below 1,000 ppm; whether rinse tanks can be managed to hold concentrations below 1,000 ppm, etc. Given the importance of the number of Tier III tanks in estimating compliance costs and the substantial uncertainty in estimating this number based on incomplete available data, this is perhaps the first and most important variable that should be included in a high/low sensitivity analysis. It might be appropriate also to develop also a smaller and a larger estimate of average Tier III tank size for each category. We agree that the sensitivity analysis included in the SIA currently that involves the question of how many APCDs per Tier III tank is reasonable, with high estimate of one APCD per tank and low estimate of one APCD per 2 tanks.

- In view of the seemingly substantial difference of opinion between facility operators and the SCAQMD staff about the frequency with which the enclosure requirements in total (not the 3.5% requirement alone) will prompt operators to make structural changes and ventilation improvements, this quantity also should be subject to sensitivity analysis.

31-7
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The SIA's Facility-Based Impact Analysis is Key in Evaluating Whether PAR 1469 Will Be Affordable for the Affected Electroplating and Anodizing Facilities

We appreciate the District's efforts in the draft SIA to evaluate the impacts of PAR 1469 compliance costs on individual affected electroplating and anodizing facilities. In our view, particularly for small businesses (as nearly all of the entities affected by PAR 1469 are), a comparison of the annualized compliance costs a facility will face against the facility's typical annual revenues and/or profits provides a quick and rough, but very useful, indication of whether the facility can likely afford to pay the costs to comply with the proposed rule and continue in business or cannot afford to pay these costs and will likely close.

Although additional issues are also important in judging the affordability of a regulation for small businesses (e.g., whether conditions in the markets into which the affected businesses sell are such that regulatory cost increases tend to be passed through to customers), regulatory agencies often apply simple benchmarks in judging when a regulatory cost burden is likely to be problematic:

- The U.S. Occupational Safety and Health Administration (OSHA) typically views a regulatory cost exceeding 1% of revenues or 10% of profits (5% of profits for very small businesses) for the average business in an industry as a potentially significant economic impact. If projected annualized compliance costs exceed one of these levels, substantial further analysis must be conducted if a proposed regulation is to be shown to be "economically feasible" as required for regulations pursuant to the Occupational Safety and Health Act.⁵

31-8

⁵ See, for example, the discussion in Section VIII E., Economic Impacts, in the preamble to the final rule for Occupational Exposure to Hexavalent Chromium. Federal Register: February 28, 2006 (Volume 71, Number 39), pages 10099-10385.

- The U.S. Environmental Protection Agency (EPA) typically figures that a proposed regulation will not have a significant economic impact on a small entity (e.g., small business, small government) if compliance costs for the affected entity are less than 1% of that entity's sales. EPA typically figures that the impact will be "unquestionably significant" if costs exceed 3% of a small entity's sales or revenues.⁶

In contrast to the Federal OSHA and EPA, the SCAQMD has not yet established any particular benchmark levels of compliance costs relative to revenues or profits that should be viewed as acceptable or unacceptable or as affordable or unaffordable or as survivable or non-survivable.

In judging the affordability of PAR 1469 for individual hexavalent chromium electroplating/anodizing facilities and for the industry more generally, we suggest that the SCAQMD might consider the following benchmarks:

- If the annualized compliance costs for the proposed rule are less than 1% of revenues, the rule is unlikely to pose affordability problems;
- If the annualized compliance costs for the proposed rule are greater than 3% of revenues, the rule is likely to pose significant affordability problems and some of the producers affected at this level are likely to close; and
- If the annualized compliance costs exceed 5% of revenues, most of the producers affected at this level are likely to close.

We suggest this set of benchmarks based on several factors:

- The chosen Federal EPA and OSHA benchmarks.
- The likelihood that hexavalent chromium electroplaters/anodizers within the SCAQMD will not be able to pass any significant share of PAR 1469 compliance costs through to their customers. Nearly all MFASC members in the District know of competitors nearby -- in Northern California, in San Diego, in Mexico, or in other States -- that won't face the PAR 1469 regulatory costs and that will take much of their business if they were to try to raise their prices by 3% or 5% or 10% to cover the PAR 1469 costs.
- The job shop electroplating industry (NAICS 332813, the industry in which the great majority of the 115 affected facilities are categorized) has had an average pre-tax profit margin over the past 27 years of less than 4%. This is a low-margin, highly competitive industry. Costs equal to 3% of profits would consume nearly all of this industry's typical profits, and costs at 5% of profits would consume more than all of typical profits.

⁶ U.S. EPA. Final Guidance for EPA Rulewriters: Regulatory Flexibility Act as Amended by the Small Business Regulatory Enforcement Fairness Act. November, 2006.

- We focus particularly on benchmarks involving a comparison between annualized compliance costs and typical annual revenues for various technical reasons. We focus on this comparison, as the District staff have provided in the draft SIA, for several reasons. First, summing all costs -- capital costs, other one-time costs, occasionally recurring costs, and annual O&M costs -- over many years into the future and then annualizing these costs provides a good, comprehensive single measure of the long-term compliance costs that a facility will bear. Second, typical annual revenues are a better representation of a firm's ability to pay costs than are typical annual profits. For small businesses, it is easier to influence the firm's reported profits in a manner that understates them and paints a misleading picture of the firm's financial health than is possible when reporting revenues. Third, the particular levels chosen for the benchmarks (e.g., 1%, 3%, 5%) should be judged based on the industry's rate of pre-tax profitability rather than post-tax profitability. In analyses that consider firms when they may be threatened with closure, tax rates are likely to be very low and compliance spending will generate little in the way of tax shields. Comparison of compliance costs against pre-tax rather than post-tax margins will provide a much more conservative analysis.

The SIA Should Do More in Portraying the Variability in PAR 1469 Compliance Cost Burden Across Affected Facilities

We are particularly concerned that the SIA estimate whether electroplating/anodizing facilities will face compliance costs that are affordable. How many of the 115 affected facilities will face costs that may force them out of business? The facility-based analysis that the District provides in the draft SIA gives information that helps in this direction, but the analysis in essence addresses only the average or typical facility in each of the 13 various categories into which the SIA divides the industry.⁷ The analysis does not provide a comparison of costs to revenues for each of the 115 facilities. Specifically, the draft SIA's facility-based analysis compares the average projected compliance cost for a facility in the category against the estimated revenues for each of the individual facilities in that category and then averages the results, which are reported in Table 9 on page 32.

This is the table of draft SIA results in which we are particularly interested. It provides some sense about whether the costs to comply with PAR 1469 are affordable or not. For the large hard chrome category, which we will use as an example, the table shows for the facilities in this category that compliance costs estimated under the "low cost scenario" amount on average to 1.9% of facilities' revenues. Under the "high cost scenario", compliance costs amount instead to an average of 2.7% of large hard chrome facilities' revenues. This range of impacts shown as extending from 1.9 % to 2.7% of revenues might be interpreted by many readers as suggesting that PAR 1469 poses no significant affordability issues for large hard chrome platers in the District. The reported range of impacts is below the 3% level that EPA considers unquestionably significant, and it is below the 5% level that we believe

⁷ The draft SIA establishes thirteen categories of facilities, including: chromic acid anodizing (small, medium and other); decorative chromium plating (small, medium, large and other); hard chromium plating (small, medium, large and other); multiple plating or anodizing operations (large); and trivalent (other).

31-8
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could cause closure of most of the affected producers. But this impression is misleading, we believe, because the District's analysis does not adequately show the variability of potential impacts on individual facilities around these average figures. Further analysis and scrutiny would show that many facilities in this category, as well as facilities in other categories that show similar ranges of average impacts that appear generally below affordability benchmarks, will likely have difficulty affording PAR 1469 compliance costs.

We would like the SIA to attempt to answer several specific questions. How many of the 115 affected facilities will face compliance costs from PAR 1469 that may force them out of business? How many will face annual compliance costs that exceed 5% of annual revenues, a level which we believe would clearly not be affordable for most electroplating/anodizing small businesses in the SCAQMD? How many will face annual compliance costs that exceed 3% of revenues, a level that EPA has termed "unquestionably significant" and that we believe would pose a high risk of closure for most businesses in this industry? We will provide some suggestions about how the District staff, using information they already have, might quickly perform a facility-by-facility comparison of costs to revenues that more fully portrays the range of variability in impacts and affordability and provides some answers to these questions.

For the cost portion of the cost-to-revenue comparison, the District does not develop compliance cost estimates for each of the 115 individual affected facilities nor does the District develop a compliance cost estimate for any specific one of the affected facilities. Instead, the District staff develops a cost estimate only for a typical or representative or average (not saying specifically which) facility in each of the 13 categories.

For the revenue portion of the cost-to-revenue comparison, to the contrary, the District has acquired good information (from Dun and Bradstreet) on the revenues for nearly every one of the 115 individual affected facilities.⁸ But in the eventual cost-to-revenue comparisons that are presented in the draft SIA (pages 32 and 33), the District does not portray how the variation in revenues across the facilities in a category results in cost-to-revenue ratios that differ from one facility to another. Table 9 shows only the average cost-to-revenue ratio for the facilities in each category. Specifically, for example, the figure showing that high scenario compliance costs for large hard chrome facilities amount to 2.7% of their revenues is derived as follows:

- The average high scenario cost for large hard chrome facilities is estimated. This figure is \$29,667/year/facility, or \$30,000/year/facility as shown in Table 9 after rounding.
- This average cost per facility is compared against the revenue information for each of the 18 hard chrome large facilities. In one of the backup spreadsheets that we were given, the \$29,667 high scenario average cost estimate is compared facility-by-facility against the available revenue information for that facility. The highest revenue facility among the 18 large hard chrome

⁸ Based on our limited understanding of the Dun and Bradstreet data set that the District has used, we suspect that the revenue information for each of the 115 facilities may actually be for the companies or other entities that own each facility. If so, considering total corporate revenues may overstate a facility's ability to afford compliance costs in instances when the facility constitutes a separable portion of the company's overall business.

facilities has annual revenues of \$45.8 million per year, resulting in a cost-to-revenue ratio of 0.06% if it were to face the average high scenario large hard chrome facility compliance costs. The lowest revenue facility among the 18 large hard chrome facilities has annual revenues of \$216,000 per year, resulting in a cost-to-revenue ratio for it, if it were to face the average high scenario large hard chrome facility compliance costs, that exceeds 14%. Five of the 18 facilities are shown in the backup spreadsheet as having cost-to-revenues ratios exceeding 3%. It would appear from the spreadsheet, and considering thus far only variability in revenues, that a substantial share of the large hard chrome category will face affordability issues, at least under the high cost scenario.

- The cost-to-revenue ratios for each of the 18 facilities in this category are then averaged, and the result is reported in Table 9 of the draft SIA only as the average figure of 2.7%.

The problem that we see with regard to the revenue side of the cost-to-revenue presentation in the draft SIA is simply that the impact of variability in facility revenues that is considered in the underlying spreadsheets is not portrayed in the SIA itself. Table 9 shows all but two of the 13 categories as having “Facility-specific ... Cost Impacts” (the title of Table 9) that are below the 3.0% benchmark. Yet the information that the District has and has analyzed on differences in revenues across facilities indicates to the contrary that nearly every category has at least one facility that likely does exceed the 3% benchmark and faces significant affordability issues.

The issue that we are concerned with on the cost side of the draft SIA’s facility-based impact analysis is different from and more substantial than that on the revenue side. On the cost side, the District simply does not analyze the degree to which compliance costs vary across the facilities within a category and thus has no opportunity to reflect the impact of variable compliance costs in the facility-by-facility comparison of costs against revenues.

The compliance cost estimates the District presents in the draft SIA have been developed not for individual facilities but instead for a typical or average or representative facility in each of the 13 categories or bins. The District may believe it does not have sufficient information on the important characteristics of each individual facility (e.g., number, size and character of Tier III tanks at the facility) to estimate compliance costs for each individual facility. Instead, from the limited number of site visits and the relatively few full surveys received, the District has judged for a typical facility in each of the categories how many Tier III tanks there are and the average square footage of these tanks. The following table shows a key portion of the District’s cost analysis for the high cost scenario for the most important of the 13 categories, accounting for 106 of the 115 affected facilities. (This portion of the District’s cost worksheet has been reordered somewhat in order to clarify the logic and flow of the cost analysis.)

31-8
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	A	B	C	D	E	F	G
	TOTAL FACILITIES WITHIN BIN	% OF FACILITIES IN BIN WITH TIER III TANKS	# OF FACILITIES IN BIN WITH TIER III TANKS	ADJUSTED # OF TIER III TANKS PER FACILITY AT FACILITIES THAT HAVE THEM	TIER III TANKS NEEDING APCD CONTROL	AVERAGE TIER III TANK SIZE (\$Q FT)	TOTAL SIZE OF TIER II TANKS AT A FACILITY (\$Q FT)
ANODIZING Medium	18	83%	15	3.5	49	24.4	85.4
ANODIZING Small	14	80%	11	2	22	31	62
DECORATIVE Medium	11	25%	3	2	3	47	94
DECORATIVE Small	27	50%	14	1.3	8*	19.375	25.1875
HARD Large	18	50%	9	1.8	17	22.5	40.5
HARD Medium	7	43%	3	1	3	2.5	2.5
HARD Small	6	0%	0	N/A	0	N/A	0
DECORATIVE Large	5	0%	0	N/A	0	N/A	0

Referring, for example, to the Hard Chrome Large category, the District estimates that there are 18 such facilities that will be affected by PAR 1469, that half of them (9) have Tier III tanks, and that there are an average of 1.8 tanks per hard chrome large facility, for a total of 17 tanks in this category. The District further estimates based on site visits and survey results that the average size of a Tier III tank at hard chrome large facilities is 22.5 square feet. When multiplied by the estimated average of 1.8 Tier III tanks at large hard chrome facilities that have them, the District estimates that the average such facility has 40.5 square feet of Tier III tank surface area that will need to be controlled with APCDs. The cost analysis then proceeds beyond what is shown in the table above. The District assumes that the APCD to control a Tier III tank should be sized at 150 cfm/sq ft, assumes in the high cost scenario that there will be one APCD system per Tier III tank, and applies unit cost functions to the estimated air flow needing control to estimate both the capital and annual O&M costs for the APCD systems needed to control the Tier III tanks that are thought to exist among the estimated 18 hard chrome large facilities. The District follows a similar procedure in estimating the other sorts of compliance costs that PAR 1469 will entail for the facilities in this category, including costs for enclosures, source testing, permitting, etc. For each sort of cost, the District ultimately estimates the cost for the average facility in this category and the total cost for the entire set of facilities in this category. The total estimated high scenario compliance cost for the estimated 18 large hard chrome facilities is \$534,000/year (page 8), eighteen times the cost of \$29,642/yr that has been estimated for the average large hard chrome facility.⁹ In the facility cost-to-revenue analysis as shown in the worksheet (though not in the SIA document itself), the District compares the \$29,642/yr estimated average high scenario cost and the \$21,542/yr estimated average low scenario cost for a large hard chrome facility sequentially against the annual revenue estimates for each of the 18 large hard chrome facilities.

The high scenario and the low scenario compliance cost estimates for the average large hard chrome facility are computed based on that facility having exactly 17/18 or 0.944 Tier III tanks that need APCD control. In reality, though, some of the 18 large hard chrome facilities have no Tier III tanks (the District estimates that 9 of the 18 have no Tier III tanks), some have one Tier III tank, some likely have two, and perhaps a few have three or more Tier III tanks. The number of Tier III tanks that a facility has and that will need to be controlled with APCDs appears clearly to be the most important single factor that will

⁹ The total and the average differ by a factor of 18.01, not exactly 18. The total figure is taken from the SIA itself while the average figure is taken from the backup worksheets we were provided. The small difference from the factor of 18 that is expected is perhaps due to rounding.

31-8
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determine the facility's PAR 1469 compliance costs.¹⁰ The more Tier III tanks a facility has, the higher the facility's compliance costs will be, in a roughly linear relationship. The number of Tier III tanks a facility has is likewise the most important factor that determines how one facility's compliance costs will differ from those for the other facilities in the same category. In our view, the key to reflecting variability in compliance costs across facilities in the SIA's facility-specific impact analysis lies in reflecting in the cost analysis the variability across facilities in the numbers of Tier III tanks that will need APCD controls. We will demonstrate one way in which the SIA's cost analysis could be expanded to reflect this variability, using as an example again the cost analysis for the high cost scenario for the large hard chrome category of facilities.

31-8
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The District estimates in the draft SIA that there are 18 large hard chrome facilities, nine of which have no Tier III tanks and the other nine of which have 17 (adjusted) Tier III tanks that will need a total of 17 APCD systems (one system per Tier III tank in the high cost scenario). How might these 17 tanks/systems be distributed across the 18 large hard chrome facilities and what compliance costs might each of these facilities then face based on the number of tanks/systems each has?

We use a binomial expansion procedure to estimate the probability that any one of the eighteen facilities has various numbers of the Tier III tanks.¹¹

¹⁰ The SIA notes at the top of page 6 that the majority of the estimated PAR 1469 compliance costs are attributable to the capital, installation and O&M costs of controls for APC systems. The costs for APC systems relate directly to the number of Tier III tanks being controlled by these systems, figured at one system per tank (high cost scenario) or two systems per tank (low cost scenario), including costs for source testing and permitting. Table 2 on page 7 of the SIA demonstrates the importance of the number of Tier III tanks in determining PAR 1469 compliance costs. The costs for most of the largest PAR 1469 requirement categories (the rows in the table) are essentially linear with respect to the number of Tier III tanks, including the following six requirement categories: capital cost of new APC systems for existing Tier III tanks; initial source testing for new APC systems for existing Tier III tanks; permitting costs for new APC systems for existing Tier III tanks; screening test costs for Tier III tanks; operating and maintenance costs for APC systems; and annual permit renewal costs for Tier III tanks. In the low cost scenario (third of the four numerical columns in the table), these six requirement categories that relate directly to the number of Tier III tanks account for \$1,957,000/yr or 74% of the \$2,648,000/yr in total annual costs for the low cost scenario. For the high cost scenario, the costs for these six requirements account for \$3,265,000/yr or 82% of the \$3,977,000/yr in total annual costs (excluding from the total the amounts totaling \$281,000 for existing electrolytic tanks controlled by chemical fume suppressants).

¹¹ We simulate the location of the 17 tanks across the 18 facilities as a set of 17 independent Bernoulli trials. A tank is, in concept, dropped randomly into one of the 18 facilities, with probability 1/18 (0.0555) that the tank ends up in any given facility. The binomial expansion (function available in Excel) then gives the probability that any number of tanks ends up at the given facility after all 17 tanks are placed or after all 17 trials are completed.

Bernoulli trials table, 17 trials, 0.05555 probability of "success" in each trial

# of "successes"	Probability of this # of successes	Probability of this # of successes or more
0	0.3785	1.0000
1	0.3784	0.6215
2	0.1781	0.2431
3	0.0524	0.0650
4	0.0108	0.0126
5	0.0016	0.0019
6	0.0002	0.0002
7	0.0000	0.0000
8	0.0000	0.0000
9	0.0000	0.0000

This table can be read to say, for example, that any one of the 18 large hard chrome facilities has a probability of 0.065 of having 3 or more tanks. The most likely numbers of tanks at any single one of these nine facilities is zero or one, with each of these numbers of tanks having a probability of 0.378 at any given facility. This Bernoulli procedure simulates the likely variability in numbers of Tier III tanks at the large hard chrome facilities, and we next simulate the likely variability in compliance costs across the large hard chrome facilities by attaching an estimate of the likely compliance cost per tank to the estimates for the numbers of tanks.

The compliance cost estimates that District staff have developed in the draft SIA show, for the high cost scenario, that roughly 82% of the annual compliance costs for a facility relate linearly to the number of Tier III tanks the facility has (see footnote 8, above). For large hard chrome facilities that will face an average compliance cost that the draft SIA estimates at \$29,642/yr, then, 82% of this cost or \$24,306 relates directly to the number of Tier III tanks the facility has, and approximately 18% of this amount, or \$5,336 appears to relate to other factors. The average large hard chrome facility for which these cost estimates were developed has 17/18 (0.9444) Tier III tanks (17 Tier III tanks across 18 large hard chrome facilities). The compliance cost per tank, as the draft SIA estimates it, is thus \$24,306/0.9444 or \$25,736. A mathematical function stating how the District's high scenario cost estimate for large hard chrome facilities relates to the number of Tier III tanks that one of these facilities has would thus be:

$$\text{High scenario compliance cost at large hard chrome facility} = \$5,336/\text{yr} + (\$25,736/\text{yr}) \times (\# \text{ Tier III tanks})$$

We apply this cost function to simulate how the compliance cost a large hard chrome facility will bear relates to the number of Tier III tanks it has, and we combine this cost function with the Bernoulli estimates for how the number of tanks a facility has is likely to vary across the 18 large hard chrome facilities.

The table below takes this analysis a step further, by combining information on the variability of revenues across the 18 large hard chrome facilities with this information we have developed on the variability of costs across these facilities. The table estimates the probability that a random facility among the 18 will have annual compliance costs exceeding 3% of that facility's annual revenues.

31-8
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**Number and % of Large Hard Chrome Facilities With Compliance Costs Exceeding 3% of Revenues
High Cost Scenario**

Revenues for Hard (Large) Facilities	Probability of this revenue level	Annual Cost if at 3% of Revenues	Minimum # of tanks req'd to yield this cost	Minimum # of tanks req'd to yield this cost	Probability of this # of tanks or more for this facility	Joint probability
\$45,845,045	0.0556	\$1,375,351	53.23	54	0	0.0000
\$7,736,964	0.0556	\$232,109	8.81	9	0.0000	0.0000
\$6,863,936	0.0556	\$205,918	7.79	8	0.0000	0.0000
\$4,511,352	0.0556	\$135,341	5.05	6	0.0002	0.0000
\$4,210,246	0.0556	\$126,307	4.70	5	0.0019	0.0001
\$3,851,839	0.0556	\$115,555	4.28	5	0.0019	0.0001
\$3,271,441	0.0556	\$98,143	3.61	4	0.0126	0.0007
\$3,531,073	0.0556	\$105,932	3.91	4	0.0126	0.0007
\$3,202,736	0.0556	\$96,082	3.53	4	0.0126	0.0007
\$2,000,000	0.0556	\$60,000	2.12	3	0.0650	0.0036
\$1,774,633	0.0556	\$53,239	1.86	2	0.2431	0.0135
\$1,412,912	0.0556	\$42,387	1.44	2	0.2431	0.0135
\$896,802	0.0556	\$26,904	0.84	1	0.6215	0.0345
\$775,000	0.0556	\$23,250	0.70	1	0.6215	0.0345
\$700,000	0.0556	\$21,000	0.61	1	0.6215	0.0345
\$511,726	0.0556	\$15,352	0.39	1	0.6215	0.0345
\$500,000	0.0556	\$15,000	0.38	1	0.6215	0.0345
\$216,278	0.0556	\$6,488	0.04	1	0.6215	0.0345

Summed probability: 0.2401
 Expected # Facilities: 4.3222
 Percent of Facilities: 24.0%

31-8
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The first column of this table shows the annual revenues that the District has estimated for each of the 18 large hard chrome facilities. The second column assigns an equal probability (1/18 = 0.0556) to each of the 18 revenue estimates for large hard chrome facilities. In the third column, we show what the annual compliance cost would need to be for each of the 18 facilities if costs were to exceed 3% of facility revenues (e.g., for the bottom-most facility in the list with annual revenues of \$216,278, compliance costs would need to exceed \$6,448/year if they were to exceed 3% of revenues for this facility). In the fourth column, we show how many Tier III tanks would need to be at a facility in order for the facility's compliance cost to exceed the cost figure shown in the third column and exceed 3% of revenues. The number of tanks shown in the fourth column has been computed by using the cost formula cited earlier:

$$\text{High scenario compliance cost at large hard chrome facility} = \$5,336/\text{yr} + (\$25,736/\text{yr}) \times (\# \text{ Tier III tanks})$$

The fifth column rounds up the number of Tier III tanks cited in the fourth column to the nearest integer. (An actual facility cannot have a fraction of a tank.) The sixth column shows the results of the Bernoulli trials and binomial expansion: the probability that a facility has a number of tanks equal to or exceeding the number in the fifth column. The sixth column shows the joint probability of the facility having both

the revenue figure shown in the first column and a number of tanks equal to or exceeding the number that would cause compliance costs to exceed three percent of this revenue figure.

At the bottom of the sixth column are the results of this analysis for the high cost scenario for the 18 large hard chrome facilities:

- The joint probability that a facility has the revenue figure shown in the first column and a number of tanks sufficient to cause compliance costs to exceed 3% of these revenues is 0.24.
- The expected number of the 18 large hard chrome facilities that will have compliance costs that exceed 3% of their revenues is thus $0.24 \times 18 = 4.32$.
- The expected value of 4.32 facilities incurring compliance costs that exceed 3% of revenues represents 24% of the 18 large hard chrome facilities.

In other words, taking account of the variation among large hard chrome facilities in revenues and compliance costs, we estimate using the estimates in the draft SIA that 24% of the 18 facilities are likely to incur compliance costs (high cost scenario) that exceed 3% of their revenues. In our view, any facility for which long-term compliance costs exceed 3% of the facility's revenues would have its continuation in business threatened.

We performed this analysis also for large hard chrome facilities to estimate the number and percentage of the 18 facilities that would have costs exceeding 5% of revenues (likely resulting in closure of these facilities), and performed these calculations for both the District's high cost scenario and for the low cost scenario. The results are shown in the table below.

Potential Closures Among Large Hard Chrome Facilities Due to PAR 1469 After Consideration of Variability Across Facilities in Revenues and Compliance Costs

	High Cost Scenario	Low Cost Scenario
Percentage of facilities with costs > 3% of revenues – threatened closures	24%	17%
Percentage of facilities with costs > 5% of revenues – likely closures	15%	9%

We suggest that the District should perform analyses similar to this one for the additional categories of facilities in order to estimate the numbers of facilities facing compliance costs exceeding affordability thresholds after considering the variability of revenues and costs. We expect this analysis would show that PAR 1469 would likely lead to the closure of some 10 – 20% of the Cr(VI) electroplating/anodizing industry in the SCAQMD.

We are particularly concerned that the District should perform this sort of analysis as a part of the SIA for the small decorative chrome category of facilities, which includes all or nearly all of the facilities that are now controlled with chemical fume suppressants (CFS) only. Our preliminary calculations show that the PAR 1469 low scenario compliance costs would cause the closure of more than one-third of these

31-8
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small facilities even if CFS were to be recertified. If CFS are not recertified, then the high scenario compliance costs would be sufficient to cause the closure of roughly 60% of the facilities in this category. We believe it is very important for the District in the SIA to complete a thorough analysis of the degree to which small decorative chrome facilities will be able to afford compliance with PAR 1469. We believe this analysis would show that without financial assistance from the State and/or District that PAR 1469 would cause the closure of between 35 and 60 % of these facilities.

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District Staff Should Seek Funding to Assist With Capital Costs for Add-on APCDs in Any Event, Not Only if Non-PFOS Fume Suppressants Are Not Recertified

The draft SIA presents cost estimates in terms of the average annual costs the industry will face each year through 2035. In reality, though, each of the businesses in the industry must get over the hump of the initial capital costs and “first year” costs of the regulation in order to have an opportunity to try to continue in business until 2035. The draft SIA projects these initial costs as \$100,000 to \$150,000 for the average facility,¹² and as several hundred thousand dollars for many individual facilities. How is the typical electroplating or anodizing small business going to come up with several hundred thousand dollars to meet this particular set of environmental requirements and then see if it can continue in business for the long haul? Virtually none of the affected businesses are publicly owned -- almost none of them can issue stock or bonds or has a parent company that can do so. Most of them are family-owned. Many of them can't access a bank loan for several hundred thousand dollars, and their owners are unlikely to have the personal assets available to pay this amount.

Furthermore, who is going to invest this sort of money or what bank is going to loan this sort of money for a business with: a) thin profit margins in the first place; b) an ever-shrinking base of manufacturing customers in the South Coast area; and c) the inevitable prospect of additional costly regulatory requirements in the future? In addition to Rule 1469 there will be Rule 1426 on additional metals beyond hexavalent chromium; Rule 1480 on monitoring; community air toxics programs; tighter wastewater requirements; increasing fees for all sorts of permits; tighter building codes; emergency planning requirements; training, certification and paperwork requirements; and so forth. Who is going to help the South Coast electroplaters and anodizers get over the hump of the initial costs for Rule 1469 when the future looks like this?

31-9

The final SIA should include an analysis that more clearly identifies the initial capital costs of PAR 1469 and applies simple credit-worthiness tests to determine whether the affected facilities can finance these costs. The adoption resolution for PAR 1469 should commit District staff to seek funding for assistance with capital investments for add-on APCD controls in any event for this industry, not solely if non-PFOS chemical fume suppressants cannot be recertified. Perhaps the financial assistance could be targeted for facilities that are projected to face compliance costs that exceed a specified percentage of their typical revenues, as calculated using the District staff's procedures for estimating costs and revenues.

¹² See Table 2, page 7. The summed “one-time costs” in the high cost scenario total approximately \$17 million, which when spread across the 115 affected facilities equals nearly \$150,000 for the average facility. The projected costs in the low-cost scenario are about 2/3 of those projected for the high cost scenario.

**Responses to Metal Finishing Association of Southern California (MFASC) Comment
Letter regarding the Socioeconomic Impact Assessment for PAR 1469, submitted via email
8/23/18 by Environomics**

SCAQMD staff worked extensively with MFASC and their consultant Environomics to ensure that the RDSIA closely represents actual cost impacts associated with PAR 1469. Based on a detailed review of MFASC's comments and follow-up conversation with Environomics, SCAQMD staff concluded that:

- MFASC overestimated the overall compliance cost of PAR 1469 by more than \$2,000,000 annually as a result of overly conservative assumptions about the proposed rule requirements.
- The MFASC overestimated costs based on assumptions for building enclosures and spray rinse requirements but did not provide enough information to substantiate the cost estimates. Without information to substantiate the cost, the SCAQMD staff cannot determine if the costs include modifications or installation of equipment that goes above the requirements of PAR 1469.
- MFASC's cost estimates are based on a limited subset of facilities (i.e., ten member facilities) that were extrapolated to all affected sources as opposed to data used in SCAQMD's RDSIA which are based on costs from more than 62 facility surveys and over 50 site visits.
- The subset of facilities used for MFASC's cost estimates is not representative of the entire PAR 1469 facility universe.

Further, SCAQMD staff reached out to Environomics to ask for data to verify the cost assumptions presented in MFASC's cost analysis, however, despite repeated requests the data was not provided. In addition, SCAQMD staff presented detailed cost assumptions at Working Group Meeting #9 on January 4, 2018. SCAQMD released the Draft Socioeconomic Impact Analysis on Friday, July 13, 2018 for public review. SCAQMD staff has provided detailed responses to MFASC's comments below.

31-1 Response: SCAQMD staff have worked with Environomics and members of the MFASC to recognize costs associated with PAR 1469 as accurately as possible. Numerous calls and emails were exchanged between staff and representatives of MFASC and/or Environomics to discuss cost assumptions as well as work in progress. In addition, cost assumptions and unit costs were discussed at several working group meetings, and cost-related comments were incorporated into the socioeconomic analysis as appropriate. It is important to note the cost estimates to control Tier III Tanks that are currently uncontrolled, as calculated in the Revised Draft Socioeconomic Impact Assessment (RDSIA) correlate well with the Environomics estimate, in spite of the limited sample size used by Environomics to calculate costs. Therefore, the estimate agrees with the RDSIA for the costs to control Tier III Tanks that MFASC representatives have publicly acknowledged should be controlled.

The comment letter overestimates costs that are directly imposed by PAR 1469 for building enclosures and spray rinsing, as discussed in more detail in Responses to Comments 31-4 and 31-5, respectively. This overestimation amounts to more than \$2,000,000 in annualized costs. Removing these overestimated costs for building enclosures and spray rinsing results in an annualized estimate that is very close to the high estimate calculated in the RDSIA.

The comments appear to be based on outdated assumptions from rule requirements that have changed, particularly with regard to the cost estimates for building enclosure costs. In addition, many of the assumptions in the comment letter are based on a very small sample size that are extrapolated to the entire universe of PAR 1469 facilities. For example, the cost estimate for spray rinsing is based on six facilities; costs averaged for these facilities and used for all facilities subject to PAR 1469. In addition to the sample size being very small, there is no assurance that the sample is representative of the PAR 1469 facility universe.

In contrast, cost estimates calculated in the RDSIA are based on a survey sent to all PAR 1469 facilities with a response rate of over 50%, site visits to more than 50 facilities, 13 Working Group meetings where potential rule requirements were discussed in detail, and numerous discussions with representatives from the MFASC that focused specifically on minimizing cost impacts to chrome plating and chromic acid anodizing facilities. Staff worked to develop proposed rule requirements that minimize costs without compromising control of hexavalent chromium. In many cases, several options are allowed to provide flexibility for owners and operators. These optional requirements are a direct result of working with the MFASC and industry stakeholders to explore ways of providing flexibility and limiting costs.

The RDSIA makes conservative cost assumptions and likely overestimates actual costs, particularly under the high-cost scenario. The reason is that costs for compliance with PAR 1469 are driven by the number of new air pollution control (APC) systems assumed to be necessary for existing Tier III Tanks. Approximately 75% of the cost estimated in the RDSIA is attributed to new APC systems. The number of APC systems is directly related to capital costs, operating and maintenance (O&M) costs for the APC systems, permitting and source testing costs. The number of Tier III Tanks is likely overestimated in both the low-cost scenario and the high-cost scenario, for the following reasons:

- The number of Tier III Tanks in the RDSIA include tanks that may be Tier II Tanks if they are operated within the temperature and tank bath concentrations defined in PAR 1469 Appendix 10. PAR 1469 allows Tier II Tanks to be controlled using much less expensive

methods than Tier III Tanks. For example, a tank cover or Merlin hood is far less expensive than the capital cost of an APC system, and there are no costs associated with O&M, permitting, annual permit fees, source testing or emissions screening.

- Many of the stripping and electropolishing tanks that are currently assumed to be Tier III Tanks in the RDSIA may not even be considered a Tier I Tank and would not be regulated under PAR 1469 if the tank bath is operated at a hexavalent chromium concentration below 1,000 ppm. A facility owner/operator may choose to operate a stripping or electropolishing tank below 1,000 ppm through several methods including converting to a chemical stripping process or changing the tank bath frequently enough to ensure the concentration stays below 1,000 ppm.
- Under the high-cost scenario, 27 APCs are assumed to be installed at decorative plating facilities. However, if non-PFOS chemical fume suppressants are not certified, staff will work with CARB to identify a low-cost compliance option that is as equally effective as chemical fume suppressants and seek funding to assist facilities in installation of pollution controls or use of non-toxic alternatives. This low-cost compliance option is expected to be less expensive than a HEPA-controlled APC system. It is not possible at this time to speculate on the configuration of the low-cost option; however if it does not involve add-on pollution controls, O&M costs, permitting and source testing costs would be eliminated. The current estimate of up to 27 APCs under the high cost scenario may be eliminated.
- Under the high-cost scenario, the RDSIA assumes that most tanks will require an APC system sized to control emissions from that individual tank. This is a conservative assumption as staff believes there are many opportunities for a plating or anodizing facility to realize savings by venting multiple tanks to a common APC system, moving tanks that are not currently located in proximity to each other and venting to a common APC system or venting an existing tank required to be controlled under PAR 1469 into an existing APC system, where capacity of that system allows.

Staff cannot estimate the number of APCs associated with Tier III Tanks that may be reduced under the first two bullets above, as any estimate would be speculative. Therefore, the RDSIA conservatively assumed all those tanks would require installation of APC systems. These changes are associated with facility business decisions and many factors influence whether a facility owner or operator may decide to change a current tank or plating/anodizing process instead of installing an APC system under PAR 1469.

SCAQMD staff is unable to verify costs presented in the comment letter, in spite of repeated requests from staff to provide the name of the specific facility for which costs were calculated. Therefore, staff has no means to verify and compare PAR 1469 requirements and resulting costs calculated in the RDSIA with costs calculated by Environomics.

Regarding the bullets points under Summary of Comments on page 2 of the comment letter, please see Responses to Comments 31-2 through 31-9.

31-2 Response: The use of distinct unit costs for air pollution control (APC) system sizes of 5,000 cubic feet per minute (cfm), 10,000 cfm and 20,000 cfm was due to the fact that the stated unit costs are correlated with those specific sizes. With regard to the analysis in the RDSIA, it should be noted that no APC systems are expected to be larger than 14,100 cfm (i.e. low estimate for Decorative – Medium facility category). In order to be cost conservative, a unit cost of \$17 cfm was applied to the APC systems serving new Tier III Tanks within that facility category. A unit cost of \$14/cfm, corresponding to an APC system size of 20,000 cfm is not used in the RDSIA analysis.

Regarding the cost of local approvals, the RDSIA acknowledges that the costs estimated do not include local approvals due to the uncertain and variable nature of these approvals. Cost estimates do not include costs that the city or municipality may impose for building inspections, approvals and upgrades to meet local building codes for the facility. For example, a facility may need to meet the current building code or seismic requirements. No costs were assumed for items such as building inspections, approvals, and upgrades imposed by the city or municipality. Each city or municipality may have different requirements relative to installation of APC systems, and staff cannot reasonably predict these costs.

The MFASC accurately states that the facility-aggregated ventilation rate was multiplied by the unit cost to develop the average facility cost for APC controls at all facilities with Tier III Tanks within a particular category. For the high cost estimate, the unit cost for all facility category was \$23/cfm, except for two category where the average APC system size was expected to be above 5,000 cfm. In those cases, \$17/cfm was used. The total facility cost for APC systems is the same whether the total aggregated flow rate is used or an average size system is costed out individually and then summed to get the total facility cost.

The low-cost scenario used an assumption of two tanks per APC system for the average facility within a particular category. In most cases, this assumption results in one assumed APC system at the average facility with Tier III Tanks within that category. The appropriate unit cost (either \$17/cfm or \$23/cfm), depending on the average system size was then

multiplied by the facility-aggregated ventilation rate to calculate the total cost.

While the suggestion of applying a smoothing function between the unit costs that were obtained for discrete size APC systems may be useful in certain situations, staff believes that it may infer a higher level of precision than is appropriate for this analysis, since average facility costs were assumed for each facility category. Staff believes grouping or categorizing of facilities, and applying the known unit cost data is the appropriate way of characterizing the survey data and this was the approach used in the RDSIA.

31-3 Response: The approach used in the RDSIA to calculate annual operating and maintenance (O&M) cost as a percentage of capital cost is appropriate and conservative for the following reasons:

1. This approach was used in 2006 revision to the CARB Air Toxics Control Measure (ATCM) for chrome plating. It has been modified to reflect the survey results as submitted by Environomics.
2. The RDSIA calculates a separate line item for electrical power to drive the ventilation blower. Since electrical power is considered an O&M cost, the actual percentage of O&M as calculated in the RDSIA is higher than 18% as a percentage of the capital cost.
3. The approach is directly correlated to system cfm through the cost calculation methodology, since the facility-aggregated ventilation flow rate (in cfm) is multiplied by the appropriate system-sized unit cost. Please also see Response to Comment 31-2.
4. One of the largest cost components of annual O&M costs is replacement of HEPA filters. The Environomics data indicates a HEPA filter change frequency of twice per year. This filter change frequency is not consistent with the discussions staff had with facility operators in over 50 site visits during rule development of PAR 1469. Many facilities reported that HEPA filters may last considerably longer than one year, depending on flow rate and particulate loading. Therefore, calculating O&M based on a frequency of twice per year for a HEPA filter change likely overestimates O&M costs in the comment letter.

As noted in Response to Comment 31-2, a unit cost of \$14/cfm, corresponding to an APC system size of 20,000 cfm is not used in the RDSIA analysis.

31-4 Response: Individual responses to the six types of costs suggested by the MFASC are given below:

1. The RDSIA conservatively assumed some roof vents might need to be closed based on all 111 affected facilities, not just the nine facilities used in the comment letter.

2. From site visits to more than 50 facilities subject to PAR 1469, staff has observed that nearly all facilities currently have existing doors or windows installed in enclosure openings. The RDSIA recognizes additional costs at approximately 10% of facilities that may need to spend additional money to enclose an existing building that may not meet the building enclosure opening limitation of 3.5% of the building envelope. Both of the examples cited are within the cost estimates assumed in the RDSIA.
3. The statement that *“all the openings on one of the two opposing walls must be fitted in some manner that keeps them generally closed...”* is not accurate. In addition to closing one or both sides of a building enclosure, PAR 1469 subparagraph (e)(2)(B) allows an owner/operator to *“Utilize a barrier, such as large piece of equipment that restricts air from moving through the building enclosure.”* This is one example of an optional rule requirement that arose from discussions with industry stakeholders to provide flexibility under the rule for owner/operators in an effort to minimize cost. While this requirement does exist independent of the 3.5% limitation, PAR 1469 provides sufficient flexibility to meet the building enclosure opening, while allowing openings on opposite walls to remain open in certain situations.
4. As previously stated, from site visits to more than 50 facilities subject to PAR 1469, staff observed that nearly all facilities currently have existing doors or windows installed in enclosure openings. Therefore, no additional cost is expected to be incurred by facility operators closing doors that directly face the nearest sensitive receptor, excluding schools, and nearest school within the distances prescribed in PAR 1469.
5. As previously stated, the RDSIA recognizes additional costs at approximately 10% of facilities that may need to spend additional money to enclose an existing building that may not meet the building enclosure opening limitation of 3.5% of the building envelope. Regarding the situation described in the comment where a facility operator elects not to close one end of a large building due to equipment access considerations but instead to construct a more expensive enclosure around the plating operation within the larger facility, the socioeconomic analysis typically only includes the costs that are directly related to PAR 1469 requirements. In the example in the comment letter, the RDSIA did not recognize the costs of a business decision that may result in higher costs than those that are the direct result of the requirements of PAR 1469, as those are speculative.
6. Regarding proper ventilation, previous comments submitted by MFASC and other commenters dealt specifically with closing of roof vents. Earlier versions of PAR 1469 proposed to require closure of all roof vents. SCAQMD staff worked with industry stakeholders to limit this requirement to roof vents located within 15 feet of a Tier II or Tier III Tank. In subsequent discussions with industry representatives, the issue of proper ventilation air exchange rate was no longer identified as

an issue. Staff believes that PAR 1469 provides sufficient flexibility to allow for proper ventilation without added costs.

Staff acknowledges that there may be more than one building enclosure at a facility. However, not all enclosure may house a Tier II or Tier III Tank. Based on staff's observations during facility site visits, a reasonable assumption of one enclosure housing a Tier II or Tier III Tank per facility was used.

31-5 Response: The comment accurately states that costs were assumed for drip trays at all Tier III and electrolytic tanks irrespective of whether the tank was part of a line with an automated hoist, in order to be conservative. The assumption of one drip tray per tank further assumes that drip trays will be sized to span between tanks in close proximity to each other, as many small plating shops are configured. During facility site visits, staff found that chromium plating and chromic acid anodizing lines have a well-defined direction of travel during operations. These observations validate the assumption of one drip tray per tank.

The RDSIA's assumption does not mean that staff presumed the only feasible compliance method was the use of drip trays or that they represent the only method that operators will choose to meet the spray rinsing requirements. The cost estimates assume that most facilities will choose the lowest-cost option that works for their configuration. It is assumed that the lowest cost option will probably be drip trays in most cases. However, PAR 1469 also allows for rinsing above the tank with low-pressure spray nozzles, as well as rinsing above the tank with high pressure spray nozzles provided the tank is shrouded by splash guards. Costs are provided for other scenarios as well as drip trays.

The MFASC relies on the six facilities that provided a survey response to develop assumptions for all facilities in the PAR 1469 universe. However, more than half of the facilities in the PAR 1469 universe include one or more rinse tanks within the plating or anodizing line, eliminating or greatly reducing the need for spray rinsing. This leaves a minority of facilities where it may be necessary to conduct spray rinsing at all. Furthermore, discussions with industry stakeholders have focused on compressed air drying of parts after rinsing, and changes to the proposed rule requirements were made to accommodate the preferred industry practice.

31-6 Response: The RDSIA did not include personnel labor costs as suggested, or the cost to shut down production during a source test as the amount of these costs are speculative and not typically recognized in a socioeconomic assessment.

Regarding the cost of preparing a permit application, SCAQMD permitting staff is available to consult with facility operators on the elements necessary

to submit a complete permit application. In general, this includes the application paperwork as well as the specifications for the control equipment. Based on discussions with contractors, the unit cost quoted is for a comprehensive suite of services from the contractor, from design through installation of the APC equipment and no additional cost for these elements is estimated in the RDSIA. Therefore, staff believes the cost to the facility operator to submit the permit application has been considered in the RDSIA.

A clarification has been added to the final staff report that SCAQMD staff will make an effort to minimize costs by consolidating equipment listed in the permits.

31-7 Response: The RDSIA based assumptions for Tier III tank estimates from compliance-staff site surveys and facility-completed written surveys and information was obtained to compile a reasonably representative number of facilities across most of the non-trivalent facility categories. Apportioning tank counts uniformly across the 12 non-trivalent facility categories does not yield an accurate distribution of presumed APC system installations, and would likely skew high in cost-revenue ratios for facility categories not subject to the APC add-on requirement and corresponding costs.

For facility categories with reported Tier III Tanks provided in either compliance-staff site surveys or facility-submitted written survey responses, the response rate was nearly 52%. When weighting the response rate by facility categories as a function of reported Tier III Tank counts, the response rate was nearly 51%. Therefore, the survey results portray a representative cross-section across facility categories to make reliable assumptions for APC system costing within each facility category.

Tier III Tank categorization in the RDSIA was made conservatively and the actual number of Tier III Tanks that will be subject to the APC system requirement will likely be less than the number used in cost calculations for the high-cost scenario. For example, Tier II Tanks were counted towards the Tier III Tank total count, but do not require an add-on APC system and in fact meet compliance by use of a tank cover that becomes a one-time capital expenditure and is overall significantly cheaper than the installation and O&M of an APC system.

Regarding the comment on assumptions based on limited number of survey responses, the comment refers to a unique case where there is more than one tank at the facility. Based on over 50 facility site visits conducted by staff, the majority of the 27 are decorative facilities and only have one electroplating tank. There is a small overlap between decorative chrome plating facilities that are currently controlled only by chemical fume suppressants and also have Tier III tanks. Therefore, the assumption of one

APC system per facility if fume suppressants are not certified is appropriate. Please see Response to Comment 31-1 regarding low-cost alternative that meets the same emission limit as chemical fume suppressants.

Regarding the comment on adjusted Tier III Tank counts, for the Anodizing – Medium facility category, the count was adjusted to remove 20 passivation and chem film tanks that are currently air sparged and would be candidates for agitation using fluid eductors, which have a much lower cost. The Decorative – Medium and Decorative – Small facility category tank counts were adjusted to remove stripping tanks that have a hexavalent chromium concentration lower than 1,000 ppm. Tables 1-8 and 1-9 in the final Staff Report (page 1-20) include the requested data.

Regarding the comment on venting multiple to a single APC system, the RDSIA presents two costing scenarios, including the high-cost scenario in which each tank is assumed to be vented to its own APC system, and a low-cost scenario where two tanks were assumed to be vented to one APC system.

The analysis conducted in the RDSIA attempted to identify all sources of cost from one-time capital expenditures to recurring O&M and compliance costs. The evolution of the assumptions and rule language for PAR 1469 has included the input from industry stakeholders over 13 Working Group Meetings, multiple Stationary Source Committee hearings, more than 50 site visits, and correspondence with industry and economic consultants. Through this continual input, the RDSIA accurately estimated costs associated with PAR 1469, but makes conservatively higher cost assumptions to allow for unforeseen expenses incurred as a result of compliance. For example, as previously stated, the count of Tier III Tanks used in the analysis includes Tier II Tanks. Please see Responses to Comment 31-5 regarding spray rinsing and 31-6 regarding permitting.

The language in the RDSIA is neutral with respect to low-cost scenario versus the high-cost scenario and recognizes that this represents a range of potential costs since each facility would make a specific business decision as to method of compliance.

Regarding the comment on discount rate, SCAQMD staff began to calculate cost-effectiveness of control measures and rules using the Discounted Cash Flow method with a discount rate of 4%. The choice of the 4% discount rate was based on the 1987 real interest rate on 10-year Treasury Notes and Bonds, which was 3.8%. The maturity of 10 years was chosen because a typical control equipment life is 10 years; however, a longer equipment life would not have corresponded to a much higher rate- the 1987 real interest rate on 30-year Treasury Notes and Bonds was 4.4%. Since 1987, the 4%

discount rate has been used by SCAQMD staff for all cost-effectiveness calculations, including BACT analysis, for the purpose of consistency. The incremental cost reported in this assessment was thus annualized using a real interest rate of four percent as the discount rate. As a sensitivity test, a real interest rate of one percent was also used, which is closer to the prevailing real interest rate. Staff has seen nominal interest rates of 5%-7% used in regulatory impact analyses (including by the California Air Resources Board), but is not aware of regulatory impact analyses utilizing a 7% real interest rate.

On August 8, 2018, staff published the RDSIA, which included an additional provision for a low-cost compliance option that is as equally effective as chemical fume suppressants. Paragraph (l)(5) in PAR 1469 allows for use of this SCAQMD-approved alternative if no certified chemical fume suppressant is available after July 1, 2021. Although the probability for certification of a non-PFOS wetting agent chemical fume suppressant by 2021 cannot be ascertained at this time, the comment does not acknowledge the availability of the alternative compliance option, which adds additional pathways for a facility to avoid the requirements assumed in the high cost scenario. Staff identified four outcomes for the 27 facilities using chemical fume suppressants currently to meet the 0.01 mg/amp-hr emission limit:

1. By July 1, 2021, a certified non-PFOS wetting agent chemical fume suppressant is approved, and facilities require no modifications to their current process line;
2. If no certified chemical fume suppressant is available, facilities may use an SQAQMD approved alternative that achieves the equivalent emission limit as the chemical fume suppressant, and SCAQMD will assume the cost for initial source test verification of the emission limit;
3. If no certified chemical fume suppressant is available and there is no achievable means of meeting an equivalent emission limit, the facility would then be required to install an APC system for emission control of electrolytic tanks. SCAQMD staff is committed to seeking funding options for these smaller facilities should this be the case.
4. The facility can opt to phase out the use of hexavalent chromium by July 21, 2022.

31-8 Response: In response to the request to highlight the individual facilities most impacted by compliance costs, staff applied the facility-based impact analysis to this subset of facilities meeting SCAQMD's definition of a small

business for the purpose of qualifying for access to services from SCAQMD's Small Business Assistance Office, or those facilities with an annual revenue of \$5 million or less and 100 or fewer employees. Based on this definition, 64 out of 115 potential facilities were identified as a small business. These facilities have higher average cost impacts when compared to the average cost impacts of all 115 affected facilities. These 64 facilities have an average annual cost impact of 3.4% to 6.0% across all facility categories, with the most significant impacts affecting the Decorative (Medium) (7.1% - 11.0%), Anodizing (Medium) (5.4% - 8.8%), Anodizing (Small) (5.6% - 8.4%), and Decorative (Small) (3.8% - 8.3%) categories. All other categories had average annual cost impacts generally less than 3.1%. Upon closer inspection, a significant amount of the cost burden is potentially due to SCAQMD's assumptions regarding the classification of Tier II Tanks as Tier III Tanks leading to very conservative cost estimates (see Response to Comment 31-1). In addition, we have found some issues with Dun & Bradstreet's revenue and employee data that are also contributing significantly to the excess cost impacts on the subset of facilities classified as small businesses. We duplicated Table 9 of the RDSIA for the 64 facilities that meet the criteria of a small business in Table A-1 below.

Table A-1
Summary of Average Cost Impacts for 64 Facilities
that Meet Small Business Definition (less than \$5,000,000 in annual revenue and
fewer than 100 employees)

Category	Average Facility Annual Cost (Low Cost Scenario - High Cost scenario)	Range of Facility Annual Cost (Min - Max)	Average Cost Impacts (Low Cost scenario - High Cost Scenario)
Anodizing (Medium)	\$55,000 - \$90,000	\$59,094 - \$97,154	5.4% - 8.8%
Anodizing (Small)	\$44,000 - \$65,000	\$43,854 - \$65,531	5.6% - 8.4%
Decorative (Large)	\$3,000 - \$3,000	\$3,181 - \$3,245	2.0% - 2.0%
Decorative (Medium)	\$16,000 - \$24,000	\$15,514 - \$23,970	7.1% - 11.0%
Decorative (Other)	\$3,000 - \$3,000	\$3,038 - \$3,108	3.0% - 3.0%
Decorative (Small)	\$12,000 - \$26,000	\$12,118 - \$26,482	3.8% - 8.3%
Hard (Large)	\$22,000 - \$30,000	\$21,542 - \$29,642	2.3% - 3.1%
Hard (Medium)	\$7,000 - \$7,000	\$6,201 - \$6,253	1.3% - 1.3%
Hard (Small)	\$2,000 - \$4,000	\$1,102 - \$4,109	0.2% - 0.3%
Trivalent Other	\$0 - \$0	\$226 - \$226	0.0% - 0.0%
Total	\$22,000 - \$36,000	\$226 - \$97,154	3.4% - 6.0%

In an effort to be cost-conservative, the estimate of Tier III Tanks in the RDSIA includes tanks that will be Tier II Tanks if they are operated within the temperature and hexavalent chromium concentration defined in PAR 1469 Appendix 10. PAR 1469 allows Tier II Tanks to be controlled using much less expensive methods such as covers and mechanical fume suppressants as compared to Tier III Tanks which will require add-on pollution control devices, however the RDSIA assumes all Tier II Tanks will be Tier III tanks as a conservative cost assumption.

In addition, many of the stripping or electropolishing tanks that are currently assumed to be Tier III tanks in the RDSIA can drop below a concentration of 1,000 ppm for Tier I Tank and would not require in tank or add-on pollution controls to meet the emission limit requirements under PAR 1469. As shown in Table 1-9 of the Draft Staff Report, operators of stripping and electropolishing tanks have demonstrated that a tank bath can operate below a hexavalent chromium concentration of 1,000 ppm.

An actual example of an individual facility within the Anodizing (Small) category contains two stripping tanks that were identified as Tier III Tanks that could be considered non-Tier III Tanks. Under current conservative cost assumptions, this facility has a cost-to-revenue ratio of 12.5% to 18.7% for the low and high cost scenarios. Operating these tanks as non-Tier III Tanks would significantly reduce the facility costs from annualized capital costs and O&M costs for installing and operating APCs. The estimated cost-to-revenue would be 1.4%. With this more accurate estimate of the cost-to-revenue the revised average cost-to-revenue for Anodizing (Small) would be 1.9% to 2.6% for both the low and high cost scenarios.

In the category of Decorative (Medium) facility, Dun & Bradstreet underreported the employee count by 1300% when compared to inspector data. Closer review of the Dun & Bradstreet employee data used in the facility-based impact analysis indicates that facility revenues may be underreported. Comparison revealed large discrepancies between the Dun & Bradstreet employee count data and data gathered from SCAQMD inspector reports. SCAQMD inspectors visit Rule 1469 facilities quarterly and include the number of employees based on interviews with the owner or operator of the facility. Combining Dun & Bradstreet revenue data along with SCAQMD employee data for this facility, results in an average revenue per employee of just \$2,864 annually. Typically, based on US Census Bureau data, one would expect to see revenue per employee 50 times that amount for the Electroplating, Plating, Polishing, Anodizing, and Coloring Industry (NAICS 332813). As a result of revenue underreporting, this facility has a cost-to-revenue ratio of 41.7% to 64.4% for the low and high cost scenarios. If this outlier is removed from the facility-based impact analysis results, the revised annual average cost impact for Decorative (Medium) would be 2.2 to 3.4%.

In the category of Decorative (Small) facility Dun & Bradstreet underreports a facility's employee count by 1300%. Using SCAQMD's employee count data results in an updated average revenue per employee of \$9,882. This facility has a cost-to-revenue ratio of 9.4% to 20.6%. Staff believes the underreporting of employee data points toward Dun & Bradstreet potentially underreporting revenue data thus resulting in severely exaggerated cost impacts for those facilities.

In the Decorative (Small) facility, there are 12 stripping and electropolishing tanks. As previously discussed, in the RDSIA it is assumed that these tanks are Tier III Tanks and will install air pollution control devices. A more reasonable assumption is that facilities will take a lower cost option and either maintain a tank bath with a hexavalent chromium concentration below 1,000 ppm as demonstrated with other facilities (Table 1-9 of the Staff Report) or use a chemical stripping tank. This would reduce the annual average cost to about \$5,000 per facility. The revised annual average cost for Decorative (Small) facilities would be 1.5% to 5.7%. The 5.7% cost-to-revenue reflects installation of add-on pollution controls if chemical fume suppressants are not certified. As previously discussed in the Staff Report, the SCAQMD staff is committed to seek funding and low cost alternatives if chemical fume suppressants are not certified.

In the category of Anodizing (Medium) there is one facility that meets small business definition. Staff believes that the revenue for this facility is likely underreported, leading to a cost-to-revenue ratio of 5.4% to 8.8% for the low and high cost scenarios. An indicator that the revenue reported for this facility may be underreported is the comparison to other Anodizing (Medium) facilities. In the category of Anodizing (Medium) there are sixteen facilities representing an average revenue of \$24,000,000. This facility's revenue compared to the other Anodizing (Medium) facilities represents 4.6%. It is important to note that this outlier facility is the only facility in the anodizing medium category and contributes significantly to the inflated average cost impacts reported in the facility-based impact analysis. Table A-2 includes a column with revised average cost impacts for the 64 facilities with less than \$5,000,000 in annual revenue.

Table A-2
Summary of Average Cost Impacts including Revised Cost Impact Estimates for 64
Facilities That Meet Small Business Definition (less than \$5,000,000 in annual
revenue and fewer than 100 employees)

Category	Average Facility Annual Cost (Low Cost Scenario - High Cost scenario)	Range of Facility Annual Cost (Min - Max)	Average Cost Impacts (Low Cost scenario - High Cost Scenario)	Revised Average Cost Impacts (Low Cost scenario - High Cost Scenario)
Anodizing (Medium)	\$55,000 - \$90,000	\$59,094 - \$97,154	5.4% - 8.8%	- ^a
Anodizing (Small)	\$44,000 - \$65,000	\$43,854 - \$65,531	5.6% - 8.4%	2.1% - 3.2% ^b
Decorative (Large)	\$3,000 - \$3,000	\$3,181 - \$3,245	2.0% - 2.0%	2.0% - 2.0%
Decorative (Medium)	\$16,000 - \$24,000	\$15,514 - \$23,970	7.1% - 11.0%	2.2% - 3.4% ^c
Decorative (Other)	\$3,000 - \$3,000	\$3,038 - \$3,108	3.0% - 3.0%	3.0% - 3.1%
Decorative (Small)	\$12,000 - \$26,000	\$12,118 - \$26,482	3.8% - 8.3%	1.5% - 5.7% ^d
Hard (Large)	\$22,000 - \$30,000	\$21,542 - \$29,642	2.3% - 3.1%	2.3% - 3.1%
Hard (Medium)	\$7,000 - \$7,000	\$6,201 - \$6,253	1.3% - 1.3%	1.3% - 1.3%
Hard (Small)	\$2,000 - \$4,000	\$1,102 - \$4,109	0.2% - 0.3%	0.2% - 0.3%
Trivalent Other	\$0 - \$0	\$226 - \$226	0.0% - 0.0%	0.0% - 0.0%
Total	\$22,000 - \$36,000	\$226 - \$97,154	3.4% - 6.0%	1.7% - 3.7%

^a Revenue reported was 4.6% below average for all Anodizing (Medium) facilities. Only facility in category.

^b Assumes facility with stripping tank will choose a lower cost option to maintain tank below 1,000 PPM or use a chemical stripper instead of installing an add-on air pollution control device.

^c Removed outlier facility whose reported employees was 1300% below information provided and observed by SCAQMD inspector.

^d Assumes 12 facilities with stripping and electropolishing tanks will choose a lower cost option to maintain tank below 1,000 PPM or use a chemical stripper instead of installing an add-on air pollution control device.

The MFASC attempted to account for compliance cost variability across facilities by using a binomial expansion to calculate the probability that a given number of Tier III Tanks are located at an individual facility. This analysis is based on data provided to the MFASC consultants by the SCAQMD regarding the number of facilities with Tier III Tanks and the total number of Tier III Tanks for each facility category. Ultimately, the MFASC used these probability calculations to estimate the number facilities with compliance costs exceeding the 3% and 5% cost to revenue thresholds. The analysis relies on a coarse approximation of the cost calculations used the SCAQMD's analysis. This approximation assumes a simple linear relationship between annual compliance costs and the number of Tier III Tanks at a facility, plus a fixed cost.

Staff believes the analysis presented also overstates the percentage of facilities in the Hard (Large) category with cost impacts greater than 3% of

revenues. Neglecting to condition the probability calculations on the assumption that 9 of 18 facilities do not contain Tier III Tanks leads to overestimating the number of facilities exceeding the 3% cost threshold by approximately 20% in the high cost scenario. In addition, the commenters report ‘preliminary’ analysis for the Decorative (Small) category. No data or assumptions accompany the commenter’s findings, but if we apply the same cost function approximation used in the Hard (Large) analysis, along with a total of 8 Tier III Tanks across 27 facilities in the Decorative (Small) category, and a 5% closure threshold, staff finds that the MFASC overestimates the number of closures by 255% at minimum.

31-9 Response: Please see Responses to Comments 31-1, 31-7 and 31-8 for a discussion of the impacts on small businesses.

The resolution includes a provision to seek financial assistance to assist facilities in installation of pollution controls or use of non-toxic alternatives, if non-PFOS chemical fume suppressants are not re-certified, and to identify a low-cost compliance option that is as equally effective as chemical fume suppressants. The MFASC’s suggestion of a Board Resolution seeking financial assistance irrespective of whether non-PFOS fume suppressants are recertified was not incorporated.

In addition, staff believes there may be difficulty administering a financial assistance program where costs and revenue cannot be accurately verified. A provision that would allow a facility access to financial assistance based of their capital cost estimates may be difficult to ensure the facility is not overestimating actual costs. Some facilities have indicated that they intend to install more than what is directly required by PAR 1469.



September 4, 2018

Staff

Cynthia Babich
Director

Board of Directors

Florence Gharibian
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Cynthia Medina Assistant
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Lydia Valdez
Homeowner/Resident

Brenda Bibee
Volunteer Coordinator

Mallory Graves
Board Member

Emeritus Board

Lizabeth Blanco
Homeowner/Resident

In Memoriam

Nick Blanco
Homeowner/Resident

Barbara Stockwell
Homeowner

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 Dr. Clark E. Parker Sr., Vice Chair – Senate Rules Committee Appointee
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 Council Member Joe Buscaino – 15th District ~ City of Los Angeles
 Council Member Michael A. Cacciotti – City of South Pasadena ~ Cities of Los Angeles County ~ Eastern Region
 Joseph K. Lyou, Ph. D – Governor’s Appointee ~President & CEO Coalition for Clean Air
 Mayor Larry McCallon – City of Highland ~ Cities of San Bernardino County
 Mayor Pro Tem Judith Mitchell – City of Rolling Hills Estates ~ Cities of Los Angeles County ~ Western Region
 Supervisor Shawn Nelson - Fourth District ~ County of Orange
 Council Member Dwight Robinson - City of Lake Forest ~ Cities of Orange County
 Supervisor Janice Rutherford – Second District ~ County of San Bernardino
 Supervisor Hilda L. Solis – First District ~ County of Los Angles

Dear Board Members of the South Coast Air Quality Management District,

RE: Opposed to adoption of Rule 1469

The Del Amo Action Committee (DAAC) is asking the South Coast Air Quality Management District (SCAQMD) Governing Board to withhold approval of Rule 1469. This request is being made because the rule as currently written does not insure that dangerous Hexavalent (HX) Chrome emissions will be significantly reduced. The rule does not provide adequate and certain protection for the people living near the facilities or the children and teachers in schools. It would be extremely difficult to enforce the rule’s requirements.

32-1

The SCAQMD is doing exceptional work in Paramount and in other Los Angeles communities in identifying unacceptable HX Chrome emissions, identifying the companies causing the emissions and ordering them to reduce the emissions. This work has enabled the SCAQMD to more specifically identify the sources of those emissions. We anticipated the revision to Rule 1469, an amendment, to compliment and support this tremendous work. Unfortunately it does not.

P. O. Box 549, Rosamond, California 93560
Office: 661-256-7144

Robina Suwol, Executive Director of California Safe Schools, Cynthia Babich, Del Amo Action Committee (DAAC) Executive Director and Florence Gharibian DAAC Chair met with Susan Nakamura SCAQMD Assistant Deputy Executive Officer and her staff to discuss Draft Rule 1469 on August 23, 2018. This meeting was convened due to comments Mrs. Gharibian offered during an August Stationary Source meeting. In part Mrs. Gharibian was motivated to comment because she overheard an industry representative briefing other industry representatives before the July 2018 Stationary Source meeting saying that the rule was much better. "All the enforcement had been taken out and the rule was much lighter".

32-1
(cont'd)

The draft rule is replete with alternative options that undermine essential rule requirements. The rule continues to rely heavily on chemical fume suppressants rather than known, technically feasible air pollution controls. Rule requirements regarding HX Chrome tank enclosures have unacceptable compromises. The rule provides approved housekeeping methods that will almost certainly expose workers to higher levels of HX Chrome and will almost certainly result in additional environmental contamination. The rule does not clearly define emission limits for HX Chrome; it is not possible to identify this essential bottom line.

32-2

The rule has building enclosure requirements, but also includes language that minimizes those requirements. The rule requirements for emission controls focus on the HX Chrome tanks. Monitoring emissions from these tanks to ensure compliance with the requirements would be very difficult; in fact one of the biggest problems with this rule is the lack of monitoring associated with it.

32-3

SCAQMD air monitoring in Paramount is based on HX Chrome ambient air emissions and comparison with background levels. The SCAQMD imposed stricter enclosure requirements at a facility in Newport Beach, requiring negative pressure in the areas of a facility where HX Chrome tanks are located. This has resulted in much lower HX Chrome emissions. If this standard were applied to all HX Chrome facilities it would provide greater insurance of significant reductions. According to the CA Air Resources Board (ARB), the Los Angeles Area has 17% higher readings for HX Chrome than anywhere else in the state. This also argues for maximum control of HX Chrome emissions via total enclosure with negative air.

32-4

The draft Rule 1469 has the potential imposition of a strict total enclosure requirement on facilities if they fail critical source tests. These source tests are conducted by facility operators. The SCAQMD Executives Officer (EO) would be notified and SCAQMD staff could observe the tests but this is not anticipated in the rule. Greater confidence in the source test findings would be achieved if trained SCAQMD staff participated in the source tests. The language for an initial source test is confusing and may or may not require submittal of a source test protocol with approval from the EO before the source test is completed. Subsequent source tests at larger facilities are not due before 5-7 years. Adequate source testing provides information to demonstrate controls are effective. Five years is too long to wait for this critical information.

32-5

Members of the Los Angeles Environmental Justice (LA EJ) Network are lobbying for laws and regulations to phase out HX Chrome in California. Because HX Chrome has no safe threshold level exposure and because we anticipate the dangerous chemical will continue to be used, until a phase out can be achieved, it is vital that maximum precautions be set in place to significantly reduce exposures

32-6

to metal plating shop workers and the surrounding communities. Unfortunately Rule 1469 as currently drafted will not achieve this goal. What is needed is an absolute bottom line HX Chrome emission restriction. That restriction should be understandable clearly defined and with clear steps on what is needed to achieve this limit. 32-6 (cont'd)

The rule language is disorganized and inconsistent. Mrs. Gharibian carefully reviewed the draft version of the rule published on August 8, 2018. She found conflicting language regarding building enclosure, use of air pollution control equipment, time frames and distances from sensitive receptors. Some distances are measured in meters, some in feet, etc. Some begin at property borders, some at tanks and stacks. The rule provides multiple options for gaining EO approval to use alternatives, allowing them to be in compliance with the rule. Several steps require submittal of documents and EO approval before the work is completed. These include certification of training, etc. One section offers an “alternative for compliance” which is the submittal of a permit application including some but not all the rule requirements. This alternative is offered on page 46 of the document. An attempt to prepare a flow chart describing rule conditions, compliance dates and alternatives would result in a mysterious maze that would frustrate the most ardent engineer. 32-7

We understand that ARB is currently in the process of updating their HX Chrome rule. We recommend that SCAQMD staff work with the ARB, share the draft 1469 Rule language and commit to revisions of both updates that result in clear, understandable requirements that provide certainty to the regulated community and protection to communities where the facilities are located. We think this is an appropriate and necessary endeavor. 32-8

Cynthia Babich
Director
Del Amo Actin Committee

Florence Gharibian
Board Chair
Del Amo Action Committee

Responses to Del Amo Action Committee Comment Letter, submitted 9/4/18

32-1 Response: Implementation of Proposed Amended Rule (PAR) 1469 will require pollution controls on hexavalent chromium tanks that are currently not regulated, add requirements for building enclosures, parameter monitoring, and periodic source testing, and include limitations and restrictions for facilities located near sensitive receptors and schools. All of these requirements will reduce hexavalent chromium emissions from facilities subject to Rule 1469. Furthermore, PAR 1469 incentivizes facilities that make an early commitment to phase out hexavalent chromium from their process by delaying requirements to install add-on air pollution controls on Tier III Tanks.

During the rulemaking process for PAR 1469, staff conducted site visits and met with all stakeholders to understand their concerns. Based on this feedback, staff either included rule language changes or explained to the stakeholders why certain requested changes would not be made.

All requirements in PAR 1469 are enforceable. PAR 1469 includes additional requirements which will reduce the hexavalent chromium emissions from facilities and clarified ambiguous rule language to ensure rule enforceability.

32-2 Response: PAR 1469 allows use of an alternative compliance method provided it is meets specific criteria and is approved by the Executive Officer. Alternative compliance methods are not exemptions from a provision, but allow the operator to identify a different method that was not considered during the rulemaking process or to develop a method to address a unique situation at a facility. The Executive Officer will evaluate the alternative method to ensure it is equally as effective in meeting the air quality objective of the method it is replacing. The following provides examples of alternative compliance methods in PAR 1469:

- PAR 1469 requires a facility to close openings to eliminate cross-draft. In addition to some specific options such as a door that automatically closes, overlapping plastic strip curtains, vestibule, or an airlock system, subparagraph (e)(1)(E) allows an:
 - “Alternative method to minimize the release of fugitive emissions from the building enclosure that the owner or operator of a facility can demonstrate to the Executive Officer is an equivalent or more effective method(s) to minimize the movement of air within the building enclosure.”
- Paragraph (e)(6) includes a provision that if an operator claims that the building enclosure provisions are in conflict with OSHA or CAL-OSHA or other requirements, the operator must:
 - Submit a Building Enclosure Compliance Plan for Executive Officer approval that:

- Identifies the building enclosure provisions that are in conflict with OSHA or Cal-OSHA or other municipal codes or agency requirements; and
- Includes alternative measures that minimize the release of fugitive emissions to the outside of the building enclosure.
- Subdivision (i) includes provisions for an “Alternative Compliance Method” for meeting the emission limits for electroplating and anodizing tanks and Tier II and III Hexavalent Chromium Tanks. This provision is an existing provision that allows an owner or operator to submit for approval an alternative compliance method that “provides an equal, or greater hexavalent chromium emission reduction, and provides an equal or greater risk reduction that compliance with emission limits specified in paragraphs (h)(2) and (h)(4)”.

Use of chemical fume suppressants is an existing provision under Rule 1469. Currently, Rule 1469 allows the following two categories of facilities to use chemical fume suppressants as their sole means of controlling hexavalent chromium from plating or anodizing tanks:

- A facility less than 330 feet from the nearest sensitive receptor and less than 20,000 amp-hours/year facility-wide; or
- A facility greater than 330 feet from nearest sensitive receptor and less than 50,000 amp-hours/year facility-wide.

There are currently 27 facilities in the universe of 115 facilities that are using chemical fume suppressants as their sole means of controlling hexavalent chromium emissions. These represent the smallest throughput facilities. Based on permitted amp-hours, these facilities on average represent less than 1% of the average permitted amp-hours per facility.

Chemical fume suppressants are able to reduce hexavalent chromium emissions by approximately 99 percent. This has been an effective control approach for smaller throughput facilities. PAR 1469 establishes a schedule to re-evaluate chemical fume suppressants based on their emissions and health effects. If chemical fume suppressants are not certified, these 27 facilities will have three options: use a SCAQMD approved alternative that is equivalent or better than chemical fume suppressants, install add-on pollution controls, or phase-out the use of hexavalent chromium.

PAR 1469 includes building enclosure requirements for Tier II and Tier III Hexavalent Chromium Tanks, which currently do not exist in Rule 1469. The building enclosure requirements ensure that PAR 1469 continues to be health protective while allowing adequate access to buildings and taking into account building safety requirements.

Most of the housekeeping provisions in PAR 1469 are existing requirements. Housekeeping methods will not increase the exposure of workers to hexavalent chromium or result in additional contamination.

PAR 1469 added a definition of “approved cleaning method” which includes many of the cleaning methods allowed under the existing Rule 1469. In addition to the methods allowed by the existing Rule 1469, PAR 1469 allows the use of low pressure water spray nozzles, removed the use of hand wiping, and chemical dust suppressants to comply with housekeeping provisions. Under the existing Rule 1469 and PAR 1469, wastewater from cleaning operations will need to adhere to state and federal wastewater requirements. Based on staff site visits, Rule 1469 facilities have on-site wastewater treatment systems to treat wastewater from cleaning operations as well as other parts of their operations. The environmental impacts of PAR 1469 were analyzed and disclosed in the Environmental Assessment.

PAR 1469 includes clearly defined emission limits for electrolytic tanks and Tier II and III Hexavalent Chromium Tanks. For hard and decorative electroplating and chromic acid anodizing tanks, emission limits are specified in Table 1. These emission limits are consistent with CARB’s Air Toxics Control Measure (ATCM) for chromium plating and anodizing. For Tier II and Tier III Tanks, emission limits are specified under paragraphs (h)(4) and (h)(5), respectively.

32-3 Response: The building enclosure requirements in PAR 1469 are specified in subdivision (e). Rule 1469 currently does not include any building enclosure requirements and by including these additional requirements, PAR 1469 is more stringent and health protective. Although U.S. EPA’s Method 204 allows for building openings of up to 5%, PAR 1469 only allows openings of up to 3.5% since there are no requirements for negative air. The building enclosure requirements ensure that PAR 1469 continues to be health protective while allowing adequate access to building and taking into account building safety requirements.

PAR 1469 strengthens the existing provisions for monitoring by incorporating the following provisions:

- In paragraph (k)(1), requiring periodic source test once every five years for facilities with a throughput of greater than 1,000,000 amp-hours annually; and once every seven years for facilities with a throughput of less than or equal to 1,000,000 amp-hours annually (Existing Rule 1469 only requires a one-time source test).
- In subparagraph (m)(1)(B), measuring the inlet velocity of air flow of add-on pollution controls to ensure the collection efficiency is being maintained.

Provisions to measure the collection efficiency complement existing provisions to conduct a smoke test to ensure the air flow is not being impacted by cross-drafts, and monitoring the pressure across the filter media for early identification of a breach or clog in the filter media of the

air pollution control device. In addition, PAR 1469 places greater emphasis on these monitoring provisions by using more than one non-passing source test within a 48-month period and failure to shut down a tank after either a failed smoke test or collection efficiency test as the triggers for installation of a permanent total enclosure. Staff considers the impact to the regulated community while maintaining the objective of public health protection. More than half of the facilities regulated under PAR 1469 meet the SCAQMD's definition of small business – less than 100 employees and \$5,000,000 in annual revenue. After installation of add-on pollution controls, source testing is the next most expensive provision. PAR 1469 provides additional source testing and parameter monitoring, while considering the impact to businesses affected by these proposed requirements.

Ambient monitoring will be addressed in Proposed Rule 1480 and will include facilities that emit metal toxic air contaminants.

32-4 Response: The requirements at the Newport Beach facility were a result of an Order for Abatement, which focused on the specific situation at that facility. This is separate from rulemaking.

PAR 1469 includes a conditional provision to require a permanent total enclosure. SCAQMD staff believes the most important provisions under PAR 1469 are the direct emission controls for high emitting hexavalent chromium tanks and building enclosure requirements. The estimated cost for a permanent total enclosure is \$92,000 assuming 6 air exchanges per hour to \$170,000 assuming 15 air exchanges per hour. PAR 1469 will substantially reduce hexavalent chromium emissions. As previously mentioned, staff considers the impact to the regulated community while maintaining the objective of public health protection. More than half of the facilities regulated under PAR 1469 meet the SCAQMD's definition of small business – less than 100 employees and \$5,000,000 in annual revenue.

32-5 Response: PAR 1469 requires that facilities submit a protocol that will detail how the source test will be conducted. Most facilities will use a source testing company to conduct the source test. The source testing company is required to follow the approved protocol. The results of the source test are submitted to SCAQMD staff for review and approval. If the source test is not conducted pursuant to the approved protocol, the source test will not be approved and the facility could be required to correct the deficiency or conduct another source test. PAR 1469 requires that the facility notify the Executive Officer prior to conducting the source test so staff can witness the source test.

The initial source test requires submittal of a source test protocol. Operators may rely on an existing approved protocol for subsequent source tests if

operating parameters of the tank and the pollution controls have not changed.

PAR 1469 relies on a variety of tools to ensure proper operation of air pollution control devices. Although the source tests are conducted every five to seven years, monitoring of key parameters of the air pollution control device such as the pressure across the filter media, smoke tests, and velocity tests are conducted at least twice a year. As previously discussed, this industry has a high percentage of small businesses. Staff took into account the financial impact and public health protection during the development of PAR 1469.

32-6 Response: The Resolution includes a commitment for the SCAQMD staff to work with the state on phasing out the use of hexavalent chromium, where appropriate. In addition, the Resolution also includes a commitment to conduct a technology assessment on alternatives to hexavalent chromium for metal finishing operations and to conduct a pilot study. The SCAQMD staff is committed to working with stakeholders to evaluate alternatives to hexavalent chromium and to work towards a phase-out.

PAR 1469 will reduce exposures to workers and surrounding communities from hexavalent chromium. Installation of pollution controls on tanks that are currently unregulated that were previously not known to have high hexavalent chromium emissions will substantially reduce the exposure to hexavalent chromium to workers as well as the surrounding communities. Implementation of building enclosure provisions will also further reduce exposure to neighbors surrounding hexavalent chromium plating and anodizing facilities.

PAR 1469 establishes strict hexavalent chromium emission standards for hard and decorative plating tanks, anodizing tanks, and Tier II and III Hexavalent Chromium Tanks. Provisions are specified under subdivision (h).

32-7 Response: As staff explained in our meeting with representatives of the Del Amo Action Committee, the format of PAR 1469 follows CARB's ATCM and builds upon the structure of currently existing Rule 1469. During the rulemaking for PAR 1469, staff took out sections of the rule language and moved them to an appendix, placed confusing text within a table format, as well as provided additional clarity on provisions which were confusing for facilities to comply with and SCAQMD staff to enforce. One example of this change is that staff replaced all the units in PAR 1469 to consistently use feet instead of meters and feet.

The distances in PAR 1469 are different depending on the specific provision. When specifying distances in PAR 1469, staff either based those

distances on the standard approach of health impacts which uses the emission source (i.e. edge of tank or centroid of emission point sources) or from the edge of the facility property for fugitive sources. PAR 1469 also maintains consistency with CARB's ATCM, which specifies how distances should be calculated. Some distances were increased in order to be more health protective towards schools based on feedback from stakeholders. For example, subparagraph (e)(3)(A) requires that openings directly facing and within 1,000 feet of the nearest sensitive receptor, excluding schools, be closed while subparagraph (e)(3)(B) requires that that openings directly facing and within 1,000 feet of the nearest school be closed.

PAR 1469 includes provisions under subdivision (i) for an "Alternative Compliance Method" for meeting the emission limits for electroplating and anodizing tanks and Tier II and III Hexavalent Chromium Tanks. The provision is not just the submittal of a permit application. This provision is an existing provision that allows an owner or operator to submit for approval an alternative compliance method that "provides an equal, or greater hexavalent chromium emission reduction, and provides an equal or greater risk reduction that compliance with emission limits specified in paragraphs (h)(2) and (h)(4). As explained in Response to Comment 32-2, alternative compliance methods are not exemptions from a provision, but allow the operator to identify a different method that was not considered during the rulemaking process or to develop a method to address a unique situation at a facility. This allows facilities flexibility in ensuring compliance while still meeting the rule requirements and emission limits.

32-8 Response: Staff is committed to work with CARB on revisions to the state ATCM for plating and anodizing operations.

September 5th, 2018

Honorable Board Chair Burke & Boardmembers
 South Coast Air Quality Management District
 21865 Copley Drive
 Diamond Bar, CA 91765

Dear Honorable Board Chair Burke & Boardmembers,

We are deeply appreciative of the extensive efforts the District spearheaded in the City of Paramount, Compton and the collaboration with other agencies to identify hexavalent chromium, nickel metals, and other highly toxic emissions through monitoring and inspections.

Our organizations have actively participated in the 1469 Rule meetings and Workshops with staff from its inception. We have consistently expressed concerns about emissions from hexavalent chromium near homes and schools adjacent to facilities and the toxic hexavalent chromium and other chemicals including the fume suppressants. We have also expressed concerns about the vulnerable staff working in these facilities.

While we are grateful for the opportunity to comment, we cannot support Rule 1469 because of the following issues that we have consistently raised in Workshops, Meetings, and in discussions with staff:

- 1) Rule 1469 does not include monitoring to verify that anticipate emissions reductions are occurring. — 33-1
 - 2) Chrome platers can operate their facility with the doors open for hours at a time. This would allow highly toxic chemicals to be emitted into schools yards and onto residential properties. — 33-2
 - 3) Parks have been omitted from the definition of places where sensitive receptors need protection. Parks are often adjacent to schools, and have cooperative agreements that allow schools to plant gardens, hold outdoor classes, school related celebrations, and athletic events. Many families reside in areas with limited green space and frequent parks in the way others would use their back yards. Parks have been previously included in other rules for protection from the release of toxic chemicals. — 33-3
 - 4) The rule is inconsistent on the distances from schools and sensitive receptors. Is distance measured from the tanks, school or sensitive receptor property line, or stacks? — 33-4
 - 5) The rule is inconsistent in terms of measurements. For example, in some instances feet are used to measure distances and in other meters. — 33-5
 - 6) Under this rule the facilities appear to be without consistent thorough oversight to ensure emission are reduced and ultimately eliminated — 33-6
 - 7) We know that both the hexavalent chromium and the fume suppressants used in this industrial process are highly toxic. Rule 1469 fails to provide much needed protections from exposure to these chemicals. — 33-7
- In October of 2017 our organizations and many others signed onto a letter to Executive Officer Wayne Nastri outlining concerns. The concerns we raised then, remain. Below, is a copy of that letter. — 33-8

From: Robina <robinasuwo1@earthlink.net>
 To: wnastri@aqmd.gov
 Cc: snakamura@aqmd.gov, ekang@aqmd.gov
 Subject: RE: RULE 1469 - Chrome Plating Facilities (please see attached)
 Date: Oct 25, 2017 10:28 AM
 Attachments: FINAL NASTRI 10252017 RULE 1469.pdf

Dear Executive Officer Nastri,

I have been asked to forward this letter surrounding Rule 1469.
 Thank you for your consideration.

Wayne Nastri
 Executive Officer
 South Coast Air Quality Management District
 21865 Copley Drive
 Diamond Bar, CA 91765

October 25, 2017

Dear Mr. Nastri,

Our organizations are very concerned about the lack of protections for communities in the proposed chrome plater rule which South Coast is planning on issuing in a few months. The rule has been significantly weakened since it was first proposed, abandoning ambient monitoring provisions, scaling back the use of HEPA filters, and removing the requirements for total enclosure with negative air. To say we are disappointed is an understatement.

Chrome platers emitting hexavalent chromium into our communities have been very problematic in the South Coast Basin for a long time. Many of our organizations worked on the existing state rule in 2006 and the subsequent local rules in South Coast. We pushed hard for the best protections available then, and to have more stringent requirement for platers located next to schools and sensitive receptors. It is apparent to us now that many facilities just did not comply with the rules and some sources went completely unregulated altogether. From the plater next to Suva School, to Master Plating, to the platers in Paramount and Compton now, the devastating public health effects to communities hosting these plating operations are an endemic part of the terrible history of environmental injustice in the South Coast region.

Chrome platers are concentrated in the Los Angeles area. No one really knows how many of these facilities exist, not even your own staff, but over 10% of all the chrome platers in the nation call the South Coast air basin their home. New facilities operating without permits are discovered often. These platers, already concentrated in our air basin, are further concentrated in low-income communities of color where enforcement is lax and regulators commonly turn a blind eye to complaints about odors and

33-8
 (cont'd)

emissions. The communities of Paramount, Compton, and parts of East Los Angeles all have concentrated pockets of platers.

This concentration of chrome platers in communities is further exacerbated by other sources of hexavalent chromium emissions such as forgers and metal heat treaters, and potentially other sources not yet identified. Since there are so few air monitors in the basin which detect hexavalent chromium, it would be simply blind luck if a monitor were to be placed in one of these areas of concentration. Ironically, it was the air monitor placed to measure the emissions from Carlton Forge which inadvertently identified the platers in Paramount as a hexavalent chromium air pollution hot spot.

Each and every source of hexavalent chromium is contributing to the emissions which are endangering our communities. Each and every source needs to take on the responsibility to cease to emit this highly toxic chemical into our homes, schools, play yards, community centers, and churches. Our communities should not bear the burden for these emissions with their health and well-being.

When the original rule making on chrome platers started earlier this year it envisioned robust monitoring and rigorous air pollution controls for platers. However, pressure from the plating industry has your agency back-tracking on those measures. Without the monitoring, robust pollution controls, and total enclosure of all the industrial processes emitting these dangerous emissions we are no longer confident that this regulatory effort will protect our communities.

We urge you and your staff to consider the damage to public health which releases of hexavalent chromium are known to cause in the communities hosting these hexavalent chromium sources. We also urge you to think about the environment which the workers at these facilities are laboring in; these hexavalent chromium emissions are dangerous to all who work in this industry. We need the agency to insure that these facilities are made to completely capture these dangerous emissions, and to have the necessary monitoring sufficient to ensure compliance with the rules.

The European Union has just passed a regulation which will end the use of chromium for decorative purposes; we urge the South Coast AQMD to consider such as action as well. South Coast has taken similar actions before on dry cleaning facilities to ban chemicals which were damaging air quality and we urge you to consider to doing this for chromium as well.

If our experiences in the communities we represent teach us anything, we have learned that we cannot rely on anything but robust monitoring and a strong enforcement presence to ensure that these facilities are being operated properly and that our communities get the protections they deserve from their government. We urge you to work with us to create a rule which will ensure that families, teachers, workers, parishioners, and community residents are safe from hexavalent chromium in their communities.

Respectively,

33-8
(cont'd)

Action Now
Mitzi Shpak, Executive Director
Altadena, CA

American Legion Post 6
Pastor Anthony Quezada
1927 E. Plymouth St. Long Beach, CA

Apostolic Faith Center
Pastor Alfred Carrillo
1510 E. Rubidoux St. Wilmington, CA

California Communities Against Toxics
Jane Williams, Executive Director
Rosamond, CA

California Safe Schools
Robina Suwol, Executive Director
Los Angeles, CA

California Kids IAQ
Drew Wood, Executive Director
Wilmington, CA

Coalition for a Safe Environment
Jesse Marquez, Executive Director
Wilmington, CA

Comité Pro Uno
Felipe Aguirre, Coordinator
Maywood, CA

Community Dreams
Ricardo Pulido, Executive Director
Wilmington, CA

Del Amo Action Committee
Cynthia Medina, Assistant Director
Torrance, CA

33-8
(cont'd)

Earthworks Films, Inc.
Maria Florio, President
Sherman Oaks, CA

East Yard Communities for Environmental Justice
Mark Lopez, Executive Director
Commerce, CA

EMERGE
Magali Sanchez-Hall, MPH, Executive Director
Wilmington, CA

Exide Worker Community Committee
John Sermeno, Executive Director
Maywood, CA

Federación Veracruzana
Angel Morales, President
Huntington Park, CA

Los Angeles Environmental Justice Network
Cynthia Babich, Coordinator
Rosamond, CA

Mary Cordaro Inc.
Mary Cordaro Environmental and Healthy Building Consultant
Valley Village CA

Maywood Youth Soccer Association
Luis Orizaba, Director
Maywood, CA

Mothers of East Los Angeles
Teresa Marquez, President
Los Angeles, CA

Mujeres Pro Maywood
Elizabeth Matamoros, President
Maywood, CA

33-8
(cont'd)

NAACP San Pedro-Wilmington Branch # 1069
Joe R. Gatlin, Vice President
San Pedro, CA

Our Right To Know
Rhonda Jessum, Ph.D., Director
Los Angeles, CA

Padres Unidos de Maywood
Teresa Solorio, President
Maywood, CA

Paramount Community Coalition Against Toxins
Magdalena Guillen, Executive Director
Paramount, CA

Pacoima Beautiful
Yvette Lopez-Ledesma, Deputy Director
Pacoima, CA

Philippine Action Group for the Environment
Fe Koons, President
Carson, CA

Physicians for Social Responsibility – LA
Martha Dina Arguello, Director
Los Angeles, CA

Randall Enterprises, Inc.
David Randall, President
Sherman Oaks, CA

Resurrection Catholic Church
Monsignor John Moretta, Pastor
Los Angeles, CA

33-8
(cont'd)

San Pedro & Peninsula Homeowners Coalition
Dr. John G. Miller, MD, President
San Pedro, CA

Society for Positive Action
Shabaka Heru, President
Los Angeles, CA

St. Philomena Social Justice Ministry
Modesta Pulido, Chairperson
Carson, CA

Watts Labor Community Action Committee
Timothy Watkins, President/CEO
Los Angeles, CA

Wilmington Improvement Network
Anabell Romero Chavez, Board Member
Wilmington, CA

###

Respectfully,

Robina Suwol
Executive Director, California Safe Schools
Los Angeles, CA

Jane Williams, Executive Director
California Communities Against Toxics
Roasamond, CA

Felipe Aguirre
Comité Pro Uno, Coordinator
Maywood, CA

Magdalena Guillen, Executive Director
Paramount Community Coalition Against Toxins
Paramount, CA

Jesse Marquez, Executive Director
Coalition for a Safe Environment
Wilmington, CA

33-8
(cont'd)

Responses to Environmental Multi-Agency Comment Letter (34 commenters, Action Now, et. al.), submitted 9/5/18

- 33-1 Response: Ambient monitoring will be addressed in Proposed Rule 1480 and will include hexavalent chromium plating and anodizing facilities as well as other facilities with metal toxic air contaminants emissions. PAR 1469 includes additional source testing and parameter monitoring requirements which are not in existing Rule 1469 and are proposed to be added to ensure that pollution controls are being maintained in proper working condition and emission limits are not exceeded.
- 33-2 Response: PAR 1469 includes building enclosure requirements for Tier II and Tier III Hexavalent Chromium Tanks, which currently do not exist in Rule 1469. PAR 1469 has provisions to minimize openings and additional provisions for openings directly facing the nearest sensitive receptor, excluding schools, within 1,000 feet and directly facing the nearest school within 1,000 feet. The building enclosure requirements ensure that PAR 1469 continues to be health protective while allowing adequate access to buildings and taking into account building safety requirements.
- 33-3 Response: SCAQMD currently uses a definition of sensitive receptor which does not include parks. Based on staff conversations with OEHHA, this is consistent with their interpretation that although sensitive receptors could be found at a park, the time spent at a park is intermittent and is not a repeated long-term exposure, such as at homes. In Rule 1466, parks were identified as part of the definition of an adjacent athletic area, not as a sensitive receptor. This was done because some schools might use adjacent parks for physical education and therefore, earth moving activities at contaminated sites would be restricted when school related activities were occurring.
- 33-4 Response: The distances in PAR 1469 are different depending on the specific provision. When specifying distances in PAR 1469, staff either based those distances on the standard approach of health impacts which uses the emission source (i.e. edge of tank or centroid of emission point sources) or from the edge of the facility property for fugitive sources. PAR 1469 also maintains consistency with CARB's ATCM, which specific how distances should be calculated. Some distances were increased in order to be more health protective towards schools and sensitive receptors based on feedback from stakeholders. For example, subparagraph (e)(3)(A) requires that openings directly facing and within 1,000 feet of the nearest sensitive receptor, excluding schools, be closed while subparagraph (e)(3)(B) requires that that openings directly facing and within 1,000 feet of the nearest school be closed.
- 33-5 Response: Staff has replaced all the units in PAR 1469 to consistently use feet instead of meters and feet.

- 33-6 Response: During the rulemaking for PAR 1469, staff took out sections of the rule language and moved them to an appendix, placed confusing text within a table format, as well as provided additional clarity on provisions which were confusing for facilities to comply with and SCAQMD staff to enforce. SCAQMD Compliance and Enforcement staff inspect Rule 1469 facilities quarterly to ensure rule compliance.
- 33-7 Response: Implementation of PAR 1469 will require pollution controls on hexavalent chromium tanks that are currently not regulated, add requirements for building enclosures, parameter monitoring, and periodic source testing, and include limitations and restrictions for facilities located near sensitive receptors and schools. All of these requirements will reduce hexavalent chromium emissions from facilities subject to Rule 1469. PAR 1469 includes a compressed schedule to evaluate the emissions and exposure of non-PFOS chemical fume suppressants and determine with CARB if the non-PFOS chemical fume suppressants will be certified. If not certified, facilities will need to either implement an SCAQMD approved alternative, install air pollution controls, or phase out the use of hexavalent chromium.
- 33-8 Response: This comment includes a previously submitted comment letter (Comment Letter #3), which has been responded to.

From: Wesley Turnbow [mailto:wturnbow@emeplating.com]
Sent: Monday, October 8, 2018 3:28 PM
To: Philip Fine <pfine@aqmd.gov>; Susan Nakamura <SNakamura@aqmd.gov>
Cc: Jillian Wong <jwong1@aqmd.gov>; Daniel Garcia <dgarcia@aqmd.gov>; Mike Garibay <MGaribay@aqmd.gov>; 'Brian Ward' <brian@aaaplating.com>
Subject: RE: Governing Board Meeting and 1469 Economics

Hello Phil and Susan,

Let me start by saying that I only wished to express at the board meeting that we had not been contacted by staff. Nothing more. That is, obviously, no longer true. Given that things got moved forward from December and given our past communications, I was expecting a call in further regards to the economics. The economics seemed to be the board’s concern in September. Perhaps your team feels there is nothing left to do in regards to making the rule amendment more affordable, and much has already been done. So perhaps there is little that can be realistically done at this point to relieve costs without significantly affecting emissions. But here are a few more thoughts:

- (1) The Tier curve was created, in part, by running my dilute tank with the inductor pump on the entire time of testing. This should never happen, and in fact it blew out our \$800 motor. Inductors are only ran in short bursts prior to processing. The curve could, therefore, be restated (also include Brian Ward’s ideas) to exclude some fringe tanks, like some passivates and chemical films. Each source control costs a bundle (controls, testing, space which can and will lead to some city permitting). 34-1
- (2) A larger, and therefore, more realistic range for slot velocity testing is needed. Field enforcement on this could lead to some readings that will need to be contested because of the fluctuations in these kind of measurements. This will cost the shops resources and money. 34-2
- (3) I still feel there is a place for excluding small tanks and/or small emitter tanks even further by using mechanical covers instead of source controls. Huge costs here, particularly as a percentage of smaller shop sales. 34-3

Even as we head towards the end, I continue to hear real concerns, even fear. A few examples from this week – remember last week we explained to our members how to comply with the current version and encouraged them to start the process (I know that I failed to give you any time to assist in this training. Sorry for the lack of any real notice). One company stated that they could not figure out how to fit source controls on a process crane-line that uses all the building space; they also stated that they would need to utilize a parking space or two for the source controls and wasn’t sure that the city would allow them to give up any parking. Another company said that the city said it would not allow any structural changes unless they combined their multiple buildings into one on the county property roles; this would take at least six months and allow the city to then force changes to go across all the properties at a now significant higher cost for permitting any improvements. Yet another company stated that they would spend \$5,000 just to have an engineer look at the roof structure that they hoped would support the source controls. As you can image, removing just a few tanks that are on the edge of the rule parameters from enforcement will gain us worthwhile cost reductions. 34-4

Sincerely,

Wesley
 MFASC

Responses to Metal Finishing Association of Southern California (MFASC) Comment Email (10/8/18)

34-1 Response: SCAQMD has worked closely with MFASC and Environomics throughout the rule development process to minimize costs for implementation of PAR 1469. On October 17, 2018, SCAQMD staff met with Brian Ward, and Brian Leiker to discuss some addition revisions to PAR 1469 to further reduce potential costs, without compromising the overall objectives of controlling high emitting hexavalent chromium Tier III Tanks.

Please see Responses to Comment letter 31 for a detailed response to costs calculated by Environomics.

34-2 Response: SCAQMD worked closely with MFASC and Brian Ward at AAA Plating to develop the criteria for Tier II and Tier III Hexavalent Chromium Tanks in Appendix 10. PAR 1469 includes provisions for tanks that are on the fringe of being a Tier III Tank. The addition of Tier II Tanks (which are those tanks that are expected to be between 0.2 and 0.4 mg/hour) builds into the proposed amended rule those tanks that are on the fringe of being a Tier III Tank. In addition, under subparagraph (h)(4)(D), an owner or operator has the option to test a Tier III Tank to demonstrate that the tank emissions are less than 0.2 mg/hr. If the operator can demonstrate that the tank emissions are less than 0.2 mg/hr, then the operator is not required to vent the tank to an add-on pollution control device.

34-3 Response: PAR 1469 provides up to a 10 percent difference in measuring slot velocities from the most recent source test or screening test. The structure of PAR 1469 incorporates requirements that are placed in three categories: Acceptable Measurement, Repairable Measure, and Failing Measurement. Each of the measurement categories has different requirements. For example, an operator that has a Repairable Measurement is required to repair or replace, and re-measure within 3 calendar days of the measurement and a Failing Measurement requires immediate shut down of any tanks controlled by the air pollution control device that had a failing measurement until an acceptable measurement is measured. This approach is designed to encourage the operator to make the repairs, if necessary, quickly to minimize downtime. PAR 1469 requires that the operator measures slot velocities once every 180 days. Operators are encouraged to perform periodic maintenance on air pollution control devices, including slots to ensure collection efficiencies are well maintained. In addition, additional checks of the slot velocities between the required 180 days may help in early identification of issues with the collection efficiency of the add-on air pollution controls.

34-4 Response: A provision has been added to Proposed Amended Rule 1469 in Appendix 10. It allows small tanks with a surface area less than four square feet that

have a hexavalent chromium concentration less than 11,000 ppm with a temperature less than 210 degrees Fahrenheit to be exempt from the requirements of subparagraph (h)(4)(A) under certain circumstances. Staff calculated the emissions from these tanks and if the operator is operating the tank between 170 and 210 degrees Fahrenheit for two and one-half (2.5) hours per week or less, maximum potential hexavalent chromium emissions from these tanks would be less than the maximum potential emissions from tanks controlled to 0.2 mg/hour. Although no add-on pollution controls would be required for these small tanks, the operator must cover the tank pursuant to paragraph (h)(5) and will be required to maintain a data logger pursuant to paragraph (n)(3), to log the duration of time and temperature of tank to demonstrate the temperature of the tank is between 170 and 210 degrees Fahrenheit for no more than 2.5 hours per week.

PAR 1469 also allows many opportunities for smaller or lower-concentration tanks to be controlled using less expensive methods than the cost of an air pollution control (APC) system. For example, Tier II Tanks can be controlled using mechanical means (tank covers or Merlin Hoods) rather than APC systems. Where processes allows, tanks that can be run at temperatures or hexavalent chromium concentrations lower than the thresholds in Appendix 10 can apply for a permit condition to limit the tank to the appropriate parameter(s) and will be considered a Tier II Tank. In addition, passivation and chemical film tanks that are air sparged but not heated have the option of using a fluid eductor rather than air sparging and drop from Tier III to Tier I resulting in lower costs. Stripping or electropolishing tanks with hexavalent chromium tank concentrations less than 1,000 ppm are not regulated under PAR 1469, so an opportunity exists for facility operators to keep concentrations below 1,000 ppm rather than controlling them with an APC system. Finally, as suggested by MFASC, there are opportunities for process changes that will reduce hexavalent chromium tank concentrations and therefore change tank classification from Tier III to either Tier I or Tier II: for example, changing to a dilute sodium dichromate seal process.

34-5 Response: The Socioeconomic Impact Assessment (SIA) was prepared by SCAQMD staff with substantial input from the Working Group and the MFASC's economist. The cost estimates include all foreseeable cost estimates based in facility surveys, site visits, and direct communications with affected facilities. It is difficult for staff to respond to comments without having specifics regarding the facility and having the opportunity to speak with the operator and to visit the facility to better understand and assess the cost impacts that are stated in the comment. At the April 2018 Stationary Source Committee meeting, there were a number of operators that spoke on specific concerns about cost. Staff met with the operators and visited the facility to obtain specific information about their concerns and to provide solutions to their issues or clarifications about a specific provision. Staff is open to

meeting with operators to discuss provisions and possible clarifications, however, additional changes to the proposed amended rule would be difficult at this point.

Regarding the comment about City permitting and delays, PAR 1469 paragraph (v)(3) includes a one-year time extension for specific circumstances beyond the control of the operator such as CEQA, city or other agency permitting requirements, delivery delays in equipment, etc.



JOSE HUIZAR
COUNCILMEMBER, 14TH DISTRICT

October 5, 2018

Mr. Neil Fujiwara
Planning, Rule Development and Area Sources
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765
Via email at nfujiwara@aqmd.gov

RE: Proposed Amended Rule 1469

Dear Mr. Fujiwara:

On behalf of my constituents in Los Angeles City Council District 14 and in particular Boyle Heights, I write to request that the South Coast Air Quality Management District (SCAQMD) strengthen its efforts to reduce hexavalent chromium emissions. Boyle Heights is among the communities that bear a disproportionate burden of the toxic and carcinogenic impact of hexavalent chromium. I urge a more expansive and farther-reaching approach to governing this pernicious pollutant and to transitioning the industry to cleaner alternatives.

35-1

I advocate a return to SCAQMD's earlier proposals to contain chromium facilities in permanent total enclosures (PTE) with appropriate filtration. The current draft of Proposed Amended Rule 1469 (PAR 1469) permits the building envelope of a chromium facility to contain openings, and those openings may remain open for up to two hours per day. The proposed regulation contemplates types of openings that could dramatically reduce or eliminate air flow but does not require their use. The more comprehensive approach of PTE better safeguards the community from the dissemination of hexavalent chromium.

35-2

Plans for enforcement should include greater monitoring and oversight of chromium facilities. While SCAQMD has suggested it may monitor toxic metal

35-3

200 NORTH SPRING STREET, ROOM 465 • LOS ANGELES, CALIFORNIA 90012
PHONE: (213) 473-7014 • FAX: (213) 847-0680
EMAIL: COUNCILMEMBER.HUIZAR@LACITY.ORG

emissions as part of proposed revisions to Rule 1480, the community lacks assurance that it will adequately address the specific concerns of chromium facilities. Within PAR 1469 itself, the monitoring provisions are insufficient. Chromium facilities that fail multiple source tests would be required to install a PTE system. However, source testing would be required only every 60 or 84 months, and there is no frequency requirement for ongoing emissions tests as an alternative to source testing. As a result, the community is unacceptably left vulnerable for five to seven years between source tests.

35-3
(cont'd)

Finally, and perhaps most importantly, SCAQMD, through PAR 1469, related regulations and other direct incentives, should expedite the adoption of less toxic alternatives to hexavalent chromium. SCAQMD should establish a funded program to help small businesses in this industry transition away from hexavalent chromium and the toxic fume suppressants used to control it. In the absence of a funding stream, at a minimum, education about safer methods must form part of the training and certification requirements outlined in PAR 1469. In this way, SCAQMD could directly signal to industry the need for an eventual elimination of hexavalent chromium emissions.

35-4

I am deeply concerned about the number of chromium facilities that put residents of my district at risk and that are perilously close to area schools. The situation demands a more aggressive response from SCAQMD to combat the toxic risks surrounding the use of hexavalent chromium and to fund a transition to cleaner alternatives.

35-5

My office and I stand ready to assist in any way that we can. Please do not hesitate to contact my Policy Director Martin Schlageter at 213-473-7014 or martin.schlageter@lacity.org if you have any questions. Thank you.

Sincerely,

José Huizar
Councilmember, District 14
City of Los Angeles

200 NORTH SPRING STREET, ROOM 465 • LOS ANGELES, CALIFORNIA 90012
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Responses to City of Los Angeles, Councilmember Jose Huizar Comment Letter (10/5/18)

35-1 Response: PAR 1469 reduces emissions of hexavalent chromium and offers protection to the communities surrounding the affected facilities. PAR 1469 incorporates the requirements of the U.S. EPA chrome NESHAP (*Chromium Electroplating: National Emission Standards for Hazardous Air Pollutants*), as well as the California Air Resources Board (CARB) Airborne Toxic Control Measure (ATCM) for chrome plating and anodizing (*Airborne Toxic Control Measure for Chromium Plating and Chromic Acid Anodizing Facilities*). In addition, PAR 1469 requires control of additional process tanks not controlled by the NESHAP or CARB ATCM.

Ambient monitoring and emissions testing conducted by SCAQMD staff revealed significant sources of hexavalent chromium emissions from certain non-plating tanks that were sparged (air-agitated), electrolytic, or operated at elevated temperatures. Control of these tanks, considered Tier II and Tier III Tanks, is required under PAR 1469.

In addition to addressing emissions from individual tanks at plating and anodizing facilities, PAR 1469 will reduce fugitive emissions of hexavalent chromium through best management practices, requiring a building enclosure for operations, limiting enclosure openings and specifying operational factors to limit cross drafts through a building enclosure. A permanent total enclosure (PTE) that is vented to air pollution control equipment meeting a high level of control, is required for certain situations.

PAR 1469 incorporates provisions to reduce fugitive hexavalent chromium emissions by requiring a building enclosure, including: closing roof openings within 15 feet of a Tier II or Tier III Tank; closing enclosure openings located on opposite sides of a building enclosure; and closing enclosure openings on sides of a building enclosure that directly face the nearest non-school sensitive receptor within 1,000 feet and directly face the nearest school within 1,000 feet.

35-2 Response: Early discussions regarding ambient monitoring and PTEs under negative pressure vented to HEPA filters were discussed at Working Group Meetings. Staff is working on a separate rule for ambient monitoring that will include a variety of industries and hexavalent chromium and other metal toxic air contaminants. Staff contemplated including ambient monitoring in PAR 1469, but decided that the focus should be installation of add-on pollution controls and building enclosures. Much of the discussion on PAR 1469 has been on the implementation cost, particularly the impact to small businesses. Both ambient monitoring and PTEs with negative air vented to pollution controls are expensive provisions. Staff believes that PAR 1469 is a cost conscious proposal that provides additional

reductions in hexavalent chromium emissions with additional public health protection for communities affected by chrome facilities. PAR 1469 does include a conditional provision for installation of a PTE for facilities that either conduct multiple non-passing source tests or fail to shut down a tank after failing a smoke or slot velocity test. See subdivision (t) of PAR 1469 for more information regarding triggers for installation of a PTE.

The concept for the requirement for a 3.5% threshold for openings as a percentage of building envelope is based on EPA Method 204. PAR 1469 requires the lower 3.5% threshold, relative to the 5% allowance for a PTE under EPA Method 204, since building enclosures are not required to be kept under negative air pressure and vented to APC systems. PAR 1469 requires housekeeping and best management practices such as limiting cross-drafts and prohibiting openings directly facing the nearest sensitive receptor, excluding schools, within 1,000 feet and directly facing the nearest school within 1,000 feet to minimize exposure to sensitive populations in nearby communities.

35-3 Response: SCAQMD staff has initiated rule development for Proposed Rule (PR) 1480 – Air Toxic Metals Monitoring which will provide a comprehensive approach to monitoring air toxics metals at various communities near a variety of industries. Therefore, it is more appropriate to consider monitoring within the context of PR 1480 instead of within PAR 1469.

Provisions to measure the collection efficiency complement existing provisions to conduct a smoke test to ensure that air flow is not being impacted by cross-drafts, and monitor the pressure across the filter media for early identification of a breach or clog in the filter media of the air pollution control device. In addition, PAR 1469 places greater emphasis on these parameter monitoring provisions by using more than one non-passing source test within a 48-month period and failure to shut down a tank after either a failed smoke test or collection efficiency test as the triggers for installation of a permanent total enclosure.

The parameter monitoring requirements described above will ensure that emissions of hexavalent chromium are well controlled between required source tests for new and existing air pollution control systems. Therefore, the communities surrounding chromium plating and chromic acid anodizing facilities are not left vulnerable between required source tests, as the comment suggests.

35-4 Response: SCAQMD has a comprehensive suite of rules aimed at controlling emissions of hexavalent chromium and encouraging less toxic alternatives. In addition to PAR 1469, related regulations include Rule 1430 - *Control of Emissions from Metal Grinding Operations at Metal Forging Facilities*; Rule 1404 - *Hexavalent Chromium Emissions from Cooling Towers*; Rule

1469.1 - *Spraying Operations Using Coatings Containing Chromium*; and Rule 1426 - *Emissions from Metal Finishing Operations*. In addition to existing rules for the source categories described above, SCAQMD has also proposed rules to address hexavalent chromium emissions from metal melting operations (PR 1407.1 - *Control of Emissions of Toxic Air Contaminants from Chromium Alloy Melting Operations*); from heat treating (PR 1435 - *Control of Emissions from Metal Heat Treating Processes*) and from laser cutting of metals (PR 1445 - *Control of Toxic Emissions from Laser Arc Cutting*).

SCAQMD is committed to phase out hexavalent chromium and to help fund controls for the smallest facilities that are currently using fume suppressants to control emissions of hexavalent chromium. These measures include:

1. Initiate a pilot study to identify non-toxic alternatives to hexavalent chromium plating and anodizing operations and provide a report to the Stationary Source Committee within two years on possible non-toxic alternatives and rule changes;
2. Participate in CARB's upcoming rulemaking to amend the ATCM for chromium plating and anodizing and to support a statewide effort to phase-out the use of hexavalent chromium in chromium plating and chromic acid anodizing operations; and
3. If non-PFOS chemical fume suppressants are not re-certified, to work with CARB to seek funding to assist facilities in installation of pollution controls or use of non-toxic alternatives, where feasible.

PAR 1469 proposes to revisit the certification of the currently certified wetting agent chemical fume suppressants. Under the current proposal, beginning July 1, 2021, facilities may only add to a Tier III Tank a chemical fume suppressant that is certified based on a revised process conducted by SCAQMD and CARB. The date was chosen to allow sufficient time for facilities to implement alternatives, manufacturers to potentially reformulate chemical fume suppressants, and SCAQMD staff to certify the chemical fume suppressant(s).

SCAQMD remains committed to addressing emissions of hexavalent chromium from the sources and facilities identified above, to the extent possible under our purview. In addition, SCAQMD is committed to taking the described measures if non-PFOS fume suppressants are not certified.

- 35-5 Response: SCAQMD is also concerned with the proximity of residents and schools to plating and anodizing facilities. To that end, PAR 1469 includes limitations and restrictions for facilities located near sensitive receptors (including residences) and schools. Examples include:
5. Close any building enclosure opening that directly faces and opens towards the nearest:

- a. Sensitive receptor, excluding schools, located within 1,000 feet; and
 - b. School located within 1,000 feet.
6. Ensure a new facility is not located within 1,000 feet from the boundary of a sensitive receptor, a school under construction, or any area that is zoned for residential or mixed use;
 7. Expedited timeline to construct a permanent total enclosure (if triggered), if the property line of the electroplating or anodizing facility is within 500 feet of the property line of any sensitive receptor; and
 8. Prior to approval of alternative compliance method for emissions control, demonstrate that the facility is at least 75 feet from a sensitive receptor.

PAR 1469 represents the most stringent control of emissions of hexavalent chromium from chromium plating and chromic acid anodizing facilities in the nation, including control of emissions directly from plating, anodizing and related tanks (i.e. point-source controls) as well as control of fugitive emissions that originate from within buildings, through limitations on building openings. Regarding the comment on phase-out of hexavalent chromium, please refer to the measures described in Response to Comment 35-4.

Subject: FW: Cost of PAR 1469 compliance
Attachments: Cost_of_PAR1469_Compliance.xls

-----Original Message-----

From: Brian Ward [mailto:brian@aaaplating.com]

Sent: Wednesday, October 10, 2018 2:00 PM

To: Neil Fujiwara <nfujiwara@aqmd.gov>

Cc: Susan Nakamura <SNakamura@aqmd.gov>; Marie Patrick (Bur) <mwpatrick@aqmd.gov>; Dr. Clark E Parker <clarkeparker@aqmd.gov>; bbenoit@cityofwildomar.org; Jenny Chavez (Bus) <jenny.chavez@lacity.org>; Michael Cacciotti (GBM) <macacciotti@yahoo.com>; Joseph Lyou (GBM) <joe@ccair.org>; Larry McCallon (GBM) <lmccallon@cityofhighland.org>; Judith Mitchell <jmitchell@aqmd.gov>; Shawn Nelson <shawn.nelson@ocgov.com>; V Manuel Perez (GBM) <vmanuelperez@rivco.org>; Dwight Robinson (GBM) <d Robinson@lakeforestca.gov>; Janice Rutherford (GBM) <Janice.Rutherford@bos.sbcounty.gov>; Teresa Villegas (GBA) (Sol) <tvillegas@bos.lacounty.gov>
Subject: Cost of PAR 1469 compliance

For your consideration.

There are conflicting assessments regarding the costs of compliance with SCAQMD rule 1469 as proposed. Attached is a simple breakdown of the initial and ongoing expenses. These expenses are based on equipment quotes, where available. These expenses are very similar for all sized companies.

-Brian Ward
AAA Plating & Inspection, Inc.
(310)637-1066 ext. 224

COSTS ASSOCIATED WITH PAR 1469														
ONE TIME COST FOR ONE HEPA SYSTEM												%	%	
												FOR ONE	FOR	
												1	2	
INSTALL ONE	DUCTING	REROUTING	STRIP	HI SPEED	PERMIT	SOURCE TEST				COMPANY	TOTAL	ANNUAL	TANK	TANKS
HEPA UNIT		ELECTRICAL	CURTAINS	ROLL UP	FEE				SIZE	ONE TIME	SALES			
FOR ONE TANK				DOOR						COST				
\$80,000	\$10,000	\$12,000	\$6,000	\$30,000	\$5,000	\$15,000			LARGE	\$158,000	\$16,000,000		0.988%	1.975%
NOTE: A SMALLER SIZED COMPANY HAS LITTLE OR NO EFFECT ON THESE COSTS														
									MEDIUM	\$158,000	\$8,000,000		1.975%	3.950%
									SMALL	\$158,000	\$2,000,000		7.900%	15.800%
ANNUAL COST FOR ONE HEPA SYSTEM														
ELECTRICITY	FILTERS	TESTING	PERMIT FE	HOUSE-KEEPING	FILTER DISPOSA	SOURCE TEST	SUBTOTAL	INFLATION		ANNUAL			FOR ONE	FOR
2 SHIFTS						\$15,000		2.70%		TOTAL			1	2
						OVER 5 YRS		PER YR		COST			TANK	TANKS
\$12,600	\$1,800	\$1,800	\$1,400	\$10,000	\$2,000	\$3,000	\$32,600	\$880	LARGE	\$33,480	\$16,000,000		0.21%	0.419%
NOTE: A SMALLER SIZED COMPANY HAS LITTLE OR NO EFFECT ON THESE COSTS														
									MEDIUM	\$33,480	\$8,000,000		0.42%	0.837%
									SMALL	\$33,480	\$2,000,000		1.67%	3.348%
OPEN QUESTIONS:														
HOW MANY NANO GRAMS OF Cr6 WILL BE REDUCED BY THE ABOVE COSTS														
A REDUCTION OF ONE NANOGRAM of Cr6 PER CU. METER COMES TO							\$191,480	PER TANK IN YEAR ONE						
							\$382,960	FOR 2 TANKS IN YEAR ONE						
If some simple things, such as a tank cover, closing a door, hanging strip curtains, etc. can accomplish the bulk of any Cr6 reduction, it may make sense to do these simple, low cost things before spending \$200,000 to \$400,000.														

Responses to AAA Plating and Inspection, Inc. Comment Email, submitted 10/10/2018

36-1 Response: Since the spreadsheet attached to the comment represents anticipated costs for the commenter's facility, it will not be representative of the range of costs for the entire universe of PAR 1469 facilities. As such, the cost profiles extrapolated from the commenter's anticipated costs for small, medium and large facilities are not expected to be representative either.

Examples of the costs that cannot be extrapolated to other facilities within the PAR 1469 universe include:

1. The cost of high speed roll-up doors is not expected to be the main compliance choice for most facilities. If an operator has a high use door, provided it is not directly facing a school or sensitive receptor, the operator may decide to keep this door open as part of the allowable 3.5% building envelope openings. In addition, there are other lower cost options such as plastic strip curtains.
2. The cost of housekeeping is not expected to increase as much as indicated in the estimate provided.
3. Inflation is not included in the Final SIA.

The analysis supplied in the comment also suggests that compliance costs do not vary by facility size. In addition, the comment used annual sales to define facility size, without providing any justification for the values chosen. This differs from the approach used in the Final SIA, where compliance costs are a function of the anticipated airflow requirements, and facility size is defined by permitted ampere-hours, rather than sales. Annual sales may not provide as meaningful correlation to facility size as permitted ampere-hours, since a facility may have significant sales from other types of operations than plating or anodizing. As an example, the comment selected \$8,000,000 to define a medium size facility, while the anodizing-medium category under the Final SIA includes facilities with annual sales ranging from \$1.1 million up to \$168 million.

SCAQMD staff took a more refined approach in the Final SIA. Thirteen categories of facilities (e.g. anodizing – small facility) were developed and used to estimate the average number and size of air pollution control (APC) systems necessary for a particular category. Cost estimates calculated in the Final SIA are based on a survey sent to all PAR 1469 facilities with a response rate of over 50%, site visits to more than 50 facilities, 13 Working Group meetings where potential rule requirements were discussed in detail, and numerous discussions with representatives from the MFASC that focused specifically on minimizing cost impacts to chrome plating and chromic acid anodizing facilities. The Final SIA represents SCAQMD staff's best estimate at costs that are a direct result of compliance with PAR 1469, with the exception of the site-specific costs that cannot be predicted as noted in the Final SIA.

SCAQMD staff agrees with the note at the bottom of the spreadsheet. If there are low-cost measures to comply with PAR 1469, facility operators will preferentially choose those measures over installation of an air pollution control system. Please see Response to Comment 35-4 for the options available to facility operators to voluntarily change the tank parameters in order to reduce emissions of hexavalent chromium and therefore move Tier III Tanks to either Tier I or Tier II. In addition, please see the response to comment letter 31 for a discussion of cost assumptions made in the Final SIA.

From: Ostapuk, Kathryn G CIV CNRSW, N40 [<mailto:kathryn.ostapuk@navy.mil>]
Sent: Tuesday, October 23, 2018 11:42 AM
To: COB <COB@aqmd.gov>
Cc: Huber, Michael CIV CNRSW, N40 Env <michael.huber@navy.mil>; Dumauual, Alfred C CIV NAVFAC SW, EV <alfred.dumauual@navy.mil>
Subject: Navy comments on Proposed Amended Rule 1469

Ms. Garzaro,

On behalf of the Navy, please accept the following comments on the Proposed Amended Rule 1469 (Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations). Since the military doesn't currently have any affected operations in South Coast, we have not done an in depth analysis on the full rulemaking; however, in cursory review, we have identified some concerns with subpart m(3)(b), which states, "The owner or operator of a facility shall measure the foam blanket thickness each operating day."

- | | | |
|--|---|------|
| <ol style="list-style-type: none"> 1. The thickness of the foam is not uniform, so measuring foam thickness at one area of the tank may differ greatly from another and therefore is a source of large variability in readings. | } | 37-1 |
| <ol style="list-style-type: none"> 2. There is a concern for the safety of the operator, as there is considerable risk for personal injury by hovering and reaching over a chrome plating tank. Based on Navy experience, foam blankets only form during the plating process. This poses considerable risk for personal injury for operators having to reach over an electrically charged chrome plating tank to take measurements. | } | 37-2 |
| <ol style="list-style-type: none"> 3. Due to the non-uniform thickness of the foam layer, there is no clear reason why this needs to be done. The weekly surface tension measurement should be sufficient to demonstrate the effectiveness of the fume suppressant which according to our records are very consistent on a week-to-week basis. | } | 37-3 |

Our point of contact for this is Michael Huber who can be reached at (619) 532-2303. Thank you for your consideration.

VR, Kat

Kathryn Ostapuk JD
DOD Legislative & Regulatory Affairs
Navy Region Southwest/DOD REC
619-532-2285

Responses to the United States Department of Defense Comment Email, submitted 10/23/2018

37-1 Response: The federal NESHAP for Hard and Decorative Electroplating and Chromium Electroplating and Chromium Anodizing Tanks (40 CFR Part 63, Subpart N) requires facilities to measure foam blanket thickness to demonstrate continuous compliance. The requirement to measure foam blanket thickness implements the federal NESHAP and is an existing requirement in Rule 1469. PAR 1469 cannot require a less stringent provision than the federal NESHAP or state ATCM.

37-2 Response: Please see Response to Comment 37-1.

37-3 Response: Please see Response to Comment 37-1.

ATTACHMENT H

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final Socioeconomic Impact Assessment for Proposed Amended Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations

November 2018

Deputy Executive Officer

Planning, Rule Development, and Area Sources
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Jillian Wong, Ph.D., Planning and Rules Manager

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
GOVERNING BOARD**

Chairman: DR. WILLIAM A. BURKE.
Speaker of the Assembly Appointee

Vice Chairman: DR. CLARK E. PARKER, SR.
Senate Rules Committee Appointee

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Cities of Riverside County

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Cities of San Bernardino County

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Cities of Los Angeles County/Western Region

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County of Orange

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Supervisor, Fourth District
County of Riverside

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Supervisor, First District
County of Los Angeles

EXECUTIVE OFFICER:

WAYNE NASTRI

EXECUTIVE SUMMARY

A socioeconomic analysis was conducted to assess the potential impacts of Proposed Amended Rule (PAR) 1469 on the four-county region of Los Angeles, Orange, Riverside and San Bernardino. A summary of the analysis and findings is presented below.

<p>Elements of Proposed Amendments</p>	<p>The purpose of PAR 1469 is to protect public health by minimizing public exposure to hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations. PAR 1469 would require: 1) installation of air pollution control equipment on hexavalent chromium containing tanks that emit or have the potential to emit hexavalent chromium that are currently not regulated; 2) periodic source testing and parametric monitoring of air pollution control equipment; 3) building enclosures with openings that do not exceed three and a half percent of the building envelope; 4) conditional requirements for installation of Permanent Total Enclosures (PTE); 5) implementation of Best Management Practices (BMP) for all hexavalent chromium containing operations; 6) prohibiting the use of chemical fume suppressants that contain PFOS; and 7) re-certification of non-PFOS chemical fume suppressants due to potential toxicity concerns via an enhanced certification process conducted by SCAQMD and the California Air Resources Board (CARB).</p>
<p>Affected Facilities and Industries</p>	<p>SCAQMD staff has identified 115 facilities that either conduct decorative or hard chromium electroplating or chromic acid anodizing operations within SCAQMD’s jurisdiction. 80 of the 115 affected facilities are located in Los Angeles County, 30 in Orange County, one in Riverside, and the remaining four in San Bernardino County. The majority of the potentially affected industries are in the manufacturing sector (NAICS 332), consistent with electroplating, plating, polishing, anodizing, and coloring facilities. This universe of facilities and tanks was determined via SCAQMD’s recent surveys and equipment permitting database.</p> <p>Of the 115 affected facilities:</p> <ul style="list-style-type: none"> • 47 facilities conduct decorative hexavalent chromium plating, • 31 facilities conduct hard hexavalent chromium plating, • 30 facilities conduct chromic acid anodizing, • four facilities conduct trivalent chromium plating only, • and three facilities conduct both chromic acid anodizing and hard hexavalent chromium plating. <p>Data on employment and revenue were available for 104 of the 115 affected facilities. Based on this data, the total annual revenue for affected facilities is nearly \$1 billion dollars and the total number of employees directly employed by affected facilities was approximately 5,300 in 2017.</p>

<p>Assumptions of Analysis</p>	<p>Many of the costs estimated in this analysis are dependent on site-specific factors and on business decisions made by facilities subject to PAR 1469. Each facility will decide how to best to comply with the rule requirements and each facility will likely use a lower-cost option, if available. For this reason, two cost scenarios are provided in this analysis. A high cost scenario, which represents the highest expected cost of compliance with the requirements of PAR 1469, and a low cost scenario, which represents the costs associated with a more likely scenario. It should be noted that both the high and low cost scenarios include conservative assumptions for installation of air pollution controls, particularly for stripping and electro polishing tanks where it is possible that these tanks will meet the requirements of a Tier I or Tier II Tank, where no add-on pollution controls will be required. Based on the type of operations performed by the each facility, 13 categories were established based on the types of facilities (hard chromium plating, decorative chromium plating, chromic acid anodizing, multiple plating or anodizing, and trivalent) and size of the facility (small, medium, large, and other, where ampere-hours could not be confirmed).</p> <p>High Cost Scenario</p> <p>The main requirements of PAR 1469 that have major cost impacts include the installation, operation, and maintenance of Air Pollution Control (APC) systems using High Efficiency Particulate Arrestor (HEPA) filters (point-source controls on existing and new tanks), initial source tests and screening tests, implementation of BMPs, construction of PTEs, and building modifications. Under the high cost scenario, it is assumed that a total of 103 Tier III Tanks located at 55 facilities will require APC systems, with one APC system assumed for each tank.</p> <p>PAR 1469 includes a provision that will require facilities to install air pollution controls, chemical fume suppressants cannot be certified. As a result, in addition to the new APC systems for Tier III Tanks, the high cost scenario also includes cost estimates for adding APC systems for existing tanks where the only control technique that is currently used are chemical fume suppressants. Beyond the 103 Tier III Tank facilities identified, there are 27 facilities with chromium electroplating and/or anodizing tanks that use chemical fume suppressants as their only form of control.</p> <p>Out of the 27 facilities using chemical fume suppressant controlled tanks, 12 facilities have both electroplating/anodizing tanks and Tier III Tanks. The remaining 15 facilities only have electroplating/anodizing tanks and represent some of the smallest facilities (based on revenue) in the PAR 1469 universe. Under the high cost scenario, it is assumed that a total of 130 (103+27) Tier III Tanks located at 70 facilities will require APC systems for each tank (130 total). This includes 55 facilities with existing Tier III Tanks plus 15 facilities with chemical fume suppressant controlled</p>
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	<p>tanks that would require APC systems if no certified chemical fume suppressants are available by 2021.</p> <p>Low Cost Scenario Under the low cost scenario, it is assumed that a total of 103 tanks located at 55 facilities will require APC systems. Under this scenario it is assumed that a certified chemical fume suppressant will be available by July 1, 2021, and that the 27 facilities currently using chemical fume suppressants as their only form of control will be able to continue using a certified chemical fume suppressant rather than install APC systems. In addition, the low cost scenario assumes that where possible, facilities with higher ventilation needs would be able to vent more than one Tier III Tank into a single APC system and as a result, only 64 APC systems would be installed at 55 facilities. Below is a table summarizing the assumptions used in the high and low cost scenarios.</p> <table border="1"> <thead> <tr> <th colspan="2">High Cost Scenario</th> <th colspan="2">Low Cost Scenario</th> </tr> </thead> <tbody> <tr> <td># of Facilities</td> <td>70</td> <td># of Facilities</td> <td>55</td> </tr> <tr> <td># of Tier III Tanks</td> <td>130</td> <td># of Tier III Tanks</td> <td>103</td> </tr> <tr> <td># of APCs</td> <td>130</td> <td># of APCs</td> <td>64</td> </tr> </tbody> </table> <p>To estimate capital costs of APC systems, several quotes obtained from vendors indicate that unit costs (\$/cfm) decrease as APC systems increase in size. Unit costs used in this analysis are shown below:</p> <table border="1"> <thead> <tr> <th>System Size (cfm)</th> <th>Unit Cost</th> </tr> </thead> <tbody> <tr> <td>Up to 5,000</td> <td>\$23/cfm</td> </tr> <tr> <td>5,001 to 10,000</td> <td>\$17/cfm</td> </tr> <tr> <td>10,001 to 20,000</td> <td>\$14/cfm</td> </tr> </tbody> </table> <p>It is anticipated that facilities would combine tanks to utilize a larger APC system instead of installing multiple APC systems, resulting in a lower overall cost.</p>	High Cost Scenario		Low Cost Scenario		# of Facilities	70	# of Facilities	55	# of Tier III Tanks	130	# of Tier III Tanks	103	# of APCs	130	# of APCs	64	System Size (cfm)	Unit Cost	Up to 5,000	\$23/cfm	5,001 to 10,000	\$17/cfm	10,001 to 20,000	\$14/cfm
High Cost Scenario		Low Cost Scenario																							
# of Facilities	70	# of Facilities	55																						
# of Tier III Tanks	130	# of Tier III Tanks	103																						
# of APCs	130	# of APCs	64																						
System Size (cfm)	Unit Cost																								
Up to 5,000	\$23/cfm																								
5,001 to 10,000	\$17/cfm																								
10,001 to 20,000	\$14/cfm																								
<p>Compliance Costs</p>	<p>The total average (2019 to 2035) annual compliance cost for PAR 1469 affected facilities was estimated to range from \$2.64 million (low cost scenario) to \$4.30 million (high cost scenario) per year, depending on the real interest rate assumed (1%-4%).</p> <p>The majority of the PAR 1469 compliance costs are capital, installation, and operating and maintenance (O&M) costs of APC systems. The annualized costs are estimated at \$1.97 million (75%) for the low cost scenario, and \$3.33 million (77%) for high cost scenario, respectively. Initial source tests and recurring screening tests are the next largest cost categories with about \$0.42 million (16%) for the low cost scenario and \$0.61 million (14%) for the high cost scenario, annually.</p>																								

Annualized Compliance Costs (Capital Cost, Installation, O&M), All Facilities Combined		
	High Cost Scenario	Low Cost Scenario
New APC for Existing Tier III Tank	\$738,000	\$463,000
New APC for Existing Electrolytic Tank Controlled by CFS	\$209,000	\$0
Operating & Maintenance	\$2,010,000	\$1,168,000
Electrical Costs of Operating APC	\$368,000	\$338,000
Annualized Total	\$3,325,000	\$1,969,000

The total cost of installing the APC systems are estimated at \$6.5 to \$11.3 million, for low cost and high cost scenarios, respectively. The total average annual cost of installing the APCs are estimated at \$0.46 to \$0.97 million over 15 years, depending on the real interest rate assumed (1% for the low cost scenario) and (4% for the high cost scenario), respectively.

The current cost of a conventional source test consisting of three individual collection runs is estimated at \$20,000. An emissions screening test, which is required every five to seven years consists of a single collection run and is estimated to cost \$14,000.

It was assumed that only two facilities may trigger the requirement for installation of a PTE. The estimated total cost of the two PTEs is \$184,000 for the low cost scenario, and \$340,000 for the high cost scenario. The low cost scenario assumes six air changes per hour, while the high cost scenario assumes 15 air changes per hour. Costs vary by ventilation blower specifications and electrical operating costs.

The majority of the annual compliance costs (\$1.55 million or 58% for the low cost scenario, and \$2.49 million or 58% for the high cost scenario) is estimated to be incurred by affected facilities that belong to categories of Anodizing (Small), Anodizing (Medium), and Anodizing (Other). The majority of the annual compliance costs (\$2.22 million or 84% for low cost scenario and \$3.63 million or 84% for the high cost scenario) is estimated to be incurred by the sector of fabricated metal manufacturing where most of the electroplating, plating, polishing, anodizing, and coloring facilities belong.

<p>Facility-Based Impact Analysis</p>	<p>A facility-based impact analysis was conducted at the request of stakeholders and is consistent with recommendations for assessment of small business impacts in a 2017 report prepared for SCAQMD by Industrial Economics, Incorporated, “Models, Methods, and Data for Estimating Small Scale and Small Business Impacts.” This analysis estimates the annual cost at a facility level scale and includes sales data for individual facilities. The average cost estimates for affected facilities range from \$22,000 to \$36,000. Revenue data indicates an average annual revenue for all affected facilities of \$9.3 million, with a range of \$40,000 to \$168 million. The analysis indicates an average cost impact of 1.8% to 3.3% of revenue for all affected facilities. The facility category which bears the greatest impact is small decorative plating facilities, or Decorative (Small), which has a range of average impacts of 3.4% to 7.4% of revenue. Many of these facilities would be impacted by PAR 1469 if chemical fume suppressants are not certified and are required to install add-on pollution controls.</p> <p>Staff has added a provision that the Executive Officer, in consultation with CARB, may approve an alternative to a wetting agent chemical fume suppressant that is as equally effective as a certified chemical fume suppressant pursuant to paragraph (1)(2) of PAR 1469. This approach will allow facilities to use an alternative to a wetting agent chemical fume suppressant if emissions testing conducted by SCAQMD demonstrates that the alternative is as equally effective as a certified wetting agent chemical fume suppressant. The alternative to a wetting agent chemical fume suppressant would be available to only the smallest plating facilities that are currently allowed to use chemical fume suppressants. This approach will provide a cost savings given that SCAQMD staff will conduct the necessary emissions testing. No further emissions testing would be required if the operator complies with the conditions of the approval of the alternative.</p> <p>Recognizing the potential financial impact to smaller facilities, the adoption resolution for PAR 1469 will include a commitment that staff will seek funding to help offset the cost of add-on pollution controls if non-PFOS chemical fume suppressants cannot be certified.</p>
<p>Jobs and Other Socioeconomic Impacts</p>	<p>PAR 1469 is expected to result in approximately 37 to 63 to jobs forgone annually, on average, between 2019 and 2035 using the low and high cost scenarios are assumed, respectively. The projected jobs loss impacts represent about 0.001% of the total employment in the four-county region. The manufacturing sector (NAICS 31-33), which is projected to bear all estimated total compliance costs would have about 2 to 12 jobs forgone on average annually. The remainder of the projected reduction in employment would be across all major sectors of the economy from secondary and induced impacts of PAR 1469.</p>

Competitiveness	It is projected that the manufacturing sector, where most of the affected facilities belong, would experience a rise in its relative cost of services by 0.0013% and 0.0022% and a rise in its delivered price by 0.0008% and 0.0012% by 2025 for the low and high cost scenarios, respectively. While these changes are relatively small, it should be noted that the delivered price change is a change in the index of all prices in the manufacturing sector. Delivered prices that a facility may charge for specific goods or services may increase at a greater rate than this, allowing incurred costs to be passed onto downstream industries and end-users.
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INTRODUCTION

The proposed amendments to Rule 1469 are designed to reduce emissions from point sources that were previously not known to be significant sources of hexavalent chromium and establish additional provisions to minimize the release of fugitive hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations.

In an effort to minimize the public's exposure to hexavalent chromium, PAR 1469 would require: 1) air pollution control equipment to be installed on hexavalent chromium-containing tanks that emit or have the potential to emit hexavalent chromium; 2) conducting periodic source testing and parametric monitoring of air pollution control equipment; 3) building enclosures to meet a limit of 3.5% openings of the building envelope, which includes the area of the walls of the enclosure, the floor and the horizontal projection of the roof; 4) triggered requirements for PTE; 5) implementing BMPs for all hexavalent chromium containing operations; 6) prohibiting the use of chemical fume suppressants that contain PFOS; and 7) certification of non-PFOS chemical fume suppressants via an enhanced certification process conducted by SCAQMD and CARB due to potential toxicity concerns.

LEGISLATIVE MANDATES

The socioeconomic assessments at SCAQMD have evolved over time to reflect the benefits and costs of regulations. The legal mandates directly related to the assessment of the PAR 1469 include SCAQMD Governing Board resolutions and sections of the California Health & Safety Code (H&SC).

SCAQMD Governing Board Resolutions

On March 17, 1989, the SCAQMD Governing Board adopted a resolution that calls for an economic analysis of regulatory impacts that includes the following elements:

- Affected industries;
- Range of probable costs;
- Cost effectiveness of control alternatives; and
- Public health benefits

Health & Safety Code Requirements

The state legislature adopted legislation that reinforces and expands on the Governing Board resolutions for socioeconomic impact assessments. H&SC Section 40440.8(a) requires that a socioeconomic analysis be prepared for any proposed rule or rule amendment that "will significantly affect air quality or emissions limitations." Per H&SC Section 40440.8(b), the scope of the analysis should include:

- Type of affected industries;
- Impact on employment and the economy of the four-county region;

- Range of probable costs, including those to industries;
- Necessity of adopting, amending or repealing the rule in order to attain state and federal ambient air quality standards; and
- Availability and cost effectiveness of alternatives to the rule

Additionally, SCAQMD is required to actively consider the socioeconomic impacts of regulations and make a good faith effort to minimize adverse socioeconomic impacts. H&SC Section 40728.5, requires SCAQMD to:

- Examine the type of industries affected, including small businesses; and
- Consider socioeconomic impacts in rule adoption

Finally, H&SC Section 40920.6 requires that incremental cost effectiveness calculation be performed for a proposed rule or rule amendment that imposes Best Available Retrofit Control Technology or “all feasible measures” requirements relating to ozone, carbon monoxide (CO), oxides of sulfur (SO_x), oxides of nitrogen (NO_x), and their precursors. This statute does not apply to PAR 1469; moreover, cost effectiveness in terms of dollars per ton is not meaningful for air toxic regulations, since many other factors besides the amount of pollution affect the health risk such as the potency of an air toxic and the location of receptors.

AFFECTED INDUSTRIES

PAR 1469 will affect chromium electroplating and chromic acid anodizing facilities. Based on SCAQMD permitted data, internet searches, and lists of potential Rule 1469 facilities provided by industry representatives, SCAQMD staff called facility operators inquiring about their operations. SCAQMD staff visited some affected facilities if there was sufficient information indicating the facility could potentially be subject to proposed amendments of Rule 1469.

SCAQMD staff identified 115 facilities that either conduct decorative or hard chromium electroplating or chromic acid anodizing operations within SCAQMDs jurisdiction. 80 of the 115 affected facilities are located in Los Angeles County, 30 in Orange County, one in Riverside, and the remaining four in San Bernardino County.

Of the 115 affected facilities, 47 facilities conduct decorative hexavalent chromium plating, 31 facilities conduct hard hexavalent chromium plating, and 30 facilities conduct chromic acid anodizing. Four facilities conduct trivalent chromium plating only, and three facilities conduct both chromic acid anodizing and hard hexavalent chromium plating.

The majority of the potentially affected industries are in the manufacturing sector (NAICS 332), where most of the electroplating, plating, polishing, anodizing, and coloring facilities belong. Table 1 lists the type of manufacturing at affected facilities, and for each type, the facilities’ industry classification, and the number of such facilities.

**Table 1:
Potentially Affected Facilities by Industry**

Industry	NAICS	Number of Facilities
Fabricated Metal Manufacturing	332	93
Metal Crown, Closure, and Other Metal Stamping (except Automotive)	332119	1
Saw Blade and Handtool Manufacturing	332216	1
Machine Shops	332710	3
Bolt, Nut, Screw, Rivet, and Washer Manufacturing	332722	2
Metal Coating, Engraving (except Jewelry and Silverware), and Allied Services to Manufacturers	332812	2
Electroplating, Plating, Polishing, Anodizing, and Coloring	332813	82
Plumbing Fixture Fitting and Trim Manufacturing	332913	2
Other Manufacturing	333-337	12
Other Industrial Machinery Manufacturing	333249	1
Special Die and Tool, Die Set, Jig, and Fixture Manufacturing	333514	1
Cutting Tool and Machine Tool Accessory Manufacturing	333515	1
Other Measuring and Controlling Device Manufacturing	334519	2
Motor and Generator Manufacturing	335312	1
Motor Vehicle Gasoline Engine and Engine Parts Manufacturing	336310	1
Other Motor Vehicle Parts Manufacturing	336390	1
Aircraft Manufacturing	336411	1
Other Aircraft Parts and Auxiliary Equipment Manufacturing	336413	2
Showcase, Partition, Shelving, and Locker Manufacturing	337215	1
Wholesale and Retail Trade	42, 44	2
Transportation Equipment and Supplies (except Motor Vehicle) Merchant Wholesalers	423860	1
Motorcycle, ATV, and All Other Motor Vehicle Dealers	441228	1
Professional, Scientific, and Technical and Other Services	54, 56	5
All Other Professional, Scientific, and Technical Services	541990	1
All Other Support Services	561990	4
Repair and Maintenance	811	3
Automotive Body, Paint, and Interior Repair and Maintenance	811121	1
Other Electronic and Precision Equipment Repair and Maintenance	811219	1
Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	811310	1
Total		115

Small Businesses

SCAQMD defines a “small business” in Rule 102, for purposes of fees, as one which employs 10 or fewer persons and which earns less than \$500,000 in gross annual receipts. SCAQMD also defines “small business” for the purpose of qualifying for access to services from SCAQMD’s Small Business Assistance Office as a business with an annual receipt of \$5 million or less, or with 100 or fewer employees. In addition to SCAQMD’s definition of a small business, the federal Clean Air Act Amendments (CAAA) of 1990 and the federal Small Business Administration (SBA) also provide definitions of a small business.

H&SC Section 42323 classifies a business as a “small business stationary source” if it: (1) is owned or operated by a person who employs 100 or fewer individuals. (2) Is a small business as defined under the federal Small Business Act (15 U.S.C. Sec. 631, et seq.). (3) Emits less than 10 tons per year of any single pollutant and less than 20 tons per year of all pollutants. The SBA definitions of small businesses vary by six-digit North American Industrial Classification System (NAICS) codes. In general terms, a small business must have no more than 500 employees for most manufacturing industries, and no more than \$7 million in average annual receipts for most nonmanufacturing industries.¹ A business in the industry of electroplating, plating, polishing, anodizing, and coloring (NAICS 322813) with fewer than 500 employees is considered a small business by SBA.

Out of the 115 affected facilities within SCAQMD’s jurisdiction, information on sales and employees for 104 facilities were available, based on 2017 Dun and Bradstreet data.² Under SCAQMD’s definition of small business, there are 25 small businesses affected by PAR 1469. Using the SBA definition of small business for the manufacturing sector, all of the 104 facilities are considered small businesses. Under the CAAA definition of small business, all of the 104 facilities are considered small businesses assuming that all the facilities without annual emission data emit less than 10 tons of VOC or NO_x.

COMPLIANCE COSTS

For facilities subject to PAR 1469, incremental costs were estimated for the capital outlays and related expenditures—including operations and maintenance (O&M), building enclosures with openings that do not exceed three and a half percent of the building enclosure envelope, permanent total enclosures, initial source tests for new APC systems as well as source tests for existing APC systems and screening tests for existing electrolytic tanks, incremental costs of permit application fees, and implementation of BMPs. The capital outlays would include APC systems fitted with HEPA filters.

All the costs discussed in this section are expressed in 2017 dollars. For the purpose of projecting future compliance costs, it is assumed that these costs would remain the same in the foreseeable future, with any increase being a result of inflation. Additionally, while it is considered in this analysis that all estimated costs would be borne by the affected facilities, the compliance costs could potentially be passed on to downstream customers of electroplating and anodizing services and products.

Staff has used the following sources to estimate costs of capital, installation, operating and maintenance of APC systems, source tests, screening tests, and BMPs:

1. Vendor quotes obtained by SCAQMD staff;
2. Vendor quotes obtained by Environomics, a consultant hired by the Metal Finishing Association of Southern California (MFASC);
3. Actual costs from a recent APC system installation;

¹ The latest SBA definition of small businesses by industry can be found at <http://www.sba.gov/content/table-small-business-size-standards>.

² Dun & Bradstreet Enterprise Database, 2017.

4. Plating/anodizing facility personnel discussions with vendors or engineers;
5. Cost estimates from the 2006 amendment to the CARB Airborne Toxic Control Measures (ACTM) for chromium electroplating. <https://www.arb.ca.gov/toxics/atcm/chroatcm.pdf>; and
6. Vendor quotes from consultants of Montrose Environmental Group, Inc. <http://montrose-env.com/>

Many of the costs estimated in this analysis are highly dependent on site-specific factors and on business decisions made by facilities subject to PAR 1469. For example, many facilities have more than one tank to be controlled under the proposed amendments. It is more cost effective to control multiple tanks using one APC system, due to reduced equipment (i.e. ductwork, blower, filter housing, etc.) as well as reduced installation, permitting, and source testing costs. However, it is often not possible to control more than one tank with an APC system because tanks that must be controlled are located in different buildings or located too far apart to use one APC system. Each facility will decide how to best to comply with the proposed requirements and an assumption is that each facility will likely use the lowest-cost option.

For this reason, two cost scenarios are provided in this analysis. A high cost scenario, which represents the highest expected cost of compliance with the requirements of PAR 1469, and a low cost scenario, which represents the costs associated with a more reasonable scenario.

It is important to note that when conducting this cost analysis, every effort was made to represent costs as realistically as possible, given that many factors would ultimately dictate what price a business will pay to ensure compliance with PAR 1469 requirements.³ The estimated cost for each line item was either represented by an industry average or a reasonable range, based on the information and data available. The procedure and assumptions for each cost scenario are discussed below. The total cost includes overall costs over 15 years for the low and high cost scenarios. The average annual compliance cost is estimated over the years 2019-2035. The average annual compliance cost of PAR 1469 is estimated to range from \$2.64 million (low cost scenario) to \$4.30 million (high cost scenario) per year, depending on the real interest rate assumed (1%-4%).⁴ Table 2 presents total and average annual compliance costs of PAR 1469 by requirement categories.

As presented in Table 2, the main requirements of PAR 1469 that have cost impacts for affected facilities would include installation of APC systems, O&M costs of APC systems, source test and

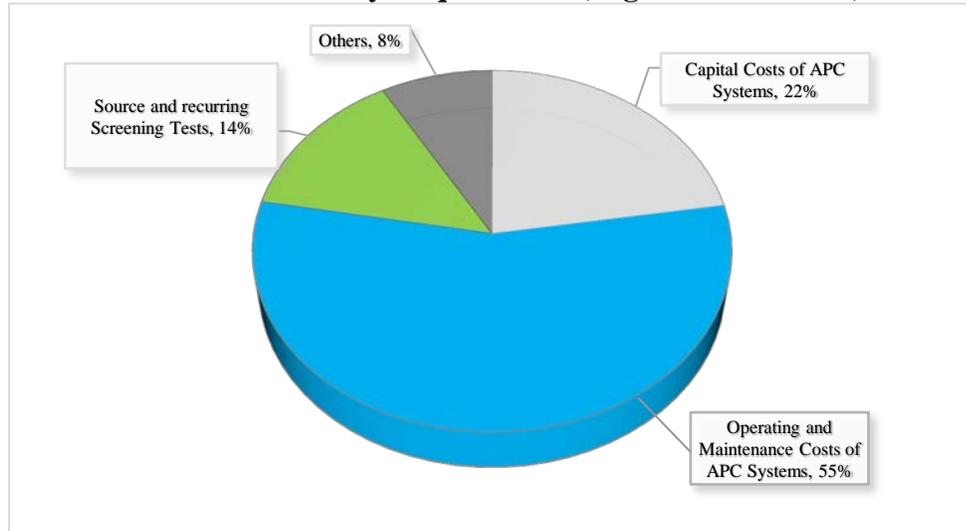
³ SCAQMD staff worked with Metal Finishing Association of Southern California (MFASC) consultants to develop cost assumptions for PAR 1469.

⁴ In 1987, SCAQMD staff began to calculate cost-effectiveness of control measures and rules using the Discounted Cash Flow method with a discount rate of 4%. Although not formally documented, the discount rate is based on the 1987 real interest rate on 10-year Treasury Notes and Bonds, which was 3.8%. The maturity of 10 years was chosen because a typical control equipment life is 10 years; however, a longer equipment life would not have corresponded to a much higher rate- the 1987 real interest rate on 30-year Treasury Notes and Bonds was 4.4%. Since 1987, the 4% discount rate has been used by SCAQMD staff for all cost-effectiveness calculations, including BACT analysis, for the purpose of consistency. The incremental cost reported in this assessment was thus annualized using a real interest rate of four percent as the discount rate. As a sensitivity test, a real interest rate of one percent will also be used, which is closer to the prevailing real interest rate.

screening test costs, installation of PTEs and upgrading building enclosures, and implementing BMPs.

The majority of PAR 1469 compliance costs are capital, installation, and O&M costs of APC systems. The annualized compliance costs are estimated at \$1.97 million (75% of total costs) for low cost scenario, and \$3.33 million (77%) for high cost scenario, respectively. Initial source tests and recurring screening tests are the next largest cost categories with about \$0.42 million (16%) for the low cost scenario and \$0.61 million (14%) for the high cost scenario, annually.

**Figure 1:
Annual Estimated Costs by Requirement (High Cost Scenario)**



The cost impacts for affected facilities from PAR 1469 compliance are from one-time costs and annual recurring costs. The one-time costs would include capital and installation of APC systems, initial source costs, permanent total enclosures, building modifications, permit application fees, and BMPs. Annual recurring cost estimates include costs of APC systems, annual costs of electrical power to run new ventilation blowers, annual monitoring costs, annual permit renewal fees, and costs of periodic source tests.

**Table 2:
Projected Total and Average Annual Compliance Cost of PAR 1469 by
Requirement Categories**

	Total Cost Low Cost Scenario (From 2019 to 2035)	Total Cost High Cost Scenario (From 2019 to 2035)	Annual Cost at 1% Real Interest Rate (Low Cost Scenario)	Annual Cost at 4% Real Interest Rate (High Cost Scenario)
One-Time Costs				
Implementing BMPs**	\$654,000	\$654,000	\$68,000	\$76,000
Building Modifications*	\$164,000	\$272,000	\$11,000	\$18,000
Capital Cost of New APC Systems for Existing Tier III Tanks*	\$6,539,000	\$8,584,000	\$463,000	\$738,000
Capital Cost for New APC Systems for Existing Electrolytic Tanks Controlled by Chemical Fume Suppressants*	\$0	\$2,744,000	\$0	\$209,000
Cost of Permanent Total Enclosure*	\$184,000	\$340,000	\$11,000	\$24,000
Initial Source Testing for New APC Systems for existing Tier III Tanks*	\$1,270,000	\$1,937,000	\$74,000	\$114,000
Initial Source Testing for New APC Systems for Existing Electrolytic Tanks controlled by Chemical Fume Suppressant*	\$0	\$540,000	\$0	\$32,000
Initial Source Testing for Existing APC Systems for Existing Electrolytic Tanks*	\$1,396,000	\$1,396,000	\$82,000	\$82,000
Permitting Costs for New APC Systems for Existing Tier III Tanks*	\$280,000	\$420,000	\$20,000	\$36,000
Permitting for New APC Systems Serving Existing Electrolytic Tanks controlled by chemical Fume suppressants*	\$0	\$118,000	\$0	\$8,000
Fluid Eductors**	\$30,000	\$42,000	\$3,000	\$5,000
Recurring Costs				
Screening Test (Recurring) Cost for Existing Electrolytic and Tier III Tanks	\$2,286,000	\$2,286,000	\$147,000	\$147,000
Screening Test (Recurring) Cost for Tier III Tanks	\$1,901,000	\$3,071,000	\$121,000	\$196,000
Screening Test (Recurring) Cost for New APC Systems for Electrolytic Tanks Controlled by Chemical Fume Suppressants	\$0	\$540,000	\$0	\$35,000
Annual Monitoring Costs	\$180,000	\$265,000	\$338,000	\$368,000
Operating and Maintenance Costs for APC Systems	\$17,655,000	\$30,680,000	\$1,168,000	\$2,010,000
Annual Operating (Electrical) Costs	\$5,174,000	\$6,092,000	\$338,000	\$368,000
Annual Permit Renewal Costs for Tier III Tanks	\$1,904,000	\$2,496,000	\$118,000	\$183,000
Total***	\$39,617,000	\$62,477,000	\$2,636,000	\$4,299,000

*Cost is annualized over 15 years of expected equipment life

** Cost is annualized over 10 years of expected equipment life (Splash Guards, Barriers, Pressure Gauge)

***Total values may not add up due to rounding.

Based on the type of operations performed by each facility, 13 categories were established based on the type of facilities (hard chromium plating, decorative chromium plating, chromic acid anodizing, multiple, trivalent) as well as the size of the facility (small, medium, large, other based on permitted ampere-hours).

Table 3 presents the total and average annual costs of PAR 1469 by type of operation. The majority of the annual compliance costs (\$2.49 million for high cost scenario, \$1.55 million for low cost scenario, both approximately 58% of total costs across all facility categories) is estimated to be incurred by affected facilities that belong to categories of Anodizing (small), Anodizing (medium), and Anodizing (other). Facility categories denoted by “Other” refers to facilities with a permit still under review at the time of the socioeconomic impact assessment, and ampere-hours information was not available to define the size of the operation.

**Table 3:
Projected Total and Average Annual Compliance Cost of PAR 1469 by Operation
Category
(2017 Dollars)**

Operation Category	Total Cost Low Cost Scenario	Total Cost High Cost Scenario	Annual Cost at 1% Real Interest Rate (Low Cost Scenario)	Annual Cost at 4% Real Interest Rate (High Cost Scenario)
Anodizing (Small)	\$9,150,000.00	\$13,427,000.00	\$609,000.00	\$924,000.00
Anodizing(Medium)	\$12,381,000.00	\$19,953,000.00	\$824,000.00	\$1,373,000.00
Anodizing (Other*)	\$1,742,000.00	\$2,824,000.00	\$116,000.00	\$194,000.00
Decorative (Small)	\$4,908,000.00	\$10,490,000.00	\$326,000.00	\$722,000.00
Decorative (Medium)	\$2,549,000.00	\$3,859,000.00	\$170,000.00	\$266,000.00
Decorative (Large)	\$236,000.00	\$236,000.00	\$16,000.00	\$16,000.00
Decorative (Other)	\$181,000.00	\$182,000.00	\$12,000.00	\$13,000.00
Hard (Small)	\$186,000.00	\$351,000.00	\$12,000.00	\$24,000.00
Hard (Medium)	\$548,000.00	\$567,000.00	\$36,000.00	\$39,000.00
Hard (Large)	\$5,803,000.00	\$7,830,000.00	\$386,000.00	\$539,000.00
Hard (Other)	\$135,000.00	\$135,000.00	\$9,000.00	\$9,000.00
Multiple (Large)	\$1,782,000.00	\$2,608,000.00	\$119,000.00	\$179,000.00
Trivalent (Other)	\$14,000.00	\$15,000.00	\$1,000.00	\$1,000.00
Total	\$39,617,000	\$62,477,000	\$2,636,000	\$4,299,000

*“Other” refers to facilities for which the permit was still under review and ampere-hours data was not yet available at the time of analysis.

Table 4 presents the compliance cost of PAR 1469 by industry types. The majority of the annual compliance costs (\$2.22 million or 84% for low cost scenario and \$3.63 million or 84% for the high cost scenario) of PAR 1469 is estimated to be incurred by the sector of fabricated metal manufacturing where most of the electroplating, plating, polishing, anodizing, and coloring facilities belong.

**Table 4:
Projected Total and Average Annual Compliance Costs by Industry for Affected Facilities
(2017 Dollars)**

Industry that Typically Uses the Equipment	NAICS Codes	Number of Facilities	Projected Annual Compliance Costs			
			Total Cost Low Cost Scenario	Total Cost High Cost Scenario	Annual Cost Low Cost Scenario 1% Real Interest Rate	Annual Cost High Cost Scenario 4% Real Interest Rate
Wholesale trade	42	2	\$869,000	\$1,384,000	\$58,000	\$97,000
Professional, scientific, and technical services	54	1	\$45,000	\$45,000	\$3,000	\$3,000
Fabricated metal product manufacturing	332	92	\$33,373,000	\$52,724,000	\$2,219,000	\$3,631,000
Machinery manufacturing	333	3	\$597,000	\$915,000	\$40,000	\$63,000
Computer and electronic product manufacturing	334	2	\$229,000	\$480,000	\$15,000	\$30,000
Electrical equipment and appliance manufacturing	335	1	\$40,000	\$76,000	\$2,000	\$4,000
Furniture and related product manufacturing	337	1	\$2,000	\$2,000	\$0	\$0
Administrative and support services	561	4	\$921,000	\$1,347,000	\$62,000	\$87,000
Repair and maintenance	811	3	\$597,000	\$915,000	\$40,000	\$63,000
Motor vehicles, bodies and trailers, and parts manufacturing	3361-3363	2	\$506,000	\$823,000	\$34,000	\$57,000
Other transportation equipment manufacturing	3364-3369	3	\$2,393,000	\$3,720,000	\$161,000	\$262,000
Retail trade	44-45	1	\$45,000	\$45,000	\$3,000	\$3,000
Total		115	\$39,617,000	\$62,477,000	\$2,636,000	\$4,299,000

One-time Costs of PAR 1469 Compliance

➤ Implementing BMPs

High Cost Scenario:

- Drip trays between electroplating/anodizing tank and adjacent tanks
- Tank labeling on each electroplating, anodizing and Tier III tank
- Barriers – 1 barrier at 111 affected facilities (trivalent facilities are not subject to this requirement)
- Instrumentation for existing APC systems – 2 static pressure gauges, 1 magnahelic, and 1 hot-wire anemometer for each existing APC system
- Cost: \$654,000

Low Cost Scenario:

- Assumptions and cost are same as in High Cost scenario
- Cost: \$654,000

Installation of Drip Trays

PAR 1469 requires installation of drip trays between each electroplating or anodizing tank and adjacent tanks for facilities with automated lines. A cost of \$200 per drip tray is assumed, in addition to 5 hours of labor (performed by plating shop personnel) to install these drip trays. According to the industry representative, labor costs are assumed to be at an hourly wage of \$22 per hour, which represents the average labor rate at the affected facilities. The number of drip trays is assumed to be equivalent to the number of existing Tier III Tanks and electrolytic tanks at 111 facilities, distributed evenly among all facilities. This results in an estimated cost of \$99,470 for installation of drip trays. This value is used for both the high and low cost scenario. Inclusion of this cost is a conservative assumption, as many facilities with automated lines currently have drip trays.

Installation of Labels on Tanks

PAR 1469 requires clear labeling of each tank within the tank process area with a tank number or other identifier, SCAQMD permit number, bath contents, maximum concentration (ppm) of hexavalent chromium, operating temperature range, and any agitation methods used. A cost of \$25 per label is conservatively assumed, though staff has observed in site surveys that most facilities already label tank information using handwritten or printed paper placards. Any missing label information could be added to the existing label or revised with the required information. The number of new and revised labels is assumed to be equivalent to the number of existing Tier I, Tier II, Tier III, and electrolytic tanks at 111 facilities, distributed evenly among all facilities. This results in an estimated cost of \$10,550 for installation of labels on tanks. This value is used for both the high and low cost scenario.

Installation of Barrier between Buffing, Grinding or Polishing Area and Tank Area

PAR 1469 requires separation of the buffing, grinding, or polishing area within a facility from the chromium electroplating or chromic acid anodizing operation. The proposal allows the barrier to be plastic strip curtains. Therefore, staff assumes plastic strip curtains will be used to comply with this requirement, due to their relatively low cost. A capital cost of \$1,000 plus an additional labor cost of 20 hours to install this barrier is assumed for each facility. The total estimated cost to comply with this BMP is \$165,000. This value is used for both the high and low cost scenario. Inclusion of this cost scenario is a conservative assumption, as many facilities currently conduct buffing, grinding and polishing activities in a separate room from electroplating or anodizing activities.

Installation of Parameter Monitoring Instrumentation on existing APC Systems

PAR 1469 requires installation of instrumentation to monitor pressure and airflow on existing APC systems. This instrumentation includes a static pressure gauge installed on the push side of a push-pull manifold serving a Tier III or electrolytic tank, a static pressure gauge or volume flow meter installed in the collection manifold of an APC system, and a differential pressure gauge installed across each stage of control in an APC system. For example, the differential pressure monitoring locations required by the proposal include across the mesh pads, pre-filters, and the HEPA filters. In this instance, three differential pressure monitoring devices would be required per APC system. Costs assumed for this requirement include \$200 for a static pressure gauge and \$1,000 for a differential pressure gauge. Both costs include installation.

Instrumentation for parameter monitoring is included in the unit cost for new APC systems serving existing Tier III Tanks. Therefore, no additional costs are assumed for new APC systems installed either for Tier III Tanks or for APC systems installed in the event that no chemical fume suppressant is certified by July 2021. For existing tanks, most permits already include a requirement to monitor differential pressure either across each stage of control or over all stages of control collectively. Therefore, APC systems for existing tanks already have at least one differential pressure monitor currently installed. Staff does not believe many APC systems are currently equipped with a static pressure gauge either on the push side of a push-pull ventilation system or within the collection manifold. To be conservative, this estimate includes two static pressure monitors and two differential pressure monitors. The APC systems for existing electroplating and anodizing tanks must have parameter monitoring instrumentation. The estimated cost of meeting this BMP requirement is estimated at \$316,000. This value is used for both the high and low cost scenario.

The total one-time cost of the above BMPs is estimated at \$654,000 for both low and high cost scenarios.

➤ **Building Modification Costs**

High Cost Scenario:

- Four openings per facility at 111 affected facilities
- 12 facilities modify existing openings to meet 3.5% enclosure envelope
- Construction based on 1,000 ft² of open area
- Cost: \$272,000

Low Cost Scenario:

- Four openings per facility at 111 affected facilities
- 12 facilities modify existing openings to meet 3.5% enclosure envelope
- Construction based on 400 ft² of open area
- Cost: \$164,000

PAR 1469 requires building enclosures that meet a limit of 3.5% enclosure openings as a percentage of the building envelope, which includes the area of the walls of the enclosure, the floor and the horizontal projection of the roof. Facilities with openings in excess of this limit have many options for compliance including enclosing openings by installing doors, windows and wall sections. Most facilities currently meet the proposed limit. In addition, PAR 1469 requires facilities to enclose all roof openings that are within 15 feet of Tier II or Tier III Tanks. It is estimated that a maximum of four openings per facility may need to be closed. Simple and cost-effective solutions are readily available to close these openings. An estimate of \$200 per opening is used to calculate closure costs. Existing shop personnel are expected to conduct this work. The total cost for building enclosure modifications is estimated to be \$92,000, inclusive of materials and labor.

Pursuant to the Ongoing Compliance Status & Emissions Report in Appendix 3, the owner/operator must identify enclosure openings that contribute to the 3.5% building allowance. The closure of roof openings within 15 feet of a Tier II or Tier III Tank will reduce the percentage of openings as a function of the building envelope.

Staff has learned of two situations where a facility may construct in order to meet the 3.5% opening requirement. In a survey of nine facilities, one had large openings high up in the walls that need to be enclosed to meet the 3.5% allowance. In a second situation, a facility has a plating operation in the middle section of a very large building. The facility prefers to keep the doors at either end of the building open and instead would construct interior walls that enclose the plating operation to meet requirements. This solution may require the facility to ventilate the area that houses the plating operation. It can be argued that construction in the second example is not driven by PAR 1469 requirements but is instead a business decision. In the survey mentioned, one out of nine facilities will be required to construct building enclosure modifications as a direct result of PAR 1469 requirements. For this analysis, these limited survey results are conservatively extrapolated

to the PAR 1469 universe of 111 facilities that conduct hexavalent chromium plating or anodizing, giving an estimate of 12 facilities that may be required to perform some kind of construction.

It is not possible to predict how the facilities will close existing openings. PAR 1469 allows a number of solutions such as permanently sealing existing openings with materials such as light-gauge steel or aluminum siding, closing doors and windows as allowed under the proposal (with two hours per day allowance for ingress and egress of equipment and personnel), installation of plastic strip curtains, or other materials on existing openings in lieu of closing doors and windows. Cost for these solutions are estimated as follows:

Adding to a section of a wall, including the cost to add panels to a partial enclosure that creates a building enclosure thereby meeting 3.5% limit for openings as a percentage of building envelope: \$44,000 for 100 feet section of wall 24 feet high. The wall is assumed to have a steel structure with a light gauge steel sheathing, one roll up door, and two entry doors. The unit cost of the wall was estimated at \$18.33 per square foot.⁵

Plastic strip curtains cost an average of \$7 in the size ranges expected for building enclosure applications (eight feet by three feet for personnel access doors; 12 feet by 16 feet for equipment access doors. An additional 50% is added for installation costs, giving an estimated unit cost of \$10.50 per square foot.⁶

Assuming half of building enclosures will be closed using solid wall surfaces and half will use plastic strip curtains results in an average cost of approximately \$15 per square foot. For the low cost scenario, it is assumed that up to 400 square feet of surface area will be enclosed, for an estimate of \$6,000, and for the high cost scenario, it is assumed that 1,000 square feet of surface area will be enclosed, giving an estimated \$15,000. For the 12 facilities estimated to be impacted by this requirement the total cost will range from \$72,000 to \$180,000. Costs to comply with the enclosure requirements for facilities within 1,000 feet of a school or sensitive receptor are accounted for in the costs to meet the 3.5% limit for openings described above.

⁵ National Building Cost Manual 2008. Costs were updated to current dollars.

⁶<https://www.grainger.com/category/strip-doors/strip-doors-replacement-strips-and-hardware/dock-equipment/material-handling/ecatalog/N-18lo?okey=plastic+strip+curtains&mkey=plastic+strip+curtains&refineSearchString=plastic+strip+curtains&NLSCM=14&EndecaKeyword=plastic+strip+curtains&searchBar=true&searchRedirect=plastic+strip+curtains&sst=subset>

➤ **Capital Cost of New APC Systems for Existing Tier III Tanks**

High Cost Scenario:

- 103 new APC systems at 70 affected facilities
- One APC system per Tier III tank
- Cost: \$8,584,000

Low Cost Scenario:

- 64 new APC systems at 55 affected facilities
- Multiple Tier III Tanks per APC system
- Cost: \$6,539,000

PAR 1469 would require affected facilities to install APC systems on hexavalent chromium-containing tanks that emit or have the potential to emit hexavalent chromium from their Tier III Tanks. In addition, Tier III Tanks that are currently exempt under Rule 219 often do not have tank parameters (i.e. size, applied heat or air sparging, chromium concentration within the bath) described in their SCAQMD permits. As a result, staff does not have data on all Tier III tanks affected by PAR 1469. To better estimate the number of Tier III Tanks affected, staff administered two surveys requesting data from affected facilities; one administered by SCAQMD compliance staff (Phase I), and the other completed by the owner or operator of a facility (Phase II).

Phase I of the survey consisted of information regarding tanks, housekeeping procedures, best management practices, and existing control techniques. Of the 115 affected facilities that were contacted, a total of 62 responses were received. Phase II was conducted mainly to obtain information from additional facilities that could be affected by the amendments as well as financial data (annual sales and number of employee) of all affected sources subject to the PAR 1469.

25 of the 62 survey responses received included the size and composition of Tier III Tanks. Data from these responses were extrapolated to estimate the number and size of Tier III Tanks at facilities that did not submit a survey response. In order to establish these estimates, 13 facility categories were created, based on the type of operations performed by the facility (hard chromium plating, decorative chromium plating, chromic acid anodizing, multiple operations, and trivalent) as well as the size of the facility (small, medium, large, and other). Facility size designations were based on the number of ampere-hours allowed in a facility's permit. Small facilities are those permitted for less than 500,000 ampere-hours/year, medium facilities are those permitted for 500,001 to 10,000,000 ampere-hours/year, and large facilities are those permitted above 10,000,000 ampere-hours/year. Facilities designated as "Other" had a permit under review at the time of the analysis and ampere-hours could not be confirmed. These categories are shown below:

1. Chromic Acid Anodizing (Small)
2. Chromic Acid Anodizing (Medium)
3. Chromic Acid Anodizing (Other)
4. Decorative Chromium Plating (Small)
5. Decorative Chromium Plating (Medium)

6. Decorative Chromium Plating (Large)
7. Decorative Chromium Plating (Other)
8. Hard Chromium Plating (Small)
9. Hard Chromium Plating (Medium)
10. Hard Chromium Plating (Large)
11. Hard Chromium Plating (Other)
12. Multiple Plating or Anodizing Operations (Large)
13. Trivalent (Other)

It should be noted that facilities designated as small for the purpose of estimating costs do not necessarily qualify them as a small business under the small business definition.

Tank estimates and associated costs are based on the number of survey responses within each category as described above, scaled to the total number of facilities with Tier III Tanks within that category. Average costs were assigned to each facility as a percentage of the total costs within that category for a particular capital cost or activity.

High Cost Scenario for APC Systems

There are a total of 27 facilities with chromium electroplating and/or anodizing tanks that are currently controlled only by chemical fume suppressants. Out of these 27, 12 facilities have both electroplating/anodizing tanks and Tier III Tanks. The remaining 15 facilities only have electroplating/anodizing tanks and represent some of the smallest facilities (based on amp-hours) in the PAR 1469 universe. Under the high cost scenario, it is assumed that a total of 130 tanks (i.e. 103 Tier III Tanks and 27 tanks controlled by fume suppressants) located at 70 facilities (i.e. 55 facilities with existing Tier III Tanks and 15 facilities with fume suppressant controlled tanks) will require APC controls. Under this scenario, one APC system is assumed for each tank.

Under a high cost scenario, an additional 27 APC systems are assumed to be installed at 27 facilities if no certified chemical fume suppressants are available by July 2021. 12 of these facilities already have Tier III Tanks that also need APCs, and were previously counted. The remaining 15 facilities do not have Tier III Tanks now and would need a new APC after 2022. The total APC system counts under the high cost scenario is therefore 130 (103+27) systems at 70 (55+15) facilities.

Low Cost Scenario for APC Systems

Under the low cost scenario, it is assumed that a total of 103 tanks located at 55 facilities will require APC controls. Under this scenario it is assumed that a certified chemical fume suppressant will be available by 2021, and that the 27 facilities currently using chemical fume suppressants as their only form of control will be able to use a certified chemical fume suppressant rather than installing APC systems. In addition, the low cost scenario assumes that where possible, facilities with higher ventilation needs will be able to vent more than one Tier III Tank into a single APC system and as a result, only 64 APC systems would be installed at 55 facilities. Table 5 presents the summary of the estimated number of Tier III Tanks and associated APC systems for both scenarios.

**Table 5:
Affected Facilities and Tanks**

High Cost Scenario		Low Cost Scenario	
# of Facilities	70	# of Facilities	55
# of Tier III Tanks	130	# of Tier III Tanks	103
# of APCs	130	# of APCs	64

SCAQMD staff used a number of sources to estimate capital and annual costs for new air pollution control systems, including estimates from the 2006 CARB chrome plating ATCM. These cost estimates were updated to 2017 dollars. Costs from recent quotes correlate very well with updated costs from the CARB ATCM. After review of the available cost data, the updated CARB ATCM costs represented the most conservative assumptions. All raw costs were converted to unit costs and are presented in dollars per cubic feet per minute (cfm) of APC system airflow. Three system sizes were estimated, including 5,000 cfm, 10,000 cfm, and 20,000 cfm. It was assumed that 150 cfm of airflow is required to control each square foot of tank surface area. This assumption was used both for electroplating/anodizing tanks as well as for Tier III Tanks. The three system sizes of 5,000 cfm, 10,000 cfm, and 20,000 cfm correspond to control of tanks with a surface area of approximately 33 square feet, 67 square feet, and 133 square feet, respectively.

All cost estimates are assumed to include the following:

1. Engineering and system design
2. Ventilation ductwork
3. Blower motor and housing
4. Control housing
5. Control media (i.e. mesh pads, pre-filters, HEPA filters, etc.)
6. Instrumentation required under PAR 1469, including:
 - a. Static pressure gauge on push side of push/pull system;
 - b. Static pressure gauge or volumetric flow meter at collection manifold; and
 - c. Differential pressure gauge measuring pressure drop across each stage of control.
7. Installation
8. Required electrical upgrades
9. Sales tax
10. Set-up and commissioning

Quotes obtained from vendors indicate that unit costs decrease as APC systems increase in size. Unit costs used in this analysis are as follows:

System Size (cfm)	Unit Cost Estimate (per cfm)
Up to 5,000	\$23
5,001 to 10,000	\$17
10,001 to 20,000	\$14

Unit cost estimates do not include source testing or permitting. However, the analysis provides separate line items for source testing and permitting. In addition, unit cost estimates do not include costs that the city or municipality may impose for building inspections, approvals and upgrades to

meet local building codes for the facility. For example, a facility may need to meet the current building code or seismic requirements. However, no costs were assumed for items such as building inspections, approvals, and upgrades imposed by the city or municipality, due to the uncertain nature of these costs. Each city or municipality may have different requirements relative to installation of APC systems, and staff cannot reasonably predict these costs. Therefore, actual costs may be higher for facilities with older buildings that need to be brought up to current codes.

Staff assumed that most tanks will require an APC system sized to control emissions from that individual tank. The assumption of one APC system per tank was made after consultation with Environomics and after numerous SCAQMD staff visits to facilities subject to Rule 1469. This is a conservative assumption as staff believes there are many opportunities for a plating or anodizing facility to realize savings under one or more of the following scenarios:

1. Venting multiple tanks to a common APC system, where these tanks are located in proximity to each other;
2. Moving tanks that are not currently located in proximity with each other closer together and venting to a common APC system; or
3. Venting an existing tank required to be controlled under PAR 1469 into an existing APC system, where capacity of that system allows.

It should be noted that there is a financial incentive for combining multiple tanks into a common APC system, relative to installing a single APC system for each tank, in terms of reduced unit cost as well as reduced source testing, permitting, and annual permit renewal fee costs. Therefore, actual costs will probably be lower for many facilities than costs calculated for the high cost scenario.

For the high cost scenario, the unit cost was assumed to be \$23 per cfm for most APC systems, which correlates with the smallest APC system size. A unit cost of \$17 per cfm was assumed for tanks requiring an APC system of up to 10,000 cfm. For the low cost scenario, it was assumed that 55 facilities that are required to control 103 tanks under PAR 1469 would combine tanks to create the largest possible system, resulting in a lower overall cost. It is further assumed that installation of new APCs systems for Tier III Tanks starts in 2019.

The total cost of installing the APC systems is estimated at \$6.5 to \$11.3 million, for low cost and high cost scenarios, respectively. The total average annual cost of installing the APCs are estimated at \$0.46 to \$0.97 million over 15 years, depending on the real interest rate assumed (1% for the low cost scenario and 4% for the high cost scenario, respectively).

Based on the approach described, staff initially estimated 137 existing Tier III Tanks at 55 chromium plating and anodizing facilities would need to be controlled as a result of PAR 1469 requirements. It was assumed that facilities will use a lower cost option rather than install APC systems where available. This could be the case for tanks that are currently air sparged, such as chem-film and passivation tanks. By removing air sparging, these tanks become Tier I Tanks. This analysis assumes these tanks will be retrofitted with fluid eductors, rather than continuing to be air sparged, resulting in much a lower overall cost to the facility. There are an estimated 20

chem film and passivation tanks that fall under this assumption, all located at facilities within Chromic Acid Anodizing (Medium) facilities.

Of the Tier III Tanks, 46 tanks in the Decorative Chromium Plating (Small), Decorative Chromium Plating (Medium) and Hard Chromium Plating (Large) facility categories are used to conduct either electropolishing or reverse plating (i.e. stripping) operations. Liquid sampling was conducted at 10 facilities to determine hexavalent chromium concentrations from these tanks. Tanks with hexavalent chromium concentrations in excess of 1,000 ppm are considered Tier III Tanks under PAR 1469, and tanks with concentrations under 1,000 ppm are not regulated. Sample results of tanks under 1,000 ppm within each facility category were scaled by the number of stripping/electropolishing tanks within that facility category to determine the number of tanks not expected to need controls. After adjusting for eductors used in passivation and chem film tanks, and for stripping/electropolishing tanks, the adjusted number of new APC systems serving existing Tier III Tanks is 103 for the high cost scenario and 64 for the low cost scenario.

➤ **Capital Cost for New APC Systems for Existing Electrolytic Tanks Controlled by Chemical Fume Suppressants Only**

High Cost Scenario:

- 27 new APC systems
- Chemical fume suppressants will not be certified prior to 2021
- Cost: \$2,744,000

Low Cost Scenario:

- no new APC systems
- Chemical fume suppressants will be certified prior to 2021
- Cost: \$0

In addition to new APC systems for Tier III Tanks, this analysis also includes cost estimates for APC systems for existing tanks that are currently controlled only by certified chemical fume suppressants. There are a total of 27 facilities with chromium electroplating and/or anodizing tanks that are currently controlled only by certified chemical fume suppressants.

It is assumed that all tanks located at facilities that are complying with the current requirements of Rule 1469 using only fume suppressants will delay any decisions on installing APC systems until after SCAQMD provides notice to facilities in January 2020 regarding the availability of certified chemical fume suppressants. It is further assumed that all facilities will install one APC system for all electroplating/anodizing tanks located at the facility. These assumptions recognize the small size of facilities currently using certified chemical fume suppressants and the likelihood that most of these facilities have a single electroplating or anodizing tank. Therefore, 27 additional APC systems were assumed to be installed to control emissions from electroplating/anodizing operations at these facilities in the event that chemical fume suppressants are not certified by SCAQMD and CARB.

➤ Cost of PTEs

High Cost Scenario:

- 2 PTEs will be triggered
- Ventilation system based on 15 air changes per hour
- Cost: \$340,000

Low Cost Scenario:

- 2 PTEs will be triggered
- Ventilation system based on 6 air changes per hour
- Cost: \$184,000

The PAR 1469 requirement for a PTE is triggered by one of several proposed provisions. These include:

1. More than one non-passing source test within a consecutive 48-month period; or
2. Two failures to cease operating a tank controlled by air pollution control (APC) system within 48 months for facilities located more than 1,000 feet from a sensitive receptor or a school; or a single failure for facilities located less than 1,000 feet from a sensitive receptor or a school, after a:
 - (i) Failed parameter monitoring measurement (i.e. slot velocity or smoke test) of an APC system; or
 - (ii) Failed smoke test of an add-on non-ventilated APC device (i.e. tank cover or Merlin Hood).

Within 180 days after PAR 1469 is adopted, enclosure openings for both building enclosures and PTEs are required to be less than 3.5% of the building envelope (i.e. area of walls plus floor and horizontal projection of ceiling on the floor). This requirement would be in effect before any PTE can be triggered. This means all necessary building construction would be done prior to a PTE being required. In addition to meeting the enclosure opening requirement, a PTE will require the installation of a ventilation system designed to meet the face velocity requirements of U.S. EPA Method 204. This is the only construction assumed if a PTE is triggered. Staff believes the likelihood of triggering construction of a PTE under any of the scenarios listed above is very low. To be conservative, an estimate of two PTEs was used.

The ventilation rate assumed for the low cost scenario is based on six air changes per hour (ACH) and based on 15 ACH for the high cost scenario. This equates to 4,000 cfm to 10,000 cfm for an average size building (40,000 cubic feet of volume).

It is assumed that the APC system consists of similar makeup to a dedicated system serving a Tier III Tank; that is, a mist eliminator followed by pre-filter and HEPA filters as final control. As such, the cost of installation of an APC system as described before is \$23 per cfm for the 4,000 cfm system, and \$17 per cfm for the 10,000 cfm system. It is further assumed that no building construction will be necessary to meet the PTE requirements, since PAR 1469 already requires that openings for a building enclosure do not exceed 3.5% of the building envelope, and all

necessary construction has already taken place. The estimated cost of the two PTEs is therefore \$184,000 for the low cost scenario, and \$340,000 for the high cost scenario. Annual operating costs for the two PTEs are estimated as 18% of the capital cost,⁷ plus electricity to operate the ventilation blower. This O&M cost was already also assumed for APC systems serving Tier III Tanks.

➤ **Initial Source Testing for New APC Systems for existing Tier III Tanks**

High Cost Scenario:

- 103 initial source tests for new APC systems
- One APC system per Tier III Tank
- Cost: \$1,937,000*

Low Cost Scenario:

- 64 source tests for new APC systems
- Multiple Tier III tanks per APC system
- Cost: \$1,270,000

*Cost is adjusted for removal of stripping tanks within Decorative (small) and Decorative (medium) categories based on low concentrations (less than 1,000 ppm) of hexavalent chromium measured during sampling.

PAR 1469 requires an initial source test for new APC systems to measure emissions and establish system parameters. This requirement will affect 103 Tier III Tanks at 55 facilities. For the high cost scenario, it was assumed that one APC system is necessary for each tank resulting in 103 APC systems. For the low cost scenario, it is assumed that facilities with Tier III Tanks will take advantage of the cost savings of a larger system serving multiple tanks and 64 APC systems would serve 103 Tier III Tanks. Staff received a quote from a source testing contractor that performs the majority of source tests for facilities subject to PAR 1469. The current cost of a conventional source test consisting of three individual collection runs according to a SCAQMD approved protocol is \$20,000. The total estimated costs for source tests conducted on APC systems serving 103 Tier III Tanks ranges from \$1,270,000 for the low cost scenario to \$1,937,000 for the high cost scenario. It is further assumed that initial source tests for new Tier III Tanks start in 2020 and 2021 and that for electrolytic tanks starts in 2022, respectively.

⁷ 18% O&M for PTE is based on information provided by industry economist consultant.

➤ **Initial Source Tests for Existing APCs for Existing Electrolytic Tanks**

High Cost Scenario:

- 25 initial source tests for existing APC systems if most recent source test was conducted before January 2009 at \$20,000 each
- 64 emission screening tests for existing APC systems if most recent source test was conducted before January 2009 at \$14,000 each
- Cost: \$1,396,000

Low Cost Scenario:

- Same as High Cost Scenario
- Cost: \$1,396,000

PAR 1469 requires a source test for existing equipment. Some APC systems serving existing electrolytic tanks were tested following the previous amendment to Rule 1469 in 2008. In order to minimize the cost of this requirement to industry, APCs with source tests that were conducted after January 2009 are allowed to conduct an emissions screening test to satisfy the initial source testing requirement. In addition, PAR 1469 allows facilities with a source test conducted after January 2015 to satisfy the requirement for an initial source test. An emissions screening test consists of a single run and is estimated to cost \$14,000. It is estimated that it will cost \$1,396,000 to source test 89 APC systems serving electrolytic tanks, for both the low cost and high cost scenarios.

➤ **Initial Source Tests for New APC Systems for Existing Electrolytic Tanks controlled by Chemical Fume Suppressants Only**

High Cost Scenario:

- 27 initial source tests for new APC systems serving tanks formerly controlled by chemical fume suppressants
- Chemical fume suppressants will not be certified prior to 2021
- Cost: \$540,000

Low Cost Scenario:

- No initial source tests for tanks controlled by chemical fume suppressants
- Chemical fume suppressants will be certified prior to 2021
- Cost: \$0

The high cost scenario assumes that certified chemical fume suppressant would not be certified prior to the July 2021 date in PAR 1469, and would require at facilities that currently use certified chemical fume suppressants would require APC systems to comply with the emission limits. If this occurs, 27 new APC systems would be required at 27 facilities. The estimated cost to source

test these APC systems is \$540,000. The low cost scenario assumes a chemical fume suppressant will be certified and available by July 2021 and no APC systems are necessary, resulting in no additional cost.

The total initial source test cost are estimated at \$2,666,000 to \$3,873,000 for low and high cost scenarios, respectively.

➤ **Permitting Costs for New APC Systems for Existing Tier III Tanks**

High Cost Scenario:

- 103 permit applications for new APC systems
- One APC system per Tier III Tank
- Cost: \$420,000

Low Cost Scenario:

- 64 permit applications for new APC systems
- Multiple Tier III tanks per APC system
- Cost: \$280,000

A permit application fee is submitted with the permit application for each new APC system required by PAR 1469. The estimated number of Tier III Tanks required to be controlled is 103 Tier III Tanks at 55 facilities, as previously described. The applicable permit fee schedule is Schedule C, which is \$4,354 for each permit required. As previously described, the high cost scenario assumes individual APC systems for each tank, resulting in a total one-time cost of \$420,000. The low cost scenario assumes 64 APC systems will be necessary to control emissions from 103 Tier III Tanks, resulting in a one-time permitting application fee cost of \$280,000.

➤ **Permitting for New APC Systems Serving Existing Electrolytic Tanks Controlled By Chemical Fume Suppressants Only**

High Cost Scenario:

- 27 permit applications for new APC systems serving tanks formerly controlled by chemical fume suppressants only
- Chemical fume suppressants will not be certified prior to 2021
- Cost: \$118,000

Low Cost Scenario:

- No permit applications for tanks controlled by chemical fume suppressants only
- Chemical fume suppressants will be certified prior to 2021
- Cost: \$0

If certification of a chemical fume suppressant is not made available for existing electrolytic tanks by July 2021, the installation of new APC systems would be required by PAR 1469. Permitting costs associated with the new APC systems are \$118,000. The low cost scenario assumes availability of a certified chemical fume suppressant, and would result in no installation of an APC system and no permitting costs accordingly.

➤ **Fluid Eductors**

High Cost Scenario:

- 20 passivation and chem film tanks will use fluid eductors rather than controlling tanks with an APC system
- Cost quote obtained by industry consultant
- Cost: \$42,000

Low Cost Scenario:

- 20 passivation and chem film tanks will use fluid eductors rather than controlling tanks with an APC system
- Cost quote obtained by SCAQMD staff
- Cost: \$30,000

As previously described, it is assumed that facilities would choose to use a lower cost option over installing APC systems where available. For tanks that are currently air sparged, but where chromium concentrations are low enough to be considered Tier I Tanks without air sparging, such as chem-film and passivation tanks, a lower cost option is available in the form of fluid eductors. This analysis assumes these tanks will be retrofitted with fluid eductors, rather than continuing to be air sparged, resulting in much lower overall cost as compared to installing and maintaining an APC system. Since there are no moving parts within fluid eductors, there is no maintenance cost. There are an estimated 20 chem film and passivation tanks that can make use of this option. SCAQMD staff obtained an estimated cost of \$1,500 for fluid eductors sized to fit an average tank. This value is used for the low cost scenario. MFASC's industry consultant obtained a similar quote of \$2,100 per average tank, and this value is used for the high cost scenario. The capital costs for fluid eductors in PAR 1469 is estimated at \$30,000 and \$42,000 for low cost scenario and high cost scenario, respectively.

Annual O&M Costs of APC Systems and Other Recurring Costs

Annual cost estimates include annual O&M costs of APC systems, annual costs of electrical power to run new ventilation blowers, parameter monitoring, annual permit renewal fees, and annual costs of periodic (every five to seven years) source tests required under PAR 1469.

➤ **Screening Source Test (Recurring) Costs for Existing Electrolytic and Tier III Tanks**

High Cost Scenario:

- 219 source tests every 5 to 7 years
- 103 emission screening tests for new APC systems serving Tier III tanks + 89 screening source test for existing APC systems serving electrolytic tanks + 27 screening source tests for new APC systems serving tanks formerly controlled by chemical fume suppressants
- Cost: \$5,897,000 total for years 2019 to 2035 (present value), see Table 2 Screening Test (Recurring) categories

Low Cost Scenario:

- 153 source tests every 5 to 7 years
- 64 emission screening tests for new APC systems serving Tier III tanks + 89 emission screening tests for existing APC systems serving electrolytic tanks
- Cost: \$4,187,000 total for years 2019 to 2035 (present value), see Table 2 Screening Test (Recurring) categories

PAR 1469 requires source tests to be conducted every five to seven years for new and existing APC systems. The compliance dates for initial source tests are staggered by 180 days, depending on when the APC system is required to be installed. For chromic acid anodizing facilities, the initial source test is required by October 2020 and next subsequent test within five to seven years, by 2025 or 2027. For hard chrome plating facilities the initial test would be due in April 2021 and the subsequent test in 2026 or 2028. For decorative plating facilities, the initial test would be due in October 2021 and the subsequent test in 2026 or 2028.

For the high cost scenario, it is assumed that a total of 219 source tests are required every five to seven years. This would include source tests for 103 APC systems serving 103 Tier III Tanks, 89 APC systems serving electrolytic tanks, and 27 APC systems serving electrolytic tanks currently controlled by certified chemical fume suppressants only. It is assumed that each test will be a screening test only, at a cost of \$14,000. For the low cost scenario, it is assumed that a total of 153 source tests are required every five to seven years. This would include source tests for 64 APC systems serving 103 Tier III Tanks and 89 APC systems serving electrolytic tanks. The total annual source test cost for the low and high cost scenarios are estimated at \$268,000, and \$378,000, respectively.

➤ **Annual Monitoring Costs**

High Cost Scenario:

- 412 labor hours for smoke tests
- 348 labor hours for inlet slot velocity measurements
- 103 new APC systems serving Tier III tanks + 89 existing APC systems serving electrolytic tanks + 27 new APC systems serving tanks formerly controlled by chemical fume suppressants
- Cost: \$265,000 total for years 2019 to 2035 (present value)

Low Cost Scenario:

- 236 labor hours for smoke tests
- 306 labor hours for inlet slot velocity measurements
- 64 new APC systems serving Tier III tanks + 89 for existing APC systems serving electrolytic tanks
- Cost: \$180,000 total for years 2019 to 2035 (present value)

PAR 1469 requires parameter monitoring to be conducted every six months. The requirements include conducting a smoke test to determine acceptable capture efficiency of the APC system, and inlet velocity measurements of the APC system to ensure they are operating at or near their design velocity. Smoke tests are an existing requirement and will only affect new APC systems. A conservative estimate of two hours per smoke test is assumed for this analysis. It is also assumed that existing shop personnel will conduct smoke tests. Under PAR 1469, 64 to 103 new APC systems will need to be tested twice per year, for a total of 236 to 412 labor hours. It is further assumed that labor rates for shop personnel are approximately \$22 per hour which would result in a total estimated annual cost of \$5,192 to \$9,064 for shop personnel to conduct smoke tests.

Measurement of APC system inlet velocity is a new requirement that will affect existing as well as new APC systems. There are 89 existing systems, and from 64 to 103 new APC systems will be required under PAR 1469 for the low and high cost scenario, respectively. It is assumed that one hour per inlet velocity measurement will be required for this task. It is also assumed that existing shop personnel will conduct inlet slot velocity measurements. For the low cost scenario, 153 inlet slot velocity measurements (64 new + 89 existing) will be conducted twice per year, for a total of 306 labor hours. Under the high cost scenario 192 inlet slot velocity measurements (103 new + 89 existing) will be conducted twice per year, for a total of 384 labor hours. It is further assumed that labor rates for shop personnel are approximately \$22 per hour, which would result in a total annual estimated cost of \$6,512 to \$8,448 for shop personnel to conduct inlet slot velocity measurements.

For the inlet slot velocity measurements, it is also assumed that one hot-wire anemometer capable of logging data will be purchased for this task. A suitable hot wire anemometer can be purchased

for \$600, resulting in a total cost of \$66,600 for the 111 facilities that conduct hexavalent chromium electroplating or chromic acid anodizing.⁸

➤ **O&M Costs of APC Systems**

High Cost Scenario:

- 18% of capital cost of new APC systems
- 103 new APC systems serving Tier III tanks + 27 new APC systems serving tanks formerly controlled by chemical fume suppressants
- Cost: \$30,680,000 total for years 2019 to 2035 (present value)

Low Cost Scenario:

- 18% of capital cost of new APC systems
- 64 new APC systems serving Tier III tanks
- Cost: \$17,655,000 total for years 2019 to 2035 (present value)

O&M costs include replacement filters, disposal of filters, and general maintenance, which includes labor to maintain APC systems. Staff used the methodology in the 2006 CARB Chromium Electroplating ATCM, which is based on a percentage of the total capital plus installation costs for the APC systems. The cost of electrical power usage was included in the CARB ATCM methodology but is adjusted here due to the fact that this analysis includes a separate line item for electrical power consumption. Therefore, a consistent ratio of 18% of the capital and installation costs is assumed for O&M for operating the APC systems.⁹ The annual O&M cost of PAR 1469 is estimated at \$1,168,000, and \$2,010,000 for low cost scenario and high cost scenario, respectively.

Assumptions for APC Systems Serving High Temperature Tier III Tanks

Representatives of the metal finishing industry have reported that controlling emissions from tanks heated above 170 degrees may be problematic with regard to removing moisture from the effluent stream prior to final filtration. PAR 1469 requires an air pollution control system controlling Tier III Tanks to meet an emission limit of 0.0015 mg/amp-hr and it is assumed for this analysis that HEPA filtration (99.97% control efficiency at 0.3 µm) will be necessary to achieve this emission limit. HEPA filters work best in a dry air stream. Moisture in the form of mist, condensing water vapor and aerosols of liquid water is typically removed prior to final filtration using a mist eliminator or scrubbers. However, in a heated effluent stream that may be saturated, it is more difficult to remove moisture. Limited data suggests that it may be necessary to replace HEPA

⁸ <https://www.grainger.com/category/air-velocity-meters-and-anemometers/air-movement/test-instruments/ecatalog/N-b83?okey=hot+wire+anemometers&mkey=hot+wire+anemometers&refineSearchString=hot+wire+anemometers&NLSCM=14&EndecaKeyword=hot+wire+anemometers&searchRedirect=hot+wire+anemometers&sst=subset&suggestConfigId=>

⁹ 18% O&M for APC systems are based on information provided by industry economist consultant

filters more often in an APC system venting high temperature tanks than in an ambient-temperature air stream, due to the lower tolerance of HEPA filters in a saturated or near-saturated air stream.

One engineered solution suggested by the metal finishing industry (environmental consultants) is to introduce an additional volume of dry, ambient-temperature air to reduce the relative humidity. They provided an initial estimate of the necessary excess air to be 30%, with the caveat that this volume may need to be refined after installation. There are an estimated 40 tanks that are heated to 170 degrees or higher. These tanks are all located at facilities within the Anodizing (Medium) category. Therefore, the ventilation rate for 40 tanks located within the Anodizing (Medium) category is increased by 30% to account for this additional air. This assumption is made for both the low and high cost scenarios. A HEPA filter cost rated for 2000 cfm air flow at a differential pressure of two inches of water column is estimated at \$611.¹⁰

The estimated average airflow for an APC system serving a Tier III Tank in the Anodizing (Medium) category is 12,810 cfm. Raising this value by 30% results in an estimated 16,653 cfm. It is assumed that nine HEPA filters will be necessary for this size system.

➤ **Screening Source Test (Recurring) Cost for Tier III Tanks**

All recurring costs are already accounted for under Screening Source Test (Recurring) Cost for Existing Electrolytic and Tier III Tanks.

➤ **Screening Source Test (Recurring) Cost for New APC Systems for Electrolytic Tanks Controlled by Chemical Fume Suppressants**

All recurring costs are already accounted for under Screening Source Test (Recurring) Cost for Existing Electrolytic and Tier III Tanks.

➤ **Annual Operating (Electrical) Costs**

High Cost Scenario:

- 2,615,000 kWh/yr
- Additional 30% excess air assumed for high temperature tanks
- Cost: \$6,092,000 total for years 2019 to 2035 (present value)

Low Cost Scenario:

- 2,300,000 kWh/yr
- Standard assumptions – no excess air
- Cost: \$5,174,000 total for years 2019 to 2035 (present value)

Survey data from existing APC systems was used to estimate power consumption as a function of blower size. From the survey results, it was determined that each horsepower of motor rating was associated with 550 cfm of ventilation air moving through ventilation systems installed in a typical chromium electroplating or chromic acid anodizing facility. The average size of a ventilation

¹⁰ https://www.grainger.com/category/hvac-and-refrigeration-air-filters-hepa-filters/ecatalog/N-qbp/Ntt-hepa+filters?sst=subset&ts_optout=true

system estimated for each category of facilities was then correlated with motor horsepower that is required to move an equivalent volume of ventilation air. Total system motor horsepower was then converted to kilowatt-hours (kWh) of power per year required, assuming an average operating schedule of 12 hours per day and five days per week. Using this approach and a unit cost of \$0.14-0.15/kWh results in a cost estimate of \$338,000 and \$368,000 annually for low and high cost scenario for electrical power to run ventilation blowers for the new APC systems required under PAR 1469.¹¹

➤ **Annual Permit Renewal Costs for Tier III Tanks**

High Cost Scenario:

- 130 permit renewals for new APC systems
- One APC system per Tier III tank
- Cost: \$2,496,000 total for years 2019 to 2035 (present value)

Low Cost Scenario:

- 64 permit applications for new APC systems
- Multiple Tier III tanks per APC system
- Cost: \$1,904,000 total for years 2019 to 2035 (present value)

An annual permit renewal fee is charged for each new permit required under PAR 1469. This includes APC systems serving 103 Tier III Tanks, as previously discussed. The annual permit renewal fee for Schedule C is \$1,409 for calendar year 2018 and thereafter. As previously described, the high cost scenario assumes individual APC systems for each Tier III Tank, resulting in 103 new APC systems and an annual permit renewal cost of \$145,000. The low cost scenario assumes 64 APC systems will be necessary to control emissions from 103 Tier III Tanks, resulting in an average annual permit renewal fee of \$83,000. It is further assumed that the annual permit renewal cost starts in 2020.

The high cost scenario also includes annual permit renewal fees for new APCs serving existing electrolytic tanks if no chemical fume suppressants are certified after July 2022. The cost of annual permit renewal fees for these 27 APC systems is \$38,043. Total annual permit renewal costs are estimated at \$183,000 for the high cost scenario and \$118,000 for the low cost scenario, respectively.

¹¹ <https://www.electricitylocal.com/states/california/los-angeles/>

FACILITY-BASED IMPACT ANALYSIS

The 2014 Abt audit report recommended that the SCAQMD expand its small business impacts analysis in its socioeconomic assessments. Specifically, Abt recommended staff to limit the scope of its small business impact analyses to the direct compliance expenditures of regulated facilities. To provide context for the estimated compliance costs for small business, Abt recommended that SCAQMD compare these costs to the annual revenues and/or profits of small business. For publicly traded companies, they recommended SCAQMD obtain revenue and profit data from existing databases such as Dun & Bradstreet or Hoover's. For private companies, Abt recommended that SCAQMD compare costs to the revenues and/or profits of the average small business in an industry based on industry-specific revenue data from the Economic Census and industry-specific profit margin data from the Risk Management Association's Annual eStatement Studies series.

SCAQMD conducted a facility-based impact analysis in order to provide further information on the potential impacts of PAR 1469 for small businesses.¹² This analysis measures the annual compliance cost a facility may incur under the proposed amendments relative to its annual revenues. While this section provides information about how compliance costs affect an individual facility, it does not describe broader economic impacts, such as the impact on jobs and other socioeconomic effects, which are described in the following section of this report. The compliance cost is categorized by the different facility types as summarized in Table 6, which provides the basis of the cost data for this analysis. There are a few different sources of revenue and sales data that can be utilized for this type of analysis and they are discussed below.

➤ Revenue Data

Staff has examined a number of different data sources to help understand the amount of revenue for affected facilities. The first data source described here, which helps provide a baseline for this analysis, is from the 2012 U.S. Economic Census.¹³ The Industry Statistics for Subsectors and Industries by Employment Size includes data by both detailed industry level (six digit NAICS), and by number of employees per establishment. Table 6 describes the data for the electroplating, plating, polishing, anodizing, and coloring industry (NAICS 332813), which comprises the vast majority of affected facilities under PAR 1469. According to these data, the majority of establishments fall within the less than four employee category. The average revenue per establishment ranges from \$264,000 for the smallest category of facilities to over \$24 million for the largest category of facilities, with an average of \$3 million per facility. The revenue per employee tends to increase with the size of the establishment, with an average of \$137,200 per

¹² Based on methodological recommendations from Industrial Economics (2017):

http://www.aqmd.gov/docs/default-source/clean-air-plans/socioeconomic-analysis/iec_smallscalebizrpt.pdf .

¹³ U.S. Census Bureau. Manufacturing Summary Series: General Summary: Industry Statistics for Subsectors and Industries by Employment Size: 2012.

https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2012_US_31SG2&prodType=table

employee for all establishments in the United States. The revenue per employee across all establishments in this industry in the four-county SCAQMD region is \$107,000.¹⁴

Table 6:
2012 Establishment Annual Revenue by Employment Size for the Electroplating, Plating, Polishing, Anodizing, and Coloring Industry (NAICS 332813)¹⁵

Size of establishment	Revenue* per establishment	Revenue* per employee
0 to 4 employees	\$264,071	\$83,235 to \$208,088
5 to 9 employees	\$835,424	\$123,098
10 to 19 employees	\$1,558,802	\$110,395
20 to 49 employees	\$3,946,687	\$125,509
50 to 99 employees	\$10,179,833	\$144,977
100 to 249 employees	\$24,141,949	\$173,178
250 to 499 employees**	n/a	n/a
500 to 999 employees**	n/a	n/a
All establishments	\$2,977,510	\$137,242

*Total value of shipments and receipts for services (2012 dollars)

** There were no facilities within NAICS 332813 found in the category of 250 to 499, 500 to 999 employees

Another data source considered for this analysis was the Dun & Bradstreet Enterprise Database. This database is used by staff to help classify potential affected facilities as small businesses as described in the previous section and it includes data on facilities' annual revenues and number of employees. Data on employment and revenue are available for 104 of the 115 affected facilities. Based on the available information, these data are considered to have a high level of confidence because it tracks with facility data, but nonetheless there is still some level of uncertainty associated with these estimates. In the following tables, the data are summarized according to size of establishment and the facility classification types used in development of PAR 1469. The data are first summarized by facility employment size in Table 7. Based on these data, the total annual revenue for affected facilities for which data are available is nearly \$1 billion dollars and the total number of employees directly employed by affected facilities is about 5,300. The average annual revenue for the affected facilities is approximately \$9.2 million and increases with facility size. The revenue per employee is approximately \$182,000 and is proportional to facility size. The revenue per employee from the Dun & Bradstreet 2017 database are comparable to that from the Economic Census when adjusted to 2017 dollars, adding to staff's confidence in the validity of the U.S. Economic Census data.¹⁶

¹⁴ U.S. Census Bureau. Manufacturing Summary Series: General Summary: Industry Statistics for Subsectors and Industries by Employment Size: 2012.
https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2012_US_31A1&prodType=table

¹⁵ U.S. Census Bureau. Manufacturing Summary Series: General Summary: Industry Statistics for Subsectors and Industries by Employment Size: 2012.
https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2012_US_31SG2&prodType=table

¹⁶ The \$137,200 from Table 6 is approximately \$151,000 in 2017 dollars when adjusted for California CPI.

Table 7:
Summary of Dun & Bradstreet Revenue and Employment Data (2017) by Facility Size

Employees	Number of facilities	Total Revenue (Millions)	Total Employees	Average Revenue (Millions)	Revenue per Employee
1 to 4	11	\$1.90	25	\$0.17	\$76,000
5 to 9	14	\$7.59	85	\$0.54	\$89,000
10 to 19	19	\$24.18	246	\$1.27	\$98,000
20 to 49	24	\$97.98	792	\$4.08	\$124,000
50 to 99	20	\$233.52	1318	\$11.68	\$177,000
100 to 249	14	\$498.97	2080	\$35.64	\$240,000
250 to 499	2	\$97.32	743	\$48.66	\$131,000
Overall	104	\$961.46	5289	\$9.24	\$182,000

The Dun & Bradstreet data are also summarized by facility classification in Table 8. These classifications correspond with those presented in the cost analysis section (Table 3). The Anodizing (Medium) facilities tend to have higher revenues than corresponding decorative and hard plating shops on average. There is a large range in revenue and number of employees within the facility categories.

Table 8:
Summary of Dun & Bradstreet Revenue and Employment Data (2017) by Facility Category

Category*	Number of Facilities	Average Annual Revenue (Millions)	Range of Annual Revenue (Millions)	Average Number of Employees per facility	Range of Employees per facility	Average Revenue per employee
Anodizing (Small)	13	\$13.44	\$0.35 - \$56.22	61	7 - 154	\$220,000
Anodizing (Medium)	14	\$25.71	\$1.1 - \$167.92	109	40 - 388	\$240,000
Decorative (Small)	27	\$1.67	\$0.08 - \$5.8	18	1 - 70	\$90,000
Decorative (Medium)	11	\$10.19	\$0.04 - \$58.81	62	1 - 225	\$160,000
Decorative (Large)	5	\$10.76	\$0.16 - \$24.04	77	2 - 150	\$140,000
Decorative (Other)	2	\$1.56	\$0.05 - \$3.06	8	1 - 14	\$210,000
Hard (Small)	6	\$8.20	\$0.86 - \$42.49	42	7 - 175	\$200,000
Hard (Medium)	4	\$10.09	\$0.59 - \$19.93	54	5 - 130	\$190,000
Hard (Large)	18	\$5.10	\$0.22 - \$45.85	40	3 - 355	\$130,000
Trivalent (Other)	4	\$7.85	\$0.72 - \$20.35	53	7 - 140	\$150,000
Total	104	\$9.24	\$0.04 - \$167.92	51	1 - 388	\$180,000

*Anodizing (Other) and multiple (Large) are excluded from the table due to lack of revenue data. Hard (Other) was combined with Hard (Large) category because Hard (Other) consists of one facility.

During the development of PAR 1469, facilities were sent a survey with questions on many aspects of their operations. Included were questions on the number of workers employed by facility and the average annual revenues. The response rate to the questions on number of employees was about 45% and the response rate to the questions on revenue was about 36%. Staff's analysis of this survey data resulted in an average revenue per employee of about \$69,000. Upon statistical evaluation it was found that these data differ significantly from the baseline data from the U.S. Economic Census and facility specific data provided by the Dun & Bradstreet database.¹⁷ Due to this large difference, the survey data was not utilized here for the assessment of facility-based impacts.

➤ **Analysis**

Table 9 summarizes the results of the analysis using the Dun & Bradstreet sales data. The second column shows the average annual facility cost for facilities in each category for the both the high and low cost scenarios. The Anodizing (Medium facility) category has the highest average cost for both the high and low cost scenario, with a range of \$55,000 to \$90,000. The facility average cost for the Decorative (Small) category, which has the greatest number of affected facilities, ranges from \$12,000 to \$26,000. The next column shows the range of facility costs in each category. Facility costs are estimated to range from \$0 to \$97,000 depending on facility category and low or high cost scenarios. The Anodizing (Medium) category has costs that range from \$5,000 to \$97,000, while the Decorative (Small) category has costs that range from \$12,000 to \$26,000.

Table 9
Facility-specific Annual Cost and Cost Impacts

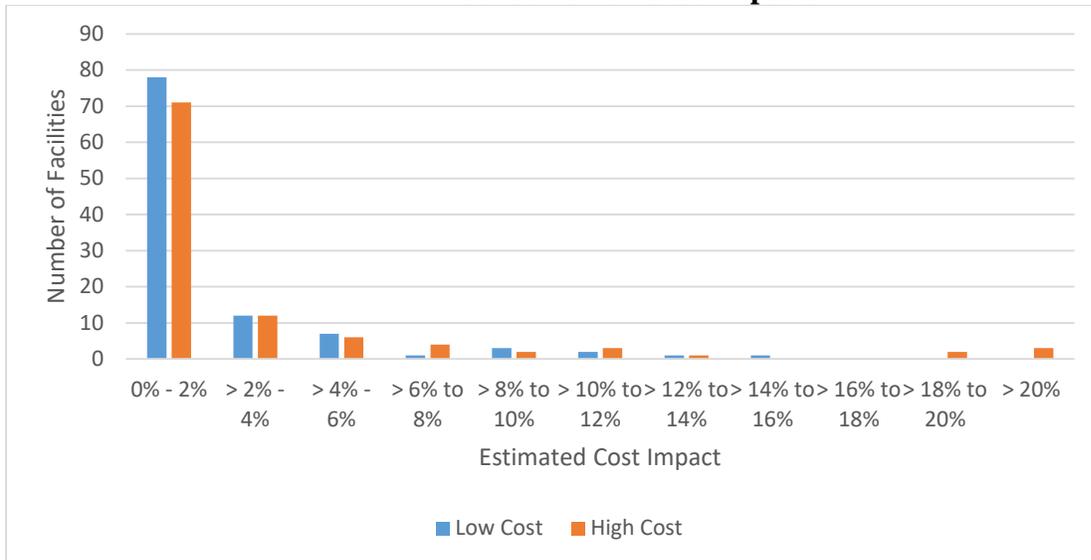
Category	Average Facility Annual Cost (Low Cost Scenario - High Cost scenario)	Range of Facility Annual Cost (Min - Max)	Average Cost Impacts (Low Cost scenario - High Cost Scenario)
Anodizing (Small)	\$44,000 - \$65,000	\$43,000 - \$66,000	1.6% - 2.5%
Anodizing (Medium)	\$55,000 - \$90,000	\$5,000 - \$97,000	0.8% - 1.4%
Decorative (Small)	\$12,000 - \$26,000	\$12,000 - \$26,000	3.4% - 7.4%
Decorative (Medium)	\$16,000 - \$24,000	\$16,000 - \$24,000	1.6% - 2.4%
Decorative (Large)	\$3,000 - \$3,000	\$3,000 - \$3,000	0.4% - 0.4%
Decorative (Other)	\$3,000 - \$3,000	\$3,000 - \$3,000	3% - 3.1%
Hard (Small)	\$2,000 - \$4,000	\$1,000 - \$4,000	0.1% - 0.3%
Hard (Medium)	\$7,000 - \$7,000	\$6,000 - \$9,000	0.4% - 0.4%
Hard (Large)	\$22,000 - \$30,000	\$22,000 - \$30,000	1.9% - 2.7%
Trivalent (Other)	\$0 - \$0	\$0 - \$0	0% - 0%
Total	\$22,000 - \$36,000	\$0 - \$97,000	1.8% - 3.3%

¹⁷ A student's t-test was used to test the hypothesis that the sample average revenue per employee was different from that of the Economic Census. The result of the test was to reject the null hypothesis that the two averages were equal with $\alpha < 0.01$.

Combining these cost data with the revenue data from Table 7, the facility based cost impacts are estimated. The cost impacts for affected facilities are on average 1.8% for the low cost scenario and 3.3% for the high cost scenario. The Anodizing (Medium) category has average cost impacts that range from 0.8% to 1.4%, while the Decorative (Small) category has average cost impacts that range from 3.4% to 7.4%.

These facility-specific cost impacts are provided here for additional information, as requested by stakeholders, as SCAQMD does not have any threshold above which cost impacts are considered significant. Figure 2 illustrates the distribution of cost impacts for affected facilities. It is important to note that there greater amount of uncertainty associated with the estimate for any individual facility than there is for the average impact shown in Table 9. Figure 2 below illustrates the majority of facilities in both scenarios are estimated to have cost impacts of 0% to 2%.

**Figure 2:
Distribution of Cost Impacts**



While the facility-based analysis provides further information about the cost impacts to individual facilities, it cannot provide information about how these costs may be passed through to downstream industries and other end-users. It is likely that if a large portion of facilities in this industry are incurring compliance costs, it will have an effect on prices throughout the supply-chain. The extent to which these costs are passed through and have impacts on the regional economy is discussed in the next section of this report.

Staff has added a provision that the Executive Officer, in consultation with CARB, may approve an alternative to a wetting agent chemical fume suppressant that is as equally effective as a certified chemical fume suppressant pursuant to paragraph (1)(2) of PAR 1469. This approach will allow facilities to use an alternative to a wetting agent chemical fume suppressant if emissions testing conducted by SCAQMD demonstrates that the alternative is as equally effective as a certified wetting agent chemical fume suppressant. Additionally, the owner or operator of a facility that opts to use an alternative to a wetting agent chemical fume suppressant will be required to comply with conditions that are specified during the certification process.

The alternative to a wetting agent chemical fume suppressant would be available to only the smallest plating facilities that are currently allowed to use chemical fume suppressants. This approach will provide a cost savings given that SCAQMD staff will conduct the necessary emissions testing. Similar to the use of certified chemical fume suppressants, no further emissions testing would be required if the operator complies with the conditions of the approval for the alternative.

The socioeconomic impact analysis conservatively assumes that if chemical fume suppressants are not certified, the owner or operators of facilities subject to PAR 1469 will install an add-on pollution control technology such as HEPA filtration. Recognizing the potential financial impact to smaller facilities, the adoption resolution for PAR 1469 will include a commitment that staff will seek funding to help offset the cost of add-on pollution controls if non-PFOS chemical fume suppressants cannot be certified. If an alternative to a wetting agent chemical fume suppressant can be used for these smaller plating facilities, this would eliminate source testing costs and possibly allow use of another air pollution control technology that has lower capital and operating costs.

➤ **Conservative Nature of Cost Assumptions**

The cost assumptions used in this analysis are conservative and may have overestimated the actual costs of compliance with PAR 1469, particularly for the high cost scenario. Approximately 75% of the total cost associated with PAR 1469 is associated with the number of new APC systems assumed to be required for Tier III Tanks. Capital costs and O&M costs include electricity, and permitting and source testing costs. However, the actual costs associated with PAR 1469 compliance may be less than assumed for the following reasons:

1. The number of Tier III tanks is fewer than estimated.
 - a. Some Tier III Tanks could be classified as Tier II Tanks if they are operated within the temperature and tank bath concentrations defined in PAR 1469 Appendix 10. Controls for Tier II Tanks are less expensive than for Tier III Tanks, for example, the use of a tank cover for a Tier II Tank is far less expensive than the installation, operation, permitting, and source test associated with a Tier III Tank requiring an APC system.
 - b. Many of the stripping and electro-polishing tanks that are currently assumed to be Tier III Tanks would be regulated as a Tier I or Tier II Tank under PAR 1469 if the tank bath is operated at a hexavalent chromium concentration below 1,000 ppm (Tier I Tank) or below the temperature and concentration (Tier II Tank). SCAQMD staff has tested stripping and electro-polishing tanks and found that they can operate below the requirements of a Tier III tank. An owner or operator may, for example, convert to a chemical stripping process or change the tank bath frequently enough to ensure the concentration stays below 1,000 ppm.
2. Under the high-cost scenario, it is assumed that most tanks will require an APC system sized to control emissions from that individual tank. This is a conservative assumption as staff believes there are many opportunities for a plating or anodizing facility to realize savings by venting multiple tanks to a common APC system, moving tanks that are not currently located

in proximity to each other and venting to a common APC system or venting an existing tank into an existing APC system, where capacity of that system allows.

JOBS AND OTHER SOCIOECONOMIC IMPACTS

The REMI model (PI+ v2.1) was used to assess the total socioeconomic impacts of a policy change (i.e., the proposed amended rule). The model links the economic activities in the counties of Los Angeles, Orange, Riverside, and San Bernardino, and for each county, it is comprised of five interrelated blocks: (1) output and demand, (2) labor and capital, (3) population and labor force, (4) wages, prices and costs, and (5) market shares.¹⁸

The analysis is performed relative to a baseline (“business as usual”) where PAR 1469 would not be implemented. PAR 1469 would create a policy scenario under which the affected facilities would incur an average annual compliance cost totaling \$2.64 to \$4.30 million to comply with proposed requirements. Direct effects of PAR 1469 have to be estimated and used as inputs to the REMI model in order for the model to assess secondary and induced impacts for all the actors in the four-county economy on an annual basis and across a user-defined horizon (2019 to 2035). Direct effects of PAR 1469 include additional costs to the affected entities and additional sales by local vendors of equipment, devices, or services that would meet the proposed requirements. While compliance expenditures may increase the cost of doing business for affected facilities, the purchase of additional APCs and HEPA filters combined with spending on operating and maintenance, and source tests, may increase sales in other sectors. Table 10 lists the industry sectors modeled in REMI that would either incur costs or benefits from the compliance expenditures.¹⁹

¹⁸ Within each county, producers are made up of 66 private non-farm industries, three government sectors, and a farm sector. Trade flows are captured between sectors as well as across the four counties and the rest of U.S. Market shares of industries are dependent upon their product prices, access to production inputs, and local infrastructure. The demographic/migration component has 160 ages/gender/race/ethnicity cohorts and captures population changes in births, deaths, and migration. (For details, please refer to REMI online documentation at <http://www.remi.com/products/pi>.)

¹⁹ Improved public health due to reduced air pollution emissions may also result in a positive effect on worker productivity and other economic factors; however, public health benefit assessment requires the modeling of air quality improvements. Therefore, it is conducted for Air Quality Management Plans and not for individual rules or rule amendments.

**Table 10:
Industries Incurring vs. Benefitting from Compliance Costs/Spending**

Source of Compliance Costs	REMI Industries Incurring Compliance Costs (3-digit NAICS)	REMI Industries Benefitting from Compliance Spending (NAICS)
APCs (HEPA Filters)	Fabricated Metal Manufacturing (332) Other Manufacturing (333-337) Wholesale and Retail Trade (423, 444) Professional, Scientific, and other Technical Services (541, 651) Repair and Maintenance (811)	<i>One-time-Capital:</i> Machinery Manufacturing (333)
APCs (HEPA) Maintenance		<i>Recurring Cost:</i> Professional, Scientific, and Technical Services (541)
Initial Source Tests		<i>One-time Cost</i> Professional, Scientific, and Technical Services (541)
Recurring Screening Tests		<i>Recurring Cost</i> Professional, Scientific, and Technical Services (541)
Permanent Total Enclosures		
Building Enclosure Modifications		<i>One-time-Capital:</i> Construction (236)
BMPs (Splash Guards, Barrier, Pressure Gauge, Magnetic Control Device)		<i>One-time-Capital:</i> Machinery Manufacturing (333)
Utilities (Electricity)		<i>Recurring Cost:</i> Utilities (221)
Permits for New APCs		<i>One-time-Capital:</i> Government (92)
Annual Permit Renewal Fee Permits		<i>Recurring Cost:</i> Public Administration (92) ²⁰
Fluid Eductors		<i>One-time-Capital:</i> Machinery Manufacturing (333)

As discussed earlier, the total average (2019 to 2035) annual compliance costs for affected facilities from PAR 1469 was estimated to range from \$2.64 million (low cost scenario) to \$4.3 million (high cost scenario) per year.

²⁰ Instead of using the default “local government spending” policy variable in REMI, staff elected to use a “custom local government spending” policy variable that it considers to more accurately reflect the SCAQMD spending portfolio. This custom policy variable has a lower proportion of local government spending going into the construction industry and proportionately allocates the difference to local government and professional services sectors. The simulation using this custom policy variable results in a prediction of a lower net job gain than would have been found with the default policy variable. This follows the approach taken in the Socioeconomic Assessment of the Proposed Amended Regulation III Fees from June 2017.

As presented in Tables 11 and 12, PAR 1469 is expected to result in approximately 37 to 63 to jobs forgone annually, on average between 2019 and 2035, when a low cost scenario and high cost scenario are assumed. The projected jobs loss impacts represent about 0.001 % of the total employment in the four-county region. In 2019, under both scenarios, a few additional jobs could be created in the overall economy. Job gains in the sector of manufacturing (NAICS 31-33) are due to purchase of various types of control equipment by the affected facilities (as presented in Tables 11 and 12).

The manufacturing sector (NAICS 31-33), which is projected to bear most of the estimated total compliance costs would have about 2 to 12 jobs forgone on average annually. The remainder of the projected reduction in employment would be across all major sectors of the economy from secondary and induced impacts of PAR 1469, such as the additional costs of doing business by the affected supply-chain businesses.

Although the manufacturing sector would bear the majority of the estimated total compliance costs of PAR 1469, the industry job impact is projected to be relatively small (annual average of 2 to 12 jobs foregone between 2019 and 2035). This is because other businesses in the manufacturing sector, specifically in the machinery manufacturing industry, are expected to benefit from the increased sale of various types of control equipment, thus offsetting the direct effect of compliance costs incurred by other manufacturing facilities. In earlier years, job gains from the expenditures made by the affected facilities would more than offset the jobs forgone from the additional cost of doing business. Jobs foregone in the later years are due to the additional cost of doing business by affected facilities.

Table 11:
Job Impacts of PAR 1469 (High Cost Scenario)

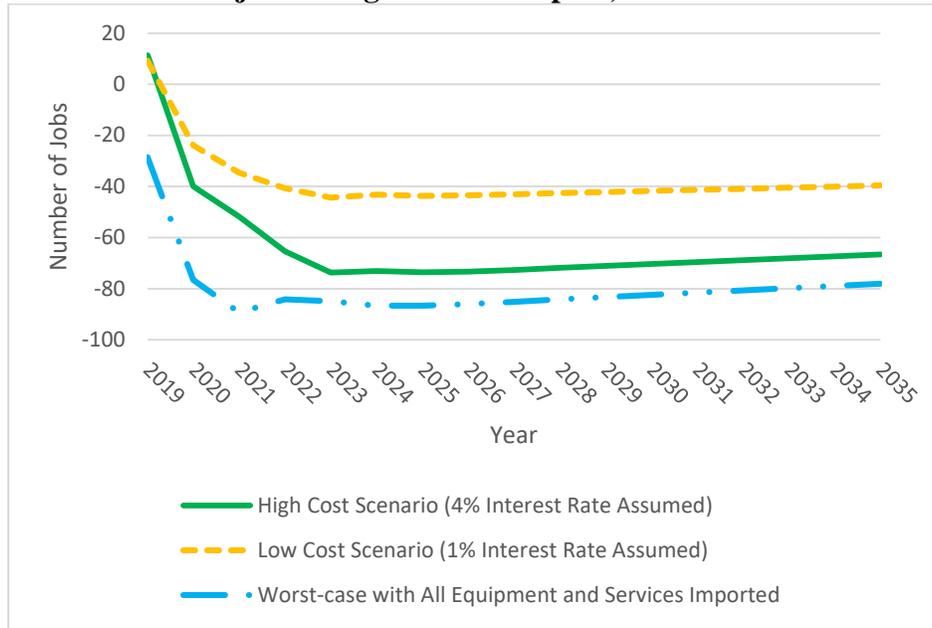
Industries (NAICS)	2019	2025	2035	Average Annual Jobs (2019-2035)	Average Annual Baseline Jobs (2019-2035)	% Change from Baseline Jobs
Construction (23)	-1	-10	-4	-7	535,349	-0.001%
Fabricated Metal (332)	0	-7	-8	-7	91,762	-0.007%
Machinery (333)	8	1	0	1	25,554	0.005%
Computer and Electronic Products (334)	0	-2	-2	-2	101,425	-0.002%
Rest of Manufacturing (31-33)	1	5	0	3	384,406	0.001%
Total Manufacturing (31-33)	8	-13	-14	-12	603,147	-0.002%
Wholesale trade (42)	1	-3	-3	-3	539,304	-0.001%
Retail trade (44-45)	-2	-9	-8	-8	1,039,963	-0.001%
Professional and Technical Services (54)	1	-2	-2	-1	923,211	0.000%
Food services and drinking places (722)	0	-4	-4	-4	708,842	-0.001%
Repair and Maintenance (811)	0	-1	-1	-1	129,259	-0.001%
Government (92)	3	-4	-5	-3	943,724	-0.001%
Other Industries	1	-27	-25	-24	5,759,046	-0.001%
Total	11	-74	-67	-63	11,181,845	-0.001%

Table 12:
Job Impacts of PAR 1469 (Low Cost Scenario)

Industries (NAICS)	2019	2025	2035	Average Annual Jobs (2019-2035)	Average Annual Baseline Jobs (2019-2035)	% Change from Baseline Jobs
Construction (23)	0	-6	-2	-4	535,349	-0.001%
Fabricated Metal (332)	0	-4	-5	0	91,762	0.000%
Machinery (333)	6	0	0	0	25,554	0.000%
Computer and Electronic Products (334)	0	-1	-1	0	101,425	0.000%
Rest of Manufacturing (31-33)	1	-3	-2	-2	384,406	-0.001%
Total Manufacturing (31-33)	6	-8	-9	-2	603,147	-0.001%
Wholesale trade (42)	0	-2	-2	-2	539,304	-0.001%
Retail trade (44-45)	-1	-5	-5	-5	1,039,963	-0.001%
Professional and Technical Services (54)	1	-1	-1	0	923,211	0.000%
Food services and drinking places (722)	0	-3	-3	-2	708,842	-0.001%
Repair and Maintenance (811)	0	-1	-1	-1	129,259	-0.001%
Government (92)	2	-2	-3	-2	943,724	-0.001%
Other Industries	1	-12	-10	-19	5,759,046	-0.001%
Total	9	-44	-40	-37	11,181,845	0.000%

Figure 3 presents a trend of job gain and losses over the 2019 to 2035 time frame. In addition, staff has analyzed an alternative scenario (worst case) where the affected facilities would not purchase any control or service from providers within SCAQMD’s jurisdiction. This scenario would result in an average of 80 jobs forgone annually.

**Figure 3:
Projected Regional Job Impact, 2019-2035**



Competitiveness

PAR 1469 would increase the cost of services rendered by the affected industries in the region. The magnitude of the impact depends on the size and diversification of, and infrastructure in a local economy as well as interactions among industries. A large, diversified, and resourceful economy would absorb the impact described above with relative ease.

Changes in production/service costs would affect prices of goods produced locally. The relative delivered price of a good is based on its production cost and the transportation cost of delivering the good to where it is consumed or used. The average price of a good at the place of use reflects prices of the good produced locally and imported elsewhere.

It is projected that the manufacturing sector, where most of the affected facilities belong, would experience a rise in its relative cost of services by 0.0013% and 0.0022% and a rise in its delivered price by 0.0008% and 0.0012% in 2025 for the low and high cost scenarios, respectively.

While these changes are relatively small, it should be noted that the delivered price change is a change in the index of all prices in the manufacturing sector. Delivered prices that a facility may charge for specific goods or services may increase at a greater rate than this, allowing incurred costs to be passed through to downstream industries and end-users.

ATTACHMENT I

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Revised Final Environmental Assessment for Proposed Amended Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations

October 2018

SCAQMD No. 02072018SW
State Clearinghouse No: 2018021048

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PREFACE

This document constitutes the Revised Final Environmental Assessment (EA) for Proposed Amended Rule (PAR) 1469 - Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations. A Draft EA was released for a 32-day public review and comment period from February 16, 2018 to March 20, 2018. Analysis of PAR 1469 in the Draft EA did not result in the identification of any environmental topic areas that would be significantly adversely affected. Two comment letters were received during the public comment period on the analysis presented in the Draft EA and responses to individual comments were included in Appendix E of the Final EA (dated August 2018) which was released as part of the Governing Board package for the September 7, 2018 public hearing which can be accessed on SCAQMD's website here: <http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2018/2018-sep7-031.pdf>. At the public hearing, the Governing Board directed staff to return to Stationary Source Committee before returning to the Governing Board in December. Staff recommended that PAR 1469 be heard by the Governing Board in November 2018 and the Stationary Source Committee concurred.

Subsequent to release of the Draft EA for public review and comment, modifications were made to PAR 1469 and some of the revisions were made in response to verbal and written comments received during the rule development process. To facilitate identification, modifications reflected in the Final EA are included as single underlined text and text removed from the document is indicated by ~~single strikethrough~~. Further, subsequent to the release of the Final EA, some modifications were made to PAR 1469 in response to comments received. To facilitate identification of these additional changes, modifications made in the Revised Final EA (dated October 2018) are included as double underlined text and text removed from the document is indicated by ~~double strikethrough~~. To avoid confusion, minor formatting changes are not shown in underline or strikethrough.

Staff has reviewed all of the modifications to PAR 1469 and concluded that none of the revisions constitute: 1) significant new information; 2) a substantial increase in the severity of an environmental impact; or 3) provide new information of substantial importance relative to the draft document. In addition, revisions to the proposed project in response to verbal or written comments would not create new, avoidable significant effects. As a result, these revisions do not require recirculation of the document pursuant to CEQA Guidelines Sections 15073.5 and 15088.5. Therefore, this document now constitutes the Revised Final EA for PAR 1469.

TABLE OF CONTENTS

	Page No.
CHAPTER 1 – PROJECT DESCRIPTION	
Introduction.....	1-1
California Environmental Quality Act.....	1-2
Project Location.....	1-4
Project Background	1-5
Project Description	1-6
 CHAPTER 2 – ENVIRONMENTAL CHECKLIST	
Introduction.....	2-1
General Information.....	2-1
Environmental Factors Potentially Affected	2-3
Determination.....	2-4
Environmental Checklist and Discussion	2-5
 APPENDICES	
Appendix A: Proposed Amended Rule 1469 – Hexavalent Chromium Emissions From Chromium Electroplating And Chromic Acid Anodizing Operations	
Appendix B: CalEEMod Files and Assumptions	
Appendix C: CEQA Impact Evaluations – Assumptions and Calculations	
Appendix D: PAR 1469 List of Affected Facilities	
<u>Appendix E: Comment Letters Received on the Draft EA and Responses to Comments</u>	

LIST OF TABLES

Table 1-1:	Tier II Hexavalent Chromium Tank Parameters.....	1-9
Table 1-2:	Tier III Hexavalent Chromium Tank Parameters	1-9
Table 1-3:	Hexavalent Chromium Emission Limits for Existing Tanks	1-17
Table 1-4:	Permit Application Submittal Schedule for Add-On Air Pollution Control Device	1-19
Table 2-1:	SCAQMD Air Quality Significance Thresholds	2-15
Table 2-2:	Sources of Potential Secondary Adverse Air Quality and GHG Impacts During Construction and Operation	2-18
Table 2-3:	Estimated APCD Installation Schedule	2-19
Table 2-4:	Peak Daily Construction Emissions During Tank Relocations	2-23
Table 2-5:	Peak Daily Construction Emissions During APCD and PTE Installations	2-24
Table 2-6:	Peak Daily Operational Emissions.....	2-26
Table 2-7:	Peak Daily Emissions in Construction and Operation Overlap Phase	2-27
Table 2-8:	GHG Emissions From 89 Affected Facilities	2-31
Table 2-9:	Total Projected Fuel Usage for Construction Activities	2-40
Table 2-10:	PAR 1469 Additional Electricity Consumption from Operation.....	2-40
Table 2-11:	Annual Total Projected Fuel Usage for Operational Activities	2-41
Table 2-12:	Projected Water Demand	2-57
Table 2-13:	Total Solid Waste Generation.....	2-72
Table 2-14:	Estimation of Vehicle Trips (Round Trips)	2-77

LIST OF FIGURES

Figure 1-1:	Southern California Air Basins	1-5
Figure 2-1:	Estimated Construction Days and Schedule by Different Rule Requirements And Tank Types presented in the Draft EA	2-21
Figure 2-2:	Revised Estimated Construction Days and Schedule by Different Rule Requirements And Tank Types as presented in the Final EA	2-21

CHAPTER 1

PROJECT DESCRIPTION

Introduction

California Environmental Quality Act

Project Location

Project Background

Project Description

INTRODUCTION

The California Legislature created the South Coast Air Quality Management District (SCAQMD or District) in 1977¹ as the agency responsible for developing and enforcing air pollution control rules and regulations in the South Coast Air Basin (Basin) and portions of the Salton Sea Air Basin (SSAB) and Mojave Desert Air Basin (MDAB). By statute, SCAQMD is required to adopt an air quality management plan (AQMP) demonstrating compliance with all federal and state ambient air quality standards for the District². Furthermore, SCAQMD must adopt rules and regulations that carry out the AQMP³. The AQMP is a regional blueprint for how SCAQMD will achieve air quality standards and healthful air and the 2016 AQMP⁴ contains multiple goals promoting reductions of criteria air pollutants, greenhouse gases, and toxics. In particular, the 2016 AQMP includes control measure TXM-02: Control of Toxic Metal Particulate Emissions from Plating and Anodizing Operations, which identifies Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid and Anodizing Operations.

Prior to the adoption of Rule 1469, chromium electroplating (hard and decorative) and chromic acid anodizing processes were regulated by Rule 1169 – Hexavalent Chromium – Chrome Plating and Chromic Acid Anodizing which was adopted on June, 3, 1988. However, on October 9, 1998, Rule 1169 was repealed and the provisions were adopted ~~instead~~ in Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations, which is part of Regulation XIV – Toxics and Other Non-Criteria Pollutants.

Ambient monitoring was conducted near several Rule 1469 facilities, and this data, combined with sampling data and emissions testing indicated that the application of heat and/or air sparging⁵ can cause hexavalent chromium emissions from ~~the tanks~~ depending on the concentration of hexavalent chromium in the a tank. Since these activities were not previously known to be sources of hexavalent chromium emissions, PAR 1469 now addresses these tanks and includes requirements to help minimize the release of fugitive emissions from these operations. These requirements include ~~such as~~ building enclosures, best management practices, and housekeeping provisions. PAR 1469 also has additional provisions to ensure continuous proper operation of point source air pollution control equipment and contingency provisions to add air pollution control equipment for a building enclosure for any facility that has repeated non-compliance with the point source emission requirements.

¹ The Lewis-Presley Air Quality Management Act, 1976 Cal. Stats., ch. 324 (codified at Health and Safety Code Section 40400-40540).

² Health and Safety Code Section 40460(a).

³ Health and Safety Code Section 40440(a).

⁴ SCAQMD, 2016 Air Quality Management Plan. <http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/final-2016-aqmp/final2016aqmp.pdf>

⁵ Air sparging is solution mixing by dispersing air into the tank solution to create a homogeneous solution.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

The California Environmental Quality Act (CEQA), California Public Resources Code Section 21000 *et seq.*, requires environmental impacts of proposed projects to be evaluated and feasible methods to reduce, avoid or eliminate significant adverse impacts of these projects to be identified and implemented. The lead agency is the “public agency that has the principal responsibility for carrying out or approving a project that may have a significant effect upon the environment” (Public Resources Code Section 21067). Since PAR 1469 is a SCAQMD-proposed amended rule, SCAQMD has the primary responsibility for supervising or approving the entire project as a whole and is the most appropriate public agency to act as lead agency (CEQA Guidelines⁶ Section 15051(b)).

CEQA requires that all potential adverse environmental impacts of proposed projects be evaluated and that methods to reduce or avoid identified significant adverse environmental impacts of these projects be implemented if feasible. The purpose of the CEQA process is to inform the lead agency, responsible agencies, decision makers, and the general public of potential adverse environmental impacts that could result from implementing PAR 1469 and to identify feasible mitigation measures or alternatives, when an impact is significant.

Public Resources Code Section 21080.5 allows public agencies with regulatory programs to prepare a plan or other written documents in lieu of an environmental impact report once the Secretary of the Resources Agency has certified the regulatory program. SCAQMD’s regulatory program was certified by the Secretary of Resources Agency on March 1, 1989, and has been adopted as SCAQMD Rule 110 – Rule Adoption Procedures to Assure Protection and Enhancement of the Environment.

PAR 1469 has been crafted to further reduce emissions of hexavalent chromium from the facilities and tanks that were not previously known to be sources of hexavalent chromium emissions. PAR 1469 and has requirements to help minimize the release of fugitive emissions from these operations such as building enclosures, best management practices, and housekeeping provisions. Because PAR 1469 requires discretionary approval by a public agency, it is a “project” as defined by CEQA⁷. PAR 1469 (the proposed project) will reduce emissions of hexavalent chromium and will provide an overall environmental benefit to air quality. However, SCAQMD’s review of the proposed project also shows that implementation of PAR 1469 may create secondary adverse effects on the environment either directly or indirectly. SCAQMD’s review of these secondary adverse effects shows that PAR 1469 would not have any significant adverse effects on the environment. Thus, the type of CEQA document appropriate for the proposed project is an Environmental Assessment (EA). The EA is a substitute CEQA document, prepared in lieu of a Negative Declaration (CEQA Guidelines Section 15252), pursuant to SCAQMD’s Certified Regulatory Program (CEQA Guidelines Section 15251(l) and SCAQMD Rule 110). The EA is also a public disclosure document intended to: 1) provide the lead agency, responsible agencies, decision makers and the general public with information on the environmental impacts of the proposed project; and, 2) be used as a tool by decision makers to facilitate decision making on the proposed project.

⁶ The CEQA Guidelines are codified at Title 14 California Code of Regulations Section 15000 *et seq.*

⁷ CEQA Guidelines Section 15378

Thus, SCAQMD, as lead agency for the proposed project, prepared a Draft EA pursuant to its Certified Regulatory Program. The Draft EA includes a project description in Chapter 1 and an Environmental Checklist in Chapter 2. The Environmental Checklist provides a standard tool to identify and evaluate a project's adverse environmental impacts and the analysis concluded that no significant adverse impacts would be expected to occur if PAR 1469 is implemented. Because PAR 1469 will have no statewide, regional or areawide significance, no CEQA scoping meeting is required to be held pursuant to Public Resources Code Section 21083.9(a)(2). Further, pursuant to CEQA Guidelines Section 15252, since no significant adverse impacts were identified, no alternatives or mitigation measures are required.

The Draft EA ~~was is being~~ released for a 32-day public review and comment period from February 16, 2018 to March 20, 2018 and two comment letters were received from the public regarding the analysis in the Draft EA. The ~~All~~ Any comments letters received during the public comment period on the analysis presented in this Draft EA and responses to individual comments were included in Appendix E of the Final EA (dated August 2018) ~~have will been responded to and are included in Appendix E to this Final EA~~ which was released as part of the Governing Board package for the September 7, 2018 public hearing. The August 2018 Final EA can be accessed from SCAQMD's website here: <http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2018/2018-sep7-031.pdf>. At the public hearing, the Governing Board directed staff to return to Stationary Source Committee before returning to the Governing Board in December. At the Stationary Source Committee meeting, staff recommended that PAR 1469 be heard by the Governing Board in November 2018.

Subsequent to the release of the Draft EA for public review and comment, modifications were made to PAR 1469, some of which were made in response to verbal and written comments received during the rule development process. The following modifications were included in the Final EA: minor changes for rule clarification, including additions of and revisions to definitions and the reorganization of various components throughout the rule. To facilitate identification, additions to the Final EA were included as single underlined text and deletions were indicated by single strikethrough. To avoid confusion, minor formatting changes were not shown in underline or strikethrough.

Further, subsequent to the release of the Final EA, two modifications were made to PAR 1469 in response to comments received. Paragraph (e)(3) was modified to increase the the distance of a sensitive receptor relative to the building enclosure openings facing the sensitive receptor from 100 feet to 1,000 feet and a provision was added to Appendix 10 that does not require add-on pollution control devices for small, low-use tanks that meet specific conditions to ensure these tanks will meet the same maximum potential emission limits as Tier III tanks with add-on pollution control devices. To facilitate the identification of this additional change, additions in the Revised Final EA are included as double underlined text and deletions are indicated by ~~double~~ strikethrough.

SCAQMD staff reviewed all of the modifications to PAR 1469 and concluded that none of the modifications constitute: 1) significant new information; or 2) a substantial increase in the severity of an environmental impact; 3) or provide new information of substantial importance relative to the draft document. In addition, the Draft EA, the Final EA, and this Revised Final EA, all concluded no significant adverse environmental impacts and the revisions to PAR 1469 in response

to verbal or written comments would not create new, avoidable significant effects. As a result, these revisions do not require recirculation of the Draft EA pursuant to CEQA Guidelines Sections 15073.5 and 15088.5. Thus, the Draft Final EA has been revised to reflect the aforementioned modifications such that it is now the Revised Final EA.

Prior to making a decision on the adoption of PAR 1469, the SCAQMD Governing Board must review and certify the Revised Final EA, including responses to comments, as providing adequate information on the potential adverse environmental impacts that may occur as a result of adopting PAR 1469.

PROJECT LOCATION

Rule 1469 currently applies to all chromium electroplating and chromic acid anodizing facilities located throughout SCAQMD's jurisdiction. SCAQMD staff has identified 115 facilities that conduct decorative or hard chromium electroplating or chromic acid anodizing operations that would be subject to PAR 1469. Of the 115 affected facilities, 47 facilities conduct decorative hexavalent chromium plating, 31 facilities conduct hard hexavalent chromium plating, 31 facilities conduct chromic acid anodizing, only 4 facilities conduct trivalent chromium plating, and 2 facilities conduct both chromic acid anodizing and hard hexavalent chromium plating. The majority of the plating and anodizing facilities subject to PAR 1469 conduct hexavalent chromium plating or chromic acid anodizing. All 115 facilities are categorized using North American Industry Classification System (NAICS) code and summarizes in Appendix D of this Revised Final Draft EA. Appendix D also contains the list of affected facilities and their locations within SCAQMD's jurisdiction.

The SCAQMD has jurisdiction over an area of approximately 10,743 square miles, consisting of the four-county Basin (Orange County and the non-desert portions of Los Angeles, Riverside and San Bernardino counties), and the Riverside County portions of SSAB and MDAB. The Basin, which is a subarea of SCAQMD's jurisdiction, is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto mountains to the north and east. It includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. The Riverside County portion of the SSAB is bounded by the San Jacinto Mountains in the west and spans eastward up to the Palo Verde Valley. A federal nonattainment area (known as the Coachella Valley Planning Area) is a subregion of Riverside County and the SSAB that is bounded by the San Jacinto Mountains to the west and the eastern boundary of the Coachella Valley to the east (see Figure 1-1).

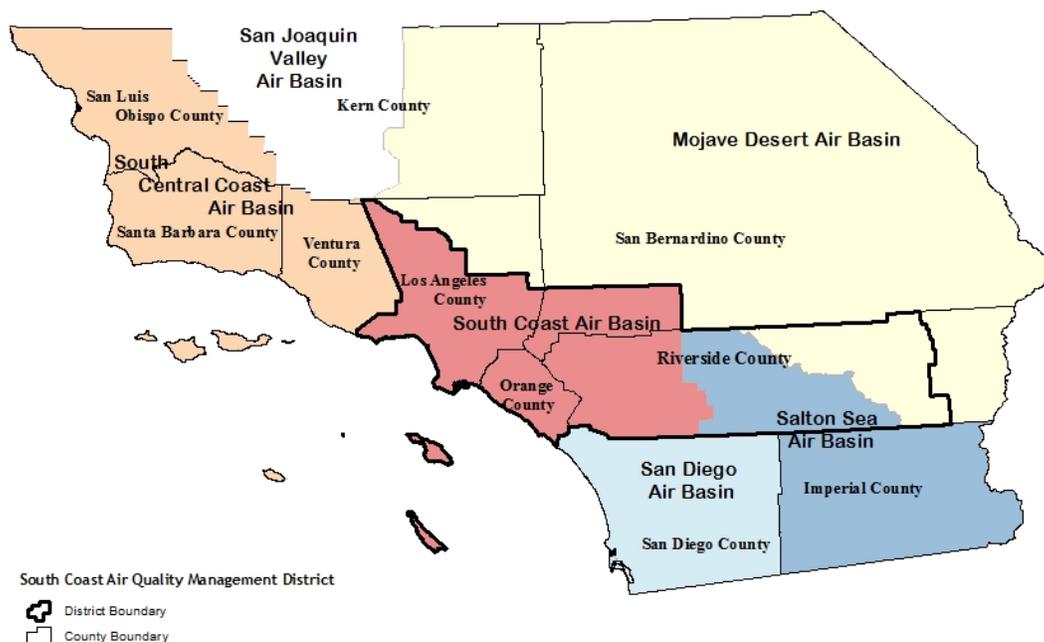


Figure 1-1
Southern California Air Basins

PROJECT BACKGROUND

Prior to the adoption of Rule 1469, chromium electroplating (hard and decorative) and chromic acid anodizing processes were originally regulated by Rule 1169 which was first adopted on June 3, 1988 to reduce hexavalent chromium emissions from these operations. However, on October 9, 1998, Rule 1169 was repealed and provisions were adopted instead in Rule 1469 which is part of Regulation XIV that focuses on reducing emissions of various types of toxics and non-criteria pollutants. In addition to facilities that perform chromium electroplating or chromic acid anodizing operations, Rule 1469 also regulates other activities that are generally associated with chromium electroplating and chromic acid anodizing operations.

In 2015, SCAQMD staff initiated rulemaking for PAR 1469 as a result of data collected from conducting air monitoring and sampling near a chromic acid anodizing facility located in Newport Beach in Orange County. SCAQMD staff had been conducting air monitoring near the facility since 2009 and in 2012 and 2013, levels of hexavalent chromium increased. These increases triggered a series of further evaluations which identified sources within the facility as having elevated levels of hexavalent chromium emissions. As SCAQMD staff continued to conduct additional monitoring and sampling, and engineering evaluations, the following conditions were identified as contributing to the elevated hexavalent chromium levels: 1) cross-drafts in the building that housed the chromic acid anodizing process allowed emissions to flow out of the building and interfered with the collection efficiency of the air pollution control equipment; and 2) high hexavalent chromium emissions were detected from a process tank, a heated sodium dichromate seal tank, that was not currently regulated under Rule 1469. SCAQMD and the facility entered into a stipulated Order for Abatement requiring the facility to cease operating their tanks

~~containing chromium solutions shut-down~~ when ambient monitors detect a rolling average exceeding a specified level of hexavalent chromium. As a result, the facility implemented changes to address their hexavalent chromium emissions. In particular, additional air pollution control equipment was installed on their chromic acid anodizing process line (including the heated sodium dichromate seal tank). Also, the facility constructed a building enclosure with negative air that was vented to air pollution control equipment. After these key improvements were implemented, the average annual concentrations of hexavalent chromium dropped steadily from 2013 to 2016. However, average emissions in 2017 slightly increased above previous years, to just below 0.4 nanograms per cubic meter (ng/m³). This increase in hexavalent chromium emissions may have occurred as a result of construction work involving concrete demolition and removal of the rubble from the facility.

In 2015, SCAQMD rules staff began visiting other Rule 1469 facilities to get a better understanding of current operating conditions, to observe the different types of building enclosures and housekeeping practices, and to evaluate other process tanks that can also be sources of hexavalent chromium emissions similar to the heated sodium dichromate seal tank. About the same time as the rule development process for PAR 1469, SCAQMD staff was separately conducting air monitoring in the city of Paramount to investigate potential sources of hexavalent chromium near a metal forging facility. In October 2016, SCAQMD expanded its monitoring network in Paramount and began monitoring near a chromic acid anodizing facility. Initial results of hexavalent chromium emissions were measured at 26 ng/m³ near that facility. Additional monitoring and sampling were conducted and as was observed with the facility, a heated sodium dichromate seal tank combined with cross-drafts allowing emissions to flow directly out of the facility's building were some of the sources that contributed to the high measurements of hexavalent chromium.

The combination of data from conducting ambient monitoring, sampling, and emissions testing indicated that the application of heat and/or air sparging can cause hexavalent chromium emissions from the tank and emissions will increase as the concentration of hexavalent chromium in the tank and the temperature increases. Since these activities were not previously known to be sources of hexavalent chromium emissions, PAR 1469 now addresses these tanks and includes requirements to help minimize the release of fugitive emissions from these operations such as building enclosures, best management practices, and housekeeping provisions. PAR 1469 also has provisions to ensure continuous proper operation of point source air pollution control equipment and contingency provisions to add air pollution control equipment for a building enclosure for any facility that has repeated non-compliance of the point source emission requirements.

PROJECT DESCRIPTION

The purpose of PAR 1469 is to further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations. PAR 1469 proposes new requirements for hexavalent chromium-~~containing~~ tanks, such as heated sodium dichromate seal tanks, that are currently not regulated under Rule 1469. The proposal requires the installation of air pollution control equipment for hexavalent chromium-~~containing~~ tanks that have the potential to emit hexavalent chromium. In addition, PAR 1469 includes requirements to conduct periodic source testing, to conduct parameter monitoring of air pollution control equipment, to operate all hexavalent chromium-~~containing~~ tanks in building enclosures, and to employ additional

housekeeping and best management practices for all hexavalent chromium-containing tanks. Proposed requirements include triggered provisions for installing a permanent total enclosure vented to air pollution control equipment in the event of non-compliance with specific source testing or monitoring requirements. PAR 1469 also revises existing requirements to reduce surface tension limits that prohibit the use of chemical fume suppressants (CFS) that contain perfluorooctane sulfonic acid in order to be consistent with the United States Environmental Protection Agency (U.S. EPA) National Emission Standards for Hazardous Air Pollutants (NESHAP)⁸ for Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks. SCAQMD staff is incorporating provisions to encourage use of alternative plating and anodizing techniques that minimize or eliminate the use of hexavalent chromium and including provisions for phasing out the use of a revised certification process by SCAQMD and the California Air Resources Board (CARB) for certain chemicals that are used in CFS that have toxicity concerns.

The following is a detailed summary of the key elements contained in PAR 1469. A draft of PAR 1469 can be found in Appendix A.

Purpose – subdivision (a)

New subdivision (a) has been added to clarify that PAR 1469 is designed to reduce hexavalent chromium emissions from facilities that perform chromium electroplating or chromic acid anodizing operations, and other activities that are generally associated with chromium electroplating and chromic acid anodizing operations.

Applicability – subdivision (b)

Subdivision (b) has been revised to clarify that PAR 1469 applies to the owner or operator of any facility performing chromium electroplating or chromic acid anodizing by removing references to SCAQMD Rules 1401 and 1401.1 and chromium electroplating/chromic acid anodizing kits.

Definitions – subdivision (c)

Subdivision (c) removes or modifies existing definitions and adds new definitions of terms used throughout PAR 1469:

- ADD-ON AIR POLLUTION CONTROL DEVICE (modified)
- ADD-ON NON-VENTILATED AIR POLLUTION CONTROL DEVICE (new)
- AIR POLLUTION CONTROL TECHNIQUE (modified)
- APPROVED CLEANING METHOD (new)
- ASSOCIATED PROCESS TANK (new)
- BARRIER (new)
- BREAKDOWN (removed)
- BUILDING ENCLOSURE (new)
- ~~EARLY EDUCATION CENTER (new)~~
- ENCLOSURE OPENING (new)
- ~~FREEBOARD HEIGHT (new)~~
- FUGITIVE EMISSIONS (modified)
- HIGH EFFICIENCY PARTICULATE ARRESTORS (HEPA) (modified)

⁸ National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR 63 Subpart N.
<https://www.epa.gov/stationary-sources-air-pollution/national-emission-standards-hazardous-air-pollutants-neshap-9>

- ~~HIGH EFFICIENCY PARTICULATE ARRESTOR (HEPA) VACUUM~~ (new)
- LOW PRESSURE SPRAY NOZZLE (new)
- MECHANICAL FUME SUPPRESSANT (modified)
- METAL REMOVAL FLUID (new)
- PERFLUROOCTANE SULFONIC ACID (PFOS) BASED FUME SUPPRESSANT (new)
- PERMANENT TOTAL ENCLOSURE (new)
- SCHOOL (modified)
- STALAGMOMETER (modified)
- TANK PROCESS AREA (new)
- TENSIMETER (modified)
- TIER I HEXAVALENT CHROMIUM-CONTAINING TANK (new)
- TIER II HEXAVALENT CHROMIUM TANK (new)
- TIER III HEXAVALENT CHROMIUM TANK (new)
- WEEKLY (modified)

The new definitions for Tier I, ~~and Tier II,~~ and Tier III Hexavalent Chromium-Containing Tanks are necessary as many components of PAR 1469 are designed to address previously unregulated tanks that have the potential for hexavalent chromium emissions.

As explained previously, SCAQMD staff sampled a number of tanks and the results showed that some tanks contained high levels of hexavalent chromium even though they are not currently regulated by Rule 1469. ~~To be consistent with the federal NESHAP for Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks,~~ SCAQMD staff selected a limit of 1,000 ppm hexavalent chromium because it is consistent with the federal NESHAP for Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks that are required to meet specific housekeeping practices.

The definition for a Tier I tank is as follows:

- TIER I HEXAVALENT CHROMIUM-CONTAINING TANK means a tank permitted as containing a hexavalent chromium concentration of 1,000 parts per million (ppm) or greater and is not a ~~TIER II HEXAVALENT CHROMIUM CONTAINING TANK~~ Tier II or Tier III Hexavalent Chromium Tank.

There is also a greater concern about any hexavalent chromium-~~containing~~ tank that also operates under heated, air sparged, or electrolytic conditions because hexavalent chromium emissions can be generated outside of the tank. In particular, high concentrations of hexavalent chromium in solution were found in heated sodium dichromate seal tanks and chrome stripping tanks.

Based on SCAQMD sampling and testing data, tanks containing any concentration of hexavalent chromium that are operated at or below 140 degrees Fahrenheit (°F) have not been shown to exhibit elevated hexavalent chromium emissions. ~~Additional sampling and testing data has demonstrated a correlation between temperature and concentration. Elevated temperatures correlated with hexavalent chromium emissions at lower concentrations. Therefore, additional criteria are applied when determining a Tier II Hexavalent Chromium Containing Tank, as outlined in the following definition:~~

- TIER II HEXAVALENT CHROMIUM-CONTAINING TANK means a tank that is operated or permitted to operate by SCAQMD within the range and a corresponding hexavalent chromium concentration containing hexavalent chromium that meets any of the following with the corresponding hexavalent chromium concentrations in specified in Table 1-1:

Table 1-1
Tier II Hexavalent Chromium-Containing Tank Parameters

Temperature (° F)	Tier II Tank Concentration (ppm)
≥ 140 to <145	≥ 5,200 to < 10,400
≥ 145 to <150	≥ 2,700 to < 5,500
≥ 150 to <155	≥ 1,400 to < 2,900
≥ 155 to <160	≥ 700 to < 1,600
≥ 160 to <165	≥ 400 to < 800
≥ 165 to <170	≥ 180 to < 400
≥170	≥ 100 to < 200

- TIER III HEXAVALENT CHROMIUM TANK means a tank that is operated or permitted to operate by the SCAQMD within the range of temperatures and corresponding hexavalent chromium concentrations specified in Table 1-2; or
 - Contains a hexavalent chromium concentration greater than 1,000 ppm, and uses air sparging as an agitation method or is electrolytic; or
 - Is a hexavalent chromium electroplating or chromic acid anodizing tank.

Table 1-2
Tier III Hexavalent Chromium-Containing Tank Parameters

Temperature (° F)	Tier III Tank Concentration (ppm)
≥ 140 to <145	≥ 10,400
≥ 145 to <150	≥ 5,500
≥ 150 to <155	≥ 2,900
≥ 155 to <160	≥ 1,600
≥ 160 to <165	≥ 800
≥ 165 to <170	≥ 400
≥170	≥ 200

**Table 1-1
Tier II Hexavalent Chromium-Containing Tank Definitions**

Tank Condition	Hexavalent Chromium Concentration
Operating temperature between 140°F-150°F	>1,500 ppm
Operating temperature between 150°F-160°F	>500 ppm
Operating temperature greater than 160°F	>100 ppm
Uses air sparging as an agitation method	>1,000 ppm
Electrolytic	>1,000 ppm

Facilities that conduct chromic acid anodizing may have some tanks that would be considered Tier II tanks based on the concentration of hexavalent chromium and air sparging being the agitation method. However, industry representatives indicated that these tanks would be converted to use mechanical agitation, such as eductors. By modifying the agitation method, the tanks would not be considered a Tier II tank and therefore not require add-on controls

Requirements – Subdivision (d)

Subdivision (d) contains the core requirements of PAR 1469. Paragraph (d)(1) has been revised to change the requirement for a separate meter to be hardwired for each hexavalent chromium electroplating or chromic acid anodizing tank instead of for each rectifier.

Paragraph (d)(2) has been revised to clarify two terms: 1) electroplating is referring to chromium electroplating; and 2) anodizing tank is referring to a chromic acid anodizing tank.

New paragraph (d)(4) has been added to require any Tier I, ~~or Tier II, or Tier III~~ Hexavalent Chromium-Containing Tank, or any associated process tank to be operated within a building enclosure beginning 90 days after the date of rule adoption. In particular, Tier I, Tier II, or Tier III Hexavalent Chromium Tanks will be required to operate within a building enclosure that meets the definition of “Building Enclosure” which is a permanent building or physical structure, or portion of a building, enclosed with a floor, walls, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, run-off), with limited openings to allow access for people, vehicles, equipment, or parts. A room within a building enclosure that is completely enclosed with a floor, walls, and a roof would also meet this definition. ~~existing before rule adoption that undergoes specific modifications to maintain a freeboard height within the range as specified in the most current edition (i.e. at the time the permit application was deemed complete by the SCAQMD) of the *Industrial Ventilation, A Manual of Recommended Practice for Design*, published by the American Conference of Governmental Industrial Hygienists. A modification under this provision includes a dimensional change to the tank. Freeboard height is the vertical distance from the tank bath surface, including liquid or foam, to the lip of the tank with parts and equipment submerged in the tank.~~

Paragraph (d)(5) has been added to require any Tier II or Tier III Hexavalent Chromium Tank to be operated within a building enclosure that meets the requirements of subdivision (e). Under this provision, a Tier I Hexavalent Chromium Tanks would not be required to operate within a building

enclosure that meets the additional requirements under subdivision (e) such as limitations on enclosure openings.

Requirements for Building Enclosures for Tier II or Tier III Hexavalent Chromium Tanks – subdivision (e)

New subdivision (e) has been added to establish requirements for operating any Tier II or Tier III Hexavalent Chromium-Containing Tanks and associated process tanks within a building enclosure that meets specific requirements under paragraphs (e)(1) through (e)(9) beginning 90 180 days after date of rule adoption. While Tier I Hexavalent Chromium Tanks are required to operate within a building enclosure, the building enclosure where a Tier I Hexavalent Chromium Tank is operated is not required to meet the additional requirements in subdivision (e) provided there is no Tier II or Tier III Hexavalent Chromium Tank tank in the same building enclosure. The following summarizes the requirements for building enclosures for Tier II and III Hexavalent Chromium Tanks. Building enclosures shall meet the following requirements:

- New paragraph (e)(1) establishes the requirements for enclosure openings that are allowed for a building enclosure. Under this paragraph, ~~the~~ combined area of all building enclosure openings, including any roof openings for passage of equipment or vents through which fugitive hexavalent chromium emissions can escape from the building enclosure, shall not exceed ~~three percent~~ 3.5% of the building enclosure envelope, which is calculated as the total surface area of the building enclosure's exterior walls, floor and horizontal projection of the roof on the ground. This requirement is based on U.S. EPA's Method 204 for Permanent Total Enclosures; however, unlike Method 204, building enclosures under PAR 1469 are not required to operate under negative air conditions. As such, even though the size allowance as required by Method 204 for openings in the building enclosure is 5%, to compensate for the absence of venting a building enclosure to an add-on air pollution control device, PAR 1469 proposes a size allowance of 3.5% instead. Information on calculations for the building enclosure envelope, including locations and dimensions of openings counted toward the ~~three percent~~ 3.5% allowance are required to be provided in the compliance status reports pursuant to paragraphs (p)(2) and (p)(3) (see description under subdivision (p)).

PAR 1469 identifies the type of methods that can be used in determining what comprises a building's opening and the amount that should be counted towards the 3.5% enclosure opening allowance. As specified in paragraph (e)(1), openings that close or use one or more of the following methods for the enclosure opening shall not be counted toward the combined area of all enclosure openings:

- ✓ Door that automatically closes;
- ✓ Overlapping plastic strip curtains;
- ✓ Vestibule;
- ✓ Airlock system; or
- ✓ Alternate method to minimize the release of fugitive emissions from the building enclosure that the owner or operator can demonstrate to the Executive Officer an equivalent or more effective method(s) to minimize the movement of air within the building enclosure. This provision allows the owner or operator to develop other low-cost methods that were not identified during the rulemaking.

- New paragraph (e)(2) establishes requirements for eliminating or minimizing cross-draft that can occur when openings at opposite ends of building enclosure are open. Under this paragraph, the owner or operator are required to ensure that any building enclosure opening that is on opposite ends of the building enclosure where air movement can pass through are not simultaneously open except during the passage of vehicles, equipment or people, not to exceed two hours, by either closing or using one or more of the methods for the enclosure opening(s) on one of the opposite ends of the building enclosure specified in subparagraphs (e)(1)(A) through (e)(1)(E). To meet this requirement, the use of a barrier, such as large piece of equipment, a wall, or any other type of barrier that restricts air movement from passing through the building enclosure would also be allowed, when one or more of the following methods are implemented:
 - ✓ ~~Automated roll-up door;~~
 - ✓ ~~Overlapping plastic strip curtain;~~
 - ✓ ~~Vestibule doors;~~
 - ✓ ~~Airlock system; or~~
 - ✓ ~~Alternative method to minimize the release of fugitive hexavalent chromium emissions from the building enclosure that the owner or operating can demonstrate to the Executive Officer as (an) equivalent or more effective method(s) to minimize the movement of air within the building enclosure.~~
- New paragraph (e)(3) establishes additional requirements for enclosure openings that are facing a sensitive receptor or school. Except for the movement of vehicles, equipment or people, this paragraph requires any building enclosure opening to be closed or minimized by using any of the methods listed under paragraph (e)(1), (or use any of the methods listed above) that directly opens towards at the nearest: 1) sensitive receptor, with the exception of a school, or early education center that is located within ~~400~~1,000 feet, as measured from the property line of the sensitive receptor, school, or early education center to the building enclosure opening; and 2) school that is located within 1,000 feet, as measured from the property line of the school or to the building enclosure opening. Further, if there are multiple sensitive receptors that are located within 1,000 feet of an enclosure opening, only the nearest enclosure opening would be required to be closed. Similarly, if there are multiple schools that are located within 1,000 feet of an enclosure opening, only the nearest enclosure opening to the school would be required to be closed. The maximum enclosure openings that would be required to be closed under this paragraph would be two.
- New paragraph (e)(4) establishes requirements for enclosure openings in a roof. Specifically, the owner or operator is required to ensure that all roof openings that are located within 15 feet from the edge of any Tier II or Tier III Hexavalent Chromium-Containing Tank are closed, except for roof openings that are used to allow access to equipment or parts, or provide intake air for a building enclosure that does not create air velocities that impact the collection efficiency of a ventilation system for an add-on air pollution control device, or roof openings that are equipped with a HEPA filter or other air pollution control device. It should be noted that the proposed definition of enclosure opening in paragraph (c)(22) does not include stacks, ducts, and openings to accommodate stacks and ducts.

- ~~New paragraph (e)(5): Prohibit operation of any device located on the roof of any building enclosure that pulls air from the building enclosure to the outdoor air unless the air is vented to an add-on air pollution control device that is fitted with HEPA filters.~~
- ~~New paragraph (e)(6): Inspect any building enclosure at least once a calendar month for breaks or deterioration that could cause or result in fugitive emissions.~~
- New paragraph (e)(7)(5) establishes requirements when there is a breach in a building enclosure that is located near a Tier II or Tier III Hexavalent Chromium tank. A breach can be a break, rupture, crack, hole, large gap in the building enclosure. Under this paragraph, the owner or operator is required to repair any breaks or deterioration breach in a building that is located within 15 feet of the edge of any Tier II or III tank that could or results in fugitive hexavalent chromium emissions from any building enclosure within 72 hours of discovery. An extension may be granted if the owner or operator can substantiate that the repair will take longer than that 72 hours and temporary measures are implemented that ensure no fugitive emissions results from a break. The provision establishes who to call and the procedures for a time extension to repair the breach, if needed.
- ~~New paragraph (e)(8): PAR 1469 requires that a building enclosure design should not conflict with any other agency's requirements, and instead should be constructed in a manner that is compliant with all agencies. This may require the owner or operator of a facility to install additional equipment or modify the existing structure. If any other agency requirements conflict, the owner or operator shall notify the Executive Officer in writing within 30 days of rule adoption to explain which SCAQMD building enclosure requirements the facility cannot comply with, and the alternatives that the facility would implement to minimize the release of fugitive emissions.~~
- New paragraph (e)(6) establishes requirements for notifying the Executive Officer and submitting a building enclosure compliance plan in the event that the owner or operator is unable to modify a building enclosure to comply with the requirements in paragraphs (e)(1) through (e)(4) because of conflicts with safety or local building requirements such as Cal-OSHA/Federal OSHA's requirements, or other municipal codes or agency requirements related directly to worker safety subject to Executive Officer approval.
- New paragraph (e)(7) establishes the procedures for the notification of approval or disapproval of and subsequent revisions to the Building Enclosure Compliance Plan submitted pursuant to paragraph (e)(6).~~New paragraph (e)(9): Under new paragraph (e)(8) ¶the owner or operator will have 90 days upon receiving approval from the Executive Officer to implement the approved alternative compliance measures. The owner or operator of a facility that implements and maintains the approved alternative compliance measures shall have met the applicable requirements specified in paragraphs (e)(1) through (e)(45).~~
- New paragraph (e)(9) proposes to allow an owner or operator that has submitted an application to install an add-on air pollution control device to control either a Tier II or Tier III Hexavalent Chromium Tank(s) to be exempt from paragraphs (e)(1) through (e)(4) until such time that the add-on air pollution control device is installed.

Housekeeping Requirements – subdivision (f)

The housekeeping requirements that were originally in paragraph (d)(4) have been moved to its own dedicated subdivision (f) and clarified to apply to chromium electroplating and chromic acid anodizing operations. Amended provisions include the following:

- Revised paragraph (f)(3) requires the use of an approved cleaning method as defined in paragraph (c)(6) for conducting cleaning. Paragraph (f)(3) also clarifies that a drip tray or other containment device can be used to capture any liquid or solid material containing hexavalent chromium.
- Revised paragraph (f)(4) clarifies that approved cleaning method should be used when cleaning surfaces within certain areas and modifies the frequency of conducting cleaning to occur weekly instead of “at least once every seven days.”~~requires the use of an approved cleaning method to clean surfaces within the enclosed storage area, open floor area, walkways around the Tier I or Tier II Hexavalent Chromium Containing Tank(s), or any surface potentially contaminated with hexavalent chromium or surfaces that potentially accumulate dust at least daily.~~
- Revised paragraph (f)(5) requires ~~that~~ containers holding chromium or chromium-containing waste material shall be kept closed at all times except when filling or emptying.
- Paragraph (f)(6) ~~requires that on each day when buffing, grinding, or polishing activities occur, the owner or operator shall clean floors within 20 feet of a buffing, grinding, or polishing workstation within one hour of the end of the last operating shift of when buffing, grinding, or polishing are conducted. The requirements of this paragraph shall not apply to owner or operators that utilize a metal removal fluid to control to buffing, grinding, or polishing operations.~~ has been added to address the cleaning requirements in the buffing, grinding, or polishing area. On each day when buffing, grinding, or polishing, the owner or operator shall clean floors within 20 feet of a buffing, grinding, or polishing workstation and any entrance/exit point within one hour of the end of the last operating shift of when buffing, grinding, or polishing are conducted. Previous requirements pertaining to establishing a physical barrier between buffing, grinding, or polishing and where chromium electroplating or chromic acid anodizing have been moved to paragraph (g)(6) in subdivision (g) – Best Management Practices. Previous requirements pertaining to compressed air cleaning have been moved to paragraph (g)(7) in subdivision (g) – Best Management Practices.
- New paragraph (f)(7) has been added to require owners or operators to remove any flooring in the tank process areas that is made of fabric or fibrous material such as carpets or rugs where hexavalent chromium materials can be trapped. Examples of acceptable flooring material are wooden floor boards and other solid material that can be cleaned and maintained.
- New paragraph (f)(8) has been added to require owners or operators to prevent the generation of fugitive emissions chromium prior to and during the cutting of roof surfaces by implementing the following requirements the installation, modification, or removal of any add-on air pollution control device:
 - Prior to being ~~disturbed~~ cut, roof surfaces shall be cleaned by using a HEPA vacuum; and
 - To minimize fugitive emissions during cutting activities, method(s) such as a temporary enclosure and/or HEPA vacuuming shall be used; and

- ~~Any and all roof surfaces that remain stained after completion of the initial roof cleaning shall be treated by encapsulation or removed through controlled demolition;~~
 - ~~All construction and demolition activities shall be conducted within a temporary total enclosure that is vented to HEPA filtration;~~
 - ~~All waste material generated by abatement, construction, or demolition shall be disposed as hazardous waste; and~~
 - ~~Notify the District at least 48 hours prior to the commencement of any work being done by calling 1-800-CUT-SMOG.~~
- New paragraph (f)(9) requires that if a HEPA vacuum is used to comply with housekeeping provisions of subdivision (f), that the HEPA filter is free of tears, fractures, holes or other types of damage, and securely latched and properly situated in the vacuum to prevent air leakage from the filtration system.

Previous requirements pertaining to establishing a physical barrier between buffing, grinding, or polishing and where chromium electroplating or chromic acid anodizing have been moved from subparagraph (c)(4)(F) to subdivision (g) - Best Management Practices. Previous requirements pertaining to compressed air cleaning in subparagraph (c)(4)(G) have also been moved to subdivision (g) - Best Management Practices.

Best Management Practices – subdivision (g)

New subdivision (g) has been added which establishes Best Management Practices that prescribe how an owner or operator shall conduct chromium electroplating or chromic acid anodizing and other ancillary operations to prevent the release or generation of fugitive emissions.

Revised paragraph (g)(1) clarifies the requirements for minimizing drag-out for automated and non-automated lines. ~~has been expanded to minimize the dragout occurring outside of tanks conducting chromium electroplating or chromic acid anodizing to include Tier I and Tier II Hexavalent Chromium Containing Tanks.~~ For facilities with automated lines, containment equipment other than drip trays may be utilized to prevent hexavalent chromium-containing liquid from falling through the space between tanks. Additional requirements additionally to clean the residue on the drip tray or other equipment devices used for containment are also included. For facilities without automated lines, paragraph (g)(1) clarifies that parts need to be handled in a manner that does not cause hexavalent chromium-containing liquid to ~~drip drop on the floor~~ outside of the tank unless the liquid is captured by a drip tray or other containment device.

New paragraph (g)(2) ~~prohibits owners or operators from spray rinsing parts or equipment that were previously in a Tier II or Tier III Hexavalent Chromium Tank, unless the part or equipment are fully lowered inside a tank where the overspray and all of the liquid is captured inside the tank.~~ The requirements in paragraph (g)(2) will go into effect 90 days after date of adoption, ~~adds requirements for the spray rinse of parts or equipment. Owners or operators may spray rinse the part or equipment if they are fully lowered inside a tank where the overspray and all of the liquid is captured inside the tank.~~ If an owner or operator chooses to spray rinse above a process tank, they must ensure that any hexavalent chromium-containing liquid is captured and returned to the tank, and:

- Install splash guard(s) at the tank that is free of holes, tears or openings. Splash guards shall be cleaned daily, such that there is no accumulation of visible dust or residue potentially contaminated with hexavalent chromium; or
- For tanks located within a process line utilizing an overhead crane system that would be restricted by the installation of splash guards, a low pressure spray nozzle may be used instead and operated in a manner that water flows off of the part or equipment.

Effective 60 days after the date of adoption, new paragraph (g)(3) requires owners or operators to clearly label each tank within the tank process area with a tank number or other identifier, bath contents, maximum concentration (ppm) of hexavalent chromium, operating temperature range, and any agitation method used, and designation of whether it is a Tier I, Tier II, or Tier III Hexavalent Chromium Tank. Tank labeling will help operators as well as SCAQMD inspectors identify Tier I, Tier II, and Tier III Hexavalent Chromium Tanks and to ensure the appropriate operating conditions are maintained.

~~New paragraph (g)(4) requires that the owner or operator of a Tier II Hexavalent Chromium-Containing Tank that is subject to paragraph (d)(4), shall make inch markings on the interior of the tank, including markings to indicate the acceptable freeboard height range as specified in the most current edition (i.e. at the time the permit application was deemed complete by the SCAQMD) of the *Industrial Ventilation, A Manual of Recommended Practice for Design*, published by the American Conference of Governmental Industrial Hygienists from the lip of the tank.~~

Effective 90 days after the date of adoption, new Paragraph (g)(54) requires all buffing, grinding, and polishing operations to take place within a building enclosure.

New paragraph (g)(5) requires the relocation of existing requirement to have a barrier that separates the buffing, grinding, or polishing area within a facility from the chromium electroplating or chromic acid anodizing operation. ~~relocated from the housekeeping requirements that were originally in paragraph (d)(4) and requires all buffing, grinding, and polishing operations to take place within a building enclosure.~~

~~Paragraph (g)(6) was relocated from the housekeeping requirements that were originally in paragraph (d)(4) and requires a barrier to be installed that separates the buffing, grinding, or polishing area within a facility from the chromium electroplating or chromic acid anodizing operation.~~

New paragraph (g)(76) prohibits compressed air cleaning or drying within 15 feet of all Tier II or Tier III Hexavalent Chromium Tank(s) ~~any chromium electroplating or chromic acid anodizing operation~~ unless a barrier separates those areas from compressed air cleaning or drying operations, or the compressed air cleaning or drying is conducted in a permanent total enclosure. A tank wall may function as a barrier as long as parts are compressed air cleaned or dried below the lip of the tank.

Add-On Air Pollution Control Devices and Emission Standards – subdivision (h)

PAR 1469 creates a new subdivision (h) which contains requirements regarding add-on air pollution control devices and emission standards.

Paragraph (h)(1) contains an existing prohibition for removing air pollution control equipment unless it is replaced with an air pollution control technique that meets the requirements in PAR 1469, Table 1 – Hexavalent Chromium Emission Limits for Hexavalent Hard and Decorative Chromium Electroplating and Chromic Acid Anodizing Tanks.

Subparagraph (h)(2)(A) now consolidates the emission standards and control requirements for existing, modified, and new hexavalent hard and decorative chromium electroplating and chromic acid anodizing facilities, which has been reproduced in Table 1-3. Additionally, all effective dates for notification to the Executive Officer, emission standards, and control requirements were removed as these dates are now past and in full effect.

Table 1-3
Hexavalent Chromium Emission Limits for Existing Tanks

Facility Type	Distance to Sensitive Receptor (meters/feet)	Annual Permitted Amp-Hrs	Emission Limit (mg/amp-hr)	Required Air Pollution Control Technique
Existing Facility	$\leq 330^1$ ≤ 100	$\leq 20,000$	0.01	Use of Certified <u>Chemical Fume Suppressant</u> at or below the certified surface tension ³ . CFS. Alternatively, a facility may install an add-on air pollution control device(s) or add-on non-ventilated air pollution control device(s) that controls hexavalent chromium emissions to below 0.0015 mg/amp-hr.
Existing Facility	$\leq 330^1$ ≤ 100	$> 20,000$	0.0015 ²	Add-on air pollution control device(s) or add-on non-ventilated air pollution control device(s).
Existing Facility	$\leq 330^1$ ≥ 100	$\leq 50,000$	0.01	Use of Certified <u>Cemical Fume Suppressant</u> at or below the certified surface tension ³ . CFS. Alternatively, a facility may install an add-on air pollution control device(s) or add-on non-ventilated air pollution control device(s) that controls hexavalent chromium emissions to below 0.0015 mg/amp-hr.
Existing Facility	$\leq 330^1$ ≥ 100	$> 50,000$ and $\leq 500,000$	0.0015 ²	Use of an air pollution control technique <u>that controls hexavalent chromium. approved by the Executive Officer.</u>
Existing Facility	$\leq 330^1$ ≥ 100	$> 500,000$	0.0015 ²	Add-on air pollution control device(s) or add-on non-ventilated air pollution control device(s).
Modified Facility	Any	Any	0.0015 ²	Using an add-on air pollution control device(s), or an approved alternative method pursuant to subdivision (i), to control hexavalent chromium emissions.
New Facility	Any	Any	0.0011 ²	Using a HEPA add-on air pollution control device, or an approved alternative method pursuant to subdivision (i), to control hexavalent chromium emissions.

¹ Distance shall be measured, rounded to the nearest foot, from the edge of the chromium electroplating or chromic acid anodizing tank nearest the sensitive receptor (for facilities without add-on air pollution control devices), or from the stack or centroid of stacks (for facilities with add-on air pollution control devices), to the property line of the nearest sensitive receptor. The symbol \leq means less than or equal to. The symbol $>$ means greater than.

² As demonstrated by source test requirements under subdivision (k).

³ Alternatively, a facility may install an add-on air pollution control device(s) or add-on non-ventilated air pollution control device(s) that controls hexavalent chromium emissions to below 0.0015 mg/amp-hr as demonstrated through source test requirements under subdivision (k).

Subparagraph (h)(2)(B) retains the siting requirements for New Chromium Electroplating and Chromic Acid Anodizing Facilities.

All requirements to conduct a facility-wide screening health risk assessment have been removed in this subdivision because these assessments are currently addressed by SCAQMD's ongoing program for new source review of toxics (Rule 1401 and 1401.1) and implementation of AB 2588 (Rule 1402).

Paragraph (h)(3) applies to decorative chromium electroplating processes using a trivalent chromium bath. PAR 1469 ~~removes~~ revises the requirement to utilize a certified CFS chemical fume suppressant to remove the word "certified," as certification at the ~~federal and state level~~ is only require this of for hexavalent chromium electroplating and chromic acid anodizing operations. However, paragraph (h)(3) adds that CFS cannot contain PFOS for consistency with the NESHAP for Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks.

Emission Controls and Standards for Tier III Hexavalent Chromium-Containing Tanks

Paragraph (h)(4) adds new requirements for Tier III Hexavalent-Chromium ~~Containing~~ Tanks that are not chromium electroplating or chromic acid anodizing tanks. These tanks are required to be vented to an add-on air pollution control device or an approved alternative compliance method pursuant to subdivision (i). These tanks must comply with the following specific hexavalent chromium emission limits and must meet the following standards:

- For existing or modified facilities, 0.0015 mg/amp-hr, if any tank(s) that are vented to an air pollution control device are electrolytic; or
- For new facilities, 0.0011 mg/amp-hr, if any tank(s) that are vented to an air pollution control device are electrolytic; or
- 0.20 mg/hr, if all tanks that are vented to an add-on air pollution control device are not electrolytic and the ventilation system has a maximum exhaust rate of 5,000 cfm or less; or
- 0.004 mg/hr-ft², with the applicable surface area based on the tank surface area of all Tier III Hexavalent Chromium-~~Containing~~ Tank(s) and other tanks required to be vented to an add-on air pollution control device with a SCAQMD Permit to Operate, provided all tanks are not electrolytic, if the ventilation system has a maximum exhaust rate of greater than 5,000 cfm; or
- ~~0.004 mg/hr-ft², with the applicable surface area based on the tank surface area of all Tier II Hexavalent Chromium-Containing Tank(s) and other tanks required to be controlled by SCAQMD Permits to Operate vented to an add-on air pollution control device, if all tanks that are vented to the add-on air pollution control device are located in a permanent total enclosure.~~

For existing and new facilities with non-chromium electroplating or chromic acid anodizing Tier III tanks that are electrolytic, the emission standard is consistent with the emission limits in Table 1-3, for chromium electroplating and chromic acid anodizing tanks.

The emission limit for non-electrolytic tanks is based on review of 80 source tests conducted on existing add-on air pollution control equipment venting chromium electroplating and chromic acid

anodizing tanks. The source tests were conducted from 1999 through 2016. Of the 80 source tests, approximately 20 source tests were not used in the analysis as they either vented multiple electroplating or anodizing tanks or the source test was conducted with very high amperes that were not representative of the normal operations. The average emission rate of the tanks as found by ~~for~~ the remaining source tests was 0.18 mg/hr. Additionally, due to the fact that uncontrolled hexavalent chromium emissions from non-electrolytic tanks are typically much lower than that of electroplating and anodizing tanks, staff believes that these non-chromium electroplating or chromic acid anodizing Tier III tanks can meet an emission limit of 0.20 mg/hr.

Subparagraph (h)(4)(B) establishes the compliance schedule for submitting permit applications for add-on pollution control devices for Tier III Tanks. For Tier III Hexavalent Chromium-Containing Tanks that are in operation prior to date of rule adoption, the owner or operator shall submit a permit application to the SCAQMD for the add-on air pollution control devices based on the primary electrolytic operation conducted at the facility as specified below in Table 1-4.

Table 1-4
Permit Application Submittal Schedule for Add-On Air Pollution Control Device

Electrolytic Process at the Facility	Compliance Date for Permit Application Submittal for Add-on Air Pollution Control Device
Chromic Acid Anodizing	[180 Days after Date of Adoption]
Hard Chromium Electroplating	[365 Days after Date of Adoption]
Decorative Chromium Electroplating	[545 Days after Date of Adoption]

If a facility has multiple chromium electrolytic processes occurring, the earliest compliance date would apply to the facility.

~~The add-on air pollution control device shall be installed and operated no later than one year after a Permit to Construct is issued. A source test is required to be conducted prior to the issuance of a SCAQMD Permit to Operate the add-on air pollution controls. Also, Beginning no later than 30 days after rule adoption until the subject add-on air pollution control device is installed, the owner or operator is required to cover the subject tank no later than 30 minutes after ceasing operation of the tank. Tank covers are to be free of holes, tears, or gaps and handled in a manner that does not lead to fugitive emissions.~~

Subparagraph (h)(4)(C) establishes the compliance dates that an owner or operator a facility is required to install an add-on air pollution control device, implement an alternative compliance method or Hexavalent Chromium Phase-Out Plan to meet the hexavalent chromium emission limits specified in subparagraph (h)(4)(A). The owner or operator of a facility is required to install an add-on air pollution control device to meet the requirements under subparagraph (h)(4)(A) no later than 12 months after a Permit to Construct for the add-on air pollution control device has been issued by the Executive Officer. If an owner or operator elects to meet the requirements of (h)(4)(A) by implementing an approved alternative compliance method the owner or operator shall comply with the timeframe specified in the approved alternative compliance method. Further, if an owner or operator elects to phase out the use of hexavalent chromium in a chromium

electroplating or chromic acid anodizing tank the approved Hexavalent Chromium Phase-Out Plan shall be implemented no later than two years after it is approved by the Executive Officer.

Under subparagraph (h)(4)(D), Owners or operators shall not be subject to the requirements of venting a Tier III Hexavalent Chromium-Containing Tank to an add-on air pollution control device if the uncontrolled hexavalent chromium emission rate is less than 0.2 mg/hr—the applicable emission rate limit of subparagraph (h)(4)(A), as demonstrated by a SCAQMD-approved source test conducted pursuant to the Technical Guidance Document for *Measurement of Hexavalent Chromium Emissions from Chromium Plating and Chromic Acid Anodizing Operations for Certification of Wetting Agent Chemical Mist Suppressant Subject to SCAQMD Rule 1469.*

Effective 90 days after the date of rule adoption, new paragraph (h)(5) requires Tier II Hexavalent Chromium Tanks to utilize a tank cover, mechanical fume suppressant, or other method approved by the Executive Officer. Alternatively, the owner or operator may meet the emission reduction requirements of a Tier III Hexavalent Chromium Tank specified in subparagraphs (h)(4)(A) and (h)(4)(B).

Paragraph (h)(56) requires facilities to operate add-on air pollution control devices at the applicable minimum hood induced capture velocity specified in the most current edition (i.e., at the time the permit application was deemed complete by SCAQMD) of the *Industrial Ventilation, A Manual of Recommended Practice for Design*, published by American Conference of Governmental Industrial Hygienists.

Alternative Compliance Methods for New, Modified, and Existing Hexavalent Decorative and Hard Chromium Electroplating and Chromic Acid Anodizing Facilities – Subdivision (i)

Subdivision (i) retains the option for affected equipment to operate under an alternative compliance method to meet the emission limits specified in paragraphs (h)(2) and (h)(4). The alternative compliance option is available for existing, modified, and new facilities if the owner or operator can demonstrate that the alternative method(s) is enforceable, provides an equal or greater hexavalent chromium reduction, or greater risk reduction than compliance with the emission limits of specified in paragraphs (h)(2) and (h)(4). An owner or operator that elects to use an alternative method must submit an SCAQMD permit application that includes information specified in PAR 1469, Appendix 7 - Information Demonstrating an Alternative Method(s) of Compliance Pursuant to Subdivision (i).

PAR 1469 removes the following paragraphs as they refer to past interim compliance options:

- Alternative Interim Compliance Options – Inventory and Health Risk Assessment
- Alternative Interim Compliance Options – Emission Reduction Plan
- Alternative Interim Compliance Options – Maximum Installed Controls
- Alternative Interim Compliance Options – Facility wide Mass Emission Rate
- Alternative Interim Compliance Options – Alternative Standards for Existing Hexavalent Chromium Electroplating and Chromic Acid Anodizing Facilities with Low Annual Ampere Hour Usage

The alternative interim compliance options are no longer options and facilities will be required to comply with the respective requirements specified in subdivision (h). ~~Subdivision (i) does, however, retain the option to operate under an alternative compliance method as currently allowed for in Rule 1469. The alternative compliance option is available for existing, new, and modified facilities if the owner or operator can demonstrate that the alternative method(s) is enforceable, provides an equal or greater hexavalent chromium reduction, or greater risk reduction than would direct compliance with the requirements of paragraph (h).~~

Training and Certification – Subdivision (j)

~~Training and certification requirements were previously located in paragraph (c)(7). This section has been moved to its own dedicated subdivision (j) with no modifications to existing requirements.~~

Source Test Requirements and Test Methods – Subdivision (k)

The subdivision has been renamed and relocated from subdivision (e) to subdivision (k). Currently, Rule 1469 only requires a source test either by 2009 or during installation. ~~SCAQMD staff believes that~~ Periodic source tests are necessary to verify the continued performance of both the capture and control of hexavalent chromium emissions for add-on air pollution control devices specified in this rule. Although parameter monitoring can verify the operation of specific elements of the add-on air pollution control device, source tests allows for the comprehensive evaluation of the system.

~~The owner or operator using air pollution control techniques to comply with applicable emission limits of this rule shall conduct an initial source test to demonstrate compliance with applicable emission standards, with subsequent periodic source testing or emissions screening testing at least once every 36 months thereafter as specified in paragraph (k)(3). Failure to retest following a failed or unsuccessful source test within 60 days shall constitute a violation of this rule.~~

The current version of Rule 1469 only requires an initial source test. Paragraph (k)(1) clarifies the source test requirements for an initial source test and establishes additional requirements to conduct subsequent source tests. Periodic source testing is needed to ensure that add-on pollution control devices are operating properly and achieving the required emission limit. Subparagraph (k)(1)(A) establishes the schedule for conducting initial and subsequent source tests to meet the emission limits in paragraphs (h)(2) and (h)(4) (see PAR 1469, Table 3: Source Tests Schedule). In general, facilities with greater than 1,000,000 permitted annual amp-hours are required to source test no later than 60 months from the day of the most recent source test that demonstrates compliance with all applicable requirements and facilities with less than or equal to 1,000,000 permitted annual amp-hours are required to source test no later than 84 months from the day of the most recent source test that demonstrates compliance with all applicable requirements.

Subparagraph (k)(1)(B) allows an owner or operator to submit a written request for additional time to conduct the initial source test. This subparagraph specifies the procedures of when the Executive Officer must be notified, the information that must be included in the notification, and the timing for approval to allow use of this provision.

Subparagraph (k)(1)(C) establishes provisions that allow an owner or operator to use an existing source test that was conducted after January 1, 2015 for compliance with provision for the initial

source test provided the applicable emission limits in subdivision (h) are demonstrated, operating conditions during the source test are representative of current operating conditions, and the appropriate test methods were used.

Subparagraph (k)(1)(D) establishes provisions for when a source test was conducted after January 1, 2015, but the source test was not approved. Under this subparagraph, provided the owner or operator submits the source test to the Executive Officer for approval no later than 30 days after date of adoption, the Executive Officer will review the source test to verify if it can be used and meets the same criteria subparagraph (k)(1)(C).

Subparagraph (k)(1)(E) establishes provisions that require an owner or operator that is relying on a source test conducted after January 1, 2015 under subparagraph (k)(1)(C) to conduct the first subsequent source test no later than January 1, 2024 and then follow the source testing schedule for subsequent source tests as specified in PAR 1469, Table 3: Source Tests Schedule.

Subparagraph (k)(1)(F) clarifies that an owner or operator that elects to meet an emission limit specified in a paragraph (h)(2) using a certified wetting agent chemical fume suppressant or a approved alternative to a wetting agent chemical fume suppressant shall not be subject to the requirements in subparagraph (k)(1)(A).

Paragraph (k)(2) clarifies requirements for approved test methods, test methods for add-on non-ventilated air pollution control devices, and methods to measure surface tension. Emissions testing for add-on non-ventilated air pollution control devices shall be conducted in accordance with PAR 1469, Appendix 5 – Smoke Test for Add-on Non-Ventilated Air Pollution Control Device.

Paragraph (k)(3) proposes to allow the use of emissions screening tests in lieu of conducting a source test to comply with the *subsequent* source test requirements. Subparagraph (k)(3)(A) will allow the owner or operator to conduct an emission screening of hexavalent chromium provided that the emissions screening test shall:

- consist of one run to evaluate the capture and control of hexavalent chromium emissions;
- follow a source test protocol approved by Executive Officer; and
- be representative of the operating conditions during the most recent source test.

Subparagraph (k)(3)(B) proposes to allow an owner or operator with a SCAQMD approved source test conducted after January 1, 2009 to conduct an emission screening to satisfy the requirements of conducting the *initial* source provided the subject source test met the criteria stated above. This subparagraph includes provisions to allow an operator to submit a source test that was conducted after January 1, 2009 for approval.

Within 30 days of receiving the results of the emissions screen test, subparagraph (k)(3)(C) requires the owner or operator to submit the results to the Executive Officer. Under subparagraph (k)(3)(D), the owner or operator will be required to conduct a source test using an approved method within 60 days of conducting an emission screening test that fails the capture efficiency test(s) specified in the source test protocol, exceeds an emission limit specified in the SCAQMD Permit to Operate, or exceeds an emission limit in subdivision (h).

Paragraph (k)(4) defines the information content requirements for source test protocols and includes procedures for when a previously approved source test protocol can be used for conducting subsequent source tests.

~~Paragraph (k)(3) sets forth requirements for source testing and emissions evaluation compliance dates. The initial source test must be conducted 120 days after approval of the initial source test protocol. The due to date to submit an initial source test protocol is based on the facility's permitted annual ampere hours, with facilities that have higher permitted limits required to submit sooner. A source test conducted after September 1, 2015 may be used to demonstrate compliance with the initial source test requirement. If not previously approved by SCAQMD, the owner or operator shall submit the source test to SCAQMD no later than 30 days after adoption of the rule. The Executive Officer shall notify the owner or operator within 30 days of receiving the source test results if it has demonstrated compliance with applicable emission limits, is representative of the method to control emissions currently in use, and the test was conducted using one of the approved test methods specified in the rule. A facility using a source test to demonstrate compliance with the initial source test requirement will be required to conduct a subsequent source test no later than 36 months from the adoption date of the rule instead of 36 months from the date of the subject source test.~~

~~In lieu of conducting a source test for subsequent tests, the owner or operator may conduct an emission screening of hexavalent chromium, which is an emission test following a source test protocol that consistence of one run instead of three runs and is representative of operating conditions at the facility:~~

~~Additionally, facilities with a District approved source test conducted after January 1, 2009 will be allowed to conduct an emission screening to satisfy the requirements of conducting the initial source test so long as the subject source test met the criteria stated above.~~

~~The emission screening of hexavalent chromium will show whether the air pollution control technique is operating and performing as intended. While parameter monitoring may evaluate the performance of capture periodically, the emission screening allows the verification of emission limits. Owners or operators may utilize this option as a method to reduce the costs for potential work hours lost or having a source testing company conduct multiple runs. Within 30 days of receiving the results of the emission screening, the owner or operator shall submit the results to SCAQMD. The owner or operator will be required to conduct a complete source test using an approved method within 60 days of conducting an emission screening that fails the capture efficiency test(s) specified in the source test protocol, exceeds an emission limit specified in the Permit to Operate, or exceeds an emission standard of the rule.~~

~~The owner or operator shall submit a source test protocol for source tests required under subdivision (k) as specified below in Table 1-4:~~

**Table 1-4
Submittal Dates of Source Test Protocol**

Permitted Air Pollution Control Technique	Facility Permitted Annual Ampere-Hours	Due Date of Initial Source Test Protocol	Due Date of Subsequent Source Test Protocol
Existing on or Before [Date of Adoption]	$> 20,000,000$	No later than [180 Days After Date of Rule Adoption]	180 Days Prior to Due Date of Subsequent Source Test
	$\leq 20,000,000$ and $> 1,000,000$	No later than [365 Days After Date of Rule Adoption]	180 Days Prior to Due Date of Subsequent Source Test
	$\leq 1,000,000$	No later than [545 Days After Date of Rule Adoption]	180 Days Prior to Due Date of Subsequent Source Test
New or Modified After [Date of Adoption]	Any	60 days After Initial Start Up	180 Days Prior to Due Date of Subsequent Source Test

The submission of the source test protocol is separated into three categories based on the facility permitted ampere hours. The most recent SCAQMD approved source test protocol may use for subsequent source tests if there are no changes in either the tanks controlled by the APCD or the APCD since the last successful SCAQMD approved source test.

Paragraph (k)(6) clarifies the requirements for demonstrating that each add-on pollution control device meets the design criteria and ventilation velocities specified in *A Manual of Recommended Practice for Design* authored by the American Conference of Governmental Industrial Hygienists or alternative design criteria and ventilation velocities approved by the Executive Officer.

PAR 1469 specifies that the owner or operator using an add-on air pollution control device or add-on non-ventilated air pollution device shall demonstrate that all emissions are captured by measuring collection slot velocity and the push air manifold pressure. The demonstration shall be made during any source test. Additional parameter monitoring shall take place at least once every 180 days. An adequate collection slot velocity is required to ensure that collection of hexavalent chromium emissions is at the level measured during the source test.

A deficient measurement would indicate that the hexavalent chromium emissions are not being collected and being controlled by the add-on air pollution control device. If the measurement of a collection slot velocity is measured in the “repairable measurement” of 90-95% of the most recent passing source or emission screening or less than 2,000 feet per minute (fpm) and greater than 1,800 fpm, the owner or operator shall repair or repair and re-measure within 3 calendar days of the measurement. The tank controlled by the add-on air pollution control device may continue to operate with the add-on air pollution control device in operation. If the owner or operator fails to demonstrate that the collection slot is in the “acceptable measurement” range, greater than 95% of the most recent source test or emission screening or greater than 2,000 fpm, the owner or operator

~~shall shut down any tanks associated with the any add-on air pollution control devices associated with the collection slot. If the measurement of the collection slot velocity is measured to be in the “failing measurement” range, less than 90% of the most recent source test or emission screening or less than 1,800 fpm the owner or operator shall immediately shut down any tanks associated with any air add-on air pollution control devices associated with the collection slot.~~

~~This prevents the owner or operator from operating a tank that may be emitting hexavalent chromium since the hexavalent chromium emissions are not being sufficiently collected. The owner or operator shall demonstrate that the collection slot is in the “acceptable measurement” by re-measuring the collection slot velocity under typical operating conditions of the tank, with the exception of the suspension of electrolytic operations, prior to resuming electrolytic operations. The periodic measurement requirements to demonstrate the capture efficiency are summarized in Table 1-5 below.~~

Table 1-5
Periodic Measurement to Demonstrate Capture Efficiency

	Collection Slot(s) Velocity	Push Air Manifold Pressure (for push-pull systems only)	Required Action
Acceptable Measurement	>95% of the most recent source test or emission screening; or \geq 2,000 fpm	95-105% compared to the most recent passing source test or emission screening	None
Repairable Measurement	90-95% of the most recent passing source test or emission screening test, or $<$ 2,000 fpm and $>$ 1,800 fpm	90-110% of the most recent passing source test or emission screening test	Repair or replace, and re-measure within 3 calendar days of measurement
Failing Measurement	$<$ 90% of the most recent passing source test or emission screening test, or $<$ 1,800 fpm	$>$ 110% or $<$ 90% of the most recent passing source test or emission screening test	Immediately shut down all tanks controlled by the add-on air pollution control device

~~PAR 1469 clarifies the requirements of the smoke test to clarify that both add-on air pollution control devices and add-on non-ventilated air pollution control devices are to be tested. Add-on air pollution control devices have emission collection systems and the smoke tests demonstrates through a qualitative evaluation that emissions coming from the tank are being collected. Add-on non-ventilated air pollution control devices typically do not have an emissions collection system and a smoke test would demonstrate the containment of hexavalent chromium emissions by devices such as tank covers and merlin hoods.~~

Paragraph (k)(7) clarifies the methods that are required to be used for conducting a smoke test for add-on air pollution control devices (see Appendix 5 in PAR 1469) and add-on non-ventilated air pollution control devices (see Appendix 8 – Smoke Test to Demonstrate Capture Efficiency for an Add-on Air Pollution Control Device(s) Pursuant to Paragraph (k)(6) in PAR 1469).

Certification of Wetting Agent Chemical Fume Suppressant – Subdivision (I)

Paragraph (I)(1) modifies the existing requirements by prohibiting the addition of PFOS-based CFS to any chromium electroplating or chromic acid anodizing bath. Paragraph (I)(2) establishes the criteria for using a wetting agent chemical fume suppressant to lower the minimum surface tension of the tank to 40 dynes/cm, as measured by the stalagmometer, or below 33 dynes/cm, as

measured by a tensiometer. This modification is made to be consistent with the federal NESHAP for Chromium Electroplating which bans the use of PFOS in chemical fume suppressants. The certification list will be updated periodically based on the certification process conducted by the SCAQMD and the California Air Resources Board (CARB). Paragraph (1)(3) establishes a requirement for the Owner or operators to use a certified wetting agent chemical fume suppressant in accordance with the certification and the applicable manufacturer specifications.

Paragraph (1)(4) includes PAR 1469 adds a new requirement that no later than July-January 1, 2020, the Executive Officer shall notify the owner or operator of the availability of a wetting agent chemical fume suppressant CFS that meets the requirements by July 1, 2022 and the certification status of any potential wetting agent chemical fume suppressant CFS going through the certification process conducted by SCAQMD and CARB.

Beginning July 1, ~~2022~~2021, the owners or operators of a facility shall only add a wetting agent chemical fume suppressant CFS to a Tier III Hexavalent Chromium electroplating or chromic acid anodizing ~~Containing~~ Tank that meets the requirement of (1)(4) based on a certification process conducted by SCAQMD and CARB.

~~The previous certification process involved emission testing to determine a corresponding surface tension to consistently produce an emission rate of 0.01 mg/ampere-hour. The new certification process may consider: toxicity reviews of compounds in the CFS, emission testing for CFS emissions, surface tension, emission testing for hexavalent chromium emissions, and additional data to evaluate the CFS.~~

Paragraph (1)(5) specifies that if the notification indicates that a wetting agent chemical fume suppressant CFS that meets the certification requirements will not be available by July 1, 2021, then the owner or operator of a facility shall install and only add a chemical fume suppressant to a chromium electroplating or a chromic acid anodizing tank based on the information in the notice implement an air pollution control technique to meet the specified in paragraph (1)(4)(2) no later than July 1, 2021/2022.

If the notice indicates that a chemical fume suppressant that meets the certification requirements will not be available by July 1, 2021, the owner or operator shall meet the emission limits specified in paragraph (h)(2) no later than July 1, 2021 or implement an alternative to a wetting agent chemical fume suppressant that meets the requirements in paragraphs (1)(7) and (1)(8). If an owner or operator of a facility elects to meet the requirements of paragraph (1)(5) by implementing an alternative to a wetting agent chemical fume suppressant the owner or operator would be required to submit a permit application for the chromium electroplating or chromic acid anodizing tank(s) that includes the alternative and any conditions specified in the approval of the alternative in paragraph (1)(8).

Also, an owner or operator of a facility may elect to meet the requirements of paragraph (1)(5) by phasing-out the use of hexavalent chromium in a chromium electroplating or chromic acid anodizing tank that uses a wetting agent chemical fume suppressant. If the owner or operator of a facility elects to phase out the use of hexavalent chromium the phase-out shall occur on or before July 1, 2022.

~~As discussed in Chapter 1, CFS may be used in conjunction with other air pollution control techniques. Assuming that no CFS are certified, it is anticipated that facilities will either be required to install additional add-on air pollution control devices, upgrade existing air pollution control techniques, or modify operating practices. Owners or operators will be required to modify or obtain a Permit to Operate that reflects the change and conduct any required emission testing.~~

Paragraph (l)(6) includes an option for the owner or operator of a facility to submit a written commitment to the Executive Officer no later than January 1, 2021 that states the facility shall phase-out the use of hexavalent chromium in the electroplating or chromic acid anodizing tank that is using a wetting agent chemical fume suppressant CFS by July 1, 20232022, in lieu of complying with paragraph (l)(5). This commitment shall be signed by the owner or operator of the facility. The owner or operator may continue to use a wetting agent chemical fume suppressant CFS certified pursuant to paragraph (l)(1) until July 1, 20232022.

Paragraph (l)(8) of PAR 1469 adds a new provision that in the event the Executive Officer notifies facilities by January 1, 2020 that no wetting agent chemical fume suppressants will be available by July 1, 2021, the Executive Officer may identify one or more alternatives to a wetting agent chemical fume suppressant that meet the 0.01 milligrams per ampere-hour (mg/ampere-hour) limit. During the previous rule development of Rule 1469, wetting agent chemical fume suppressants were identified as an effective and low cost air pollution control technique to reduce hexavalent chromium emissions for facilities permitted less than or equal to 50,000 ampere-hours per year. The alternative to a wetting agent chemical fume suppressant will identify air pollution control technique(s) that must be used in combination to meet an equivalent emission rate of 0.01 mg/ampere-hour.

Paragraph (l)(10) requires the owner or operator that fails to phase-out the use of hexavalent chromium by July 1, 20232022 to cease operating the electroplating or chromic anodizing tank that contains hexavalent chromium until the facility can meet the specified emission limits. While the tank may be in compliance with surface tension limits, a facility that fails to cease operating the tank will be in violation of this provision.

Parameter Monitoring – Subdivision (m)

Modifications to this subdivision are necessary to revise existing and add new parameter monitoring requirements for add-on air pollution control devices and add-on non-ventilated air pollution control devices.

In particular, subparagraph (m)(1)(A) clarifies the pressure and air flow requirements for monitoring the operation of an add-on air pollution control device. Specifics regarding installation, maintenance, and labeling are detailed in PAR 1469, Table 4 - Pressure and Air Flow Measurement Parameters. Similarly, the requirements for maintaining the mechanical gauges are detailed in PAR 1469, Appendix 4 - Summary and Inspection of Maintenance Requirements. As required in Table 4 of PAR 1469, the owner or operator using an add-on air pollution control device shall demonstrate that emissions are captured by measuring collection slot velocity and the push air manifold pressure. The demonstration shall be made during any source test. Beginning 60 days after the completion of the initial source test, the owner or operator shall conduct additional parameter monitoring at least once every 180 days. An adequate collection slot velocity is required

to ensure the collection of hexavalent chromium emissions is at the level measured during the source test.

Subparagraph (m)(1)(B) establishes new requirements for the velocity of collection slots. In particular, Table 5 Add-on Air Pollution Control Device Parameter Monitoring, specifies the collection slot velocities and push air manifold pressure conditions that must be met for three categories: Acceptable Measurement, Repairable Measurement, and Failing Measurement.

Subparagraph (m)(1)(C) establishes new requirements for an owner or operator of a facility with an add-on air pollution control device demonstrating a repairable measurement to correct the measurement in a timely manner as specified in Table 5.

Subparagraph (m)(1)(D) establishes requirements for shutting down a tank controlled by an add-on air pollution control device until the collection slot velocity and/or push air manifold pressure are within the acceptable measurement range in the event there is a failure to correct a repairable measurement or if the measurement is in the “failing measurement” range.

Subparagraph (m)(1)(E) establishes requirements for conducting a smoke test once every 180 days in accordance with the methods described in Appendices 5 or 8 in PAR 1469, or some other method approved by the Executive Officer. The smoke test shall be conducted within 30 days of start-up for new and modified add-on air pollution control devices or add-on non-ventilated air pollution control devices.

Subparagraph (m)(1)(F) establishes requirements for when there is a failure of a smoke test. In the event an acceptable smoke test is not conducted in accordance with the requirements in subparagraph (m)(1)(E), the owner or operator of a facility shall immediately shutdown all Tier II and Tier III Hexavalent Chromium Tanks associated with the add-on air pollution control device or add-on non-ventilated air pollution control device until an acceptable smoke test is conducted.

Pressure Drops

~~PAR 1469 removes this subparagraph as the requirements have been moved to subparagraph (m)(1)(A).~~

Differential and Static Pressure

~~PAR 1469 requires additional monitoring of operational parameters. The owner or operator must continuously monitor the operation of the add-on air pollution control device by installing and maintaining mechanical gauges to ensure the applicable pressures and air flows are maintained at the push manifold, collection manifold, and across each stage of the control device. Each mechanical gauge shall be installed so that it is easily visible and in clear sight of the operation or maintenance personnel. The differential or static pressure shall be maintained within the value established during the source test and specified in the Permit to Operate. The gauges shall be labeled with the acceptable operating pressure and/or airflow ranges.~~

HEPA Filters –subparagraph (m)(1)(G)

Subparagraph (m)(1)(G) establishes parameter monitoring for HEPA filters. Beginning 60 days after the completion of the initial source test, the owner or operator of an add-on air pollution

control device equipped with HEPA filters shall ensure that the monitoring device for pressure drop:

- Is equipped with ports to allow for periodic calibration in accordance with manufacturer's specifications;
- Is calibrated according to manufacturer's specification at least once every calendar year; and
- Is maintained in accordance with the manufacturer's specification.

Wetting Agent Chemical Fume Suppressants (Excluding Decorative Chromium Electroplating Tanks Using a Trivalent Chromium Bath) – paragraph (m)(2)

The original requirement in subparagraph (m) (2)(A) to measure surface tension weekly after 20 daily measurements of surface tension with no violation has been modified to occur every third operating day, but not less than once a weekly frequency and relocated to subparagraph (m)(2)(B). The required non-PFOS chemical fume suppressant CFS evaporate and degrade faster than the PFOS-containing products. SCAQMD staff is concerned that this faster degradation can result in faster increases to surface tensions values. More frequent periodic monitoring of tank bath surface tensions will ensure that an adequate amount of chemical fume suppressant CFS are being used to comply with the surface tension limits specified in the rule and permit conditions. New sSubparagraph (m)(2)(C) requires daily surface tension measurements to be conducted for 20 consecutive operating days if the surface tension as required by subparagraph (m)(2)(A) is not maintained. The owner or operator can resume monitoring every third operating after successfully measuring the surface tension daily for 20 consecutive operating days.

Fume Suppressants Forming a Foam Blanket – paragraph (m)(3)

When fume suppressants forming a foam blanket are used, paragraph (m)(3) requires thickness of the foam blanket across the surface of the chromium electroplating or chromic acid anodizing tank to be measured and maintained as established during the most recently approved source test to demonstrate compliance with the emission limit specified in paragraphs (h)(2) or (h)(4). In the event the foam blanket thickness is not maintained, subparagraph (m)(3)(C) requires hourly thickness measurements to be conducted for 15 consecutive operating days and then daily thickness measurements afterwards.

Polyballs or Similar Mechanical Fume Suppressants – paragraph (m)(4)

When polyballs or similar mechanical fume suppressants are used, paragraph (m)(4) requires a visually inspection for coverage comparable to the coverage during the source test each operating day. The paragraph has been modified to specify include Tier II and Tier III Hexavalent Chromium-Containing Tanks.

Inspection, Operation, and Maintenance Requirements & Operation and Maintenance Plan – Subdivision (n)

Subdivision (n) establishes inspection, operation, and maintenance requirements for when add-on air pollution control devices or add-on non-ventilated air pollution control devices are in use. The original table previously identified as Table 4 has been moved to Appendix 4, and renumbered as Table 4-1 and incorporates the newly added parameter monitoring requirements of subdivision (l). Tier II Hexavalent Chromium Tanks not controlled by an add-on air pollution control device shall

comply with the applicable inspection and maintenance requirements in Appendix 4, Table 4-4. The existing requirements for facilities using CFS or mechanical fume suppressants has also been moved to Appendix 4, Table 4-24. PAR 1469 also combines the existing requirements for the operation and maintenance plan into this subdivision.

Also, Tier II Hexavalent Chromium Tanks not controlled by an add-on air pollution control device and Tier I, Tier II, and Tier III Hexavalent Chromium Tanks are required to comply with new inspection and maintenance requirements within 90 days after the date of rule adoption.

Effective 90 days after the date of rule adoption, paragraphs (n)(3) and (n)(4) require the owner or operator of a facility to comply with the additional inspection and maintenance requirements in Appendix 4.

Also, effective 90 days after date of the rule adoption, paragraph (n)(9) requires the owner or operator to revise the facility's operation and maintenance plan to incorporate the inspection and maintenance requirements for a device or monitoring equipment that is identified in Tables 4-2 and 4-3 of Appendix 4.

Paragraph (n)(10) requires the owner or operator to photograph the ampere-hour reading of the ampere-hour being replaced and the new ampere-hour meter immediately after installation.

Recordkeeping and Reporting – Subdivisions (o) and (p)

Paragraph (o)(1) PAR 1469 clarifies that the inspection records apply to facilities using either an add-on air pollution control devices or an add-on non-ventilated air pollution control devices. Additional recordkeeping requirements have been included to reflect the proposed provisions for building enclosures, housekeeping, best management practices, periodic source tests, capture efficiency tests, emission screening, and parameter monitoring. Inspection and maintenance requirements have been moved to Appendix 4.

As part of the ongoing compliance status and emission reports (specified in Appendix 3 – Content of Ongoing Compliance Status and Emission Reports), facilities must report the results of add-on air pollution ventilation measures conducted during the most recent source test. Facilities must report the velocity of each collection slot and push air manifold. Facilities must also report any pollution prevention measures that have been implemented that eliminate or reduce the use of hexavalent chromium in the chromium electroplating or chromic acid anodizing process. Also required in the compliance status reports are calculations for building enclosure envelopes, including locations and dimensions of openings counted towards the 3.5% allowance.

Paragraph (p)(4) PAR 1469 revises “Reports of Breakdowns” to “Notification of Incident”. As background, SCAQMD Rule 430 provides breakdown coverage, where the facility ~~may~~would not be in violation of a permit condition or rule requirement, if the Executive Officer determines that it was a valid breakdown based on evidence provided by the owner or operator. However, the existing reference to Rule 430 in Rule 1469 is conflicting as Rule 430 does not apply to any Regulation XIV rules.

As a result, PAR 1469 replaces breakdown provisions with “Notification of Incident” which incorporates similar notification language used in Rule 430 by requiring the owner or operator to

notify SCAQMD via 1-800-CUT-SMOG within ~~one~~four hours of the incident or within ~~one~~four hour of the time the owner or ~~operator~~operator was notified ~~knew or reasonably should have known~~ of the following:

- Any failed smoke test
- Any failed source test
- An exceedance of a permitted ampere-hour limit
- A malfunction of a non-resettable ampere-hour meter

A supplemental report is required to be submitted no later than 30 calendar days from the date of incident.

New and Modified Sources (removed)

PAR 1469 removes previous subdivision (l) relating to New and Modified Sources as facilities are required to submit a permit prior to altering or installing equipment under existing SCAQMD rules for permitting (Regulation II) and toxic new source review (Rule 1401).

Exemptions – Subdivision (r)

Due to the new requirements for Tier I and Tier II Hexavalent Chromium-Containing Tanks, PAR 1469 removes the exemption for process tanks associated with a chromium electroplating or chromic acid anodizing process in which neither chromium electroplating nor chromic acid anodizing is taking place. One of the objectives of PAR 1469 is to control emissions from tanks that were identified as sources of hexavalent chromium where neither electroplating nor chromic acid anodizing is taking place.

PAR 1469 also removes the exemption that would suspend requirements during periods of equipment breakdown. As discussed earlier, references to Rule 430 have been removed due to the lack of applicability to Regulations XIV.

PAR 1469 adds a new exemption from the requirements of paragraphs (f)(6), (g)(4), and (g)(5) provided that the buffing, grinding or polishing operations are conducted under a continuous flood of metal removal fluid.

Title V Permit Requirements (removed)

PAR 1469 removes ~~the~~ previous subdivision (o) as SCAQMD Rule 3002 already requires a facility to obtain a Title V permit and comply with the conditions. Therefore, this subdivision is unnecessary and duplicative.

Chromium Electroplating or Chromic Acid Anodizing Kits Requirements (removed)

PAR 1469 removes previous subdivision (q) which contained requirements for chromium electroplating or chromic acid anodizing kits as this existing language was originally from the state's Chrome Plating ATCM regarding prohibitions on chromium electroplating and chromic acid anodizing kits. This language has been removed because Rule 1469 facilities are still subject to those requirements under state law.

Conditional Requirements for Permanent Total Enclosure – Subdivision (t)

Paragraph (t)(1) requires the owner or operator of a facility to install a permanent total enclosure for a Tier III Hexavalent Chromium Tank with a that does not exceed 3.5% for all enclosure openings as specified in paragraph (e)(1)-if for a Tier III Hexavalent Chromium Tank:

- That results in ~~M~~more than one non-passing source test as required in paragraph (k)(1) occurring~~ed~~ within a consecutive 48-month period; or
- Not immediately shut down pursuant to clause (m)(1)(C)(iii) or subparagraph (m)(1)(D) or subparagraph (m)(1)(F) and the facility is more than 1,000 feet from a sensitive receptor, and~~More than one failure of the owner or operator failed to cease operating an electroplating or anodizing line associated with tank that is controlled by an add-on air pollution control device or add-on non-ventilated air pollution control device more than once within a consecutive 48-month period due to a failed measurement of the collection system of an add-on air pollution control device, or a failed smoke test as required in paragraph (k)(6); or of an add-on air pollution control device or add-on non-ventilated air pollution control device within a consecutive 48-month period.~~
- Not immediately shut down pursuant to clause (m)(1)(C)(iii), subparagraph (m)(1)(D) or subparagraph (m)(1)(F) and the facility is 1,000 feet or less from a sensitive receptor, and the owner or operator failed to cease operating a tank controlled by an add-on air pollution control device or add-on non-ventilated air pollution control device.

The distance of a sensitive receptor or a school to the facility shall be measured from the property line of the sensitive receptor or school to the nearest property line of the facility.

Paragraph (t)(2) allows the owner or operator to contest the requirement in paragraph (t)(1) to install a permanent total enclosure within 30 days of receiving notification from the Executive Officer that the requirement had been triggered. A written report contesting the requirement shall include evidence that installation of the permanent total enclosure is not warranted based on the following criteria:

- The incidents of non-compliance did not occur; or
- The owner or operator resolved the specified incidents of non-compliance specified in paragraph (t)(1) in a timely manner; or
- The owner or operator implemented specific measures minimize the hexavalent chromium emissions.

The Executive Officer will use the information in the written report to determine whether the permanent total enclosure is required and will notify the owner or operator within 90 days of receiving the written report.

Paragraph (t)(4) requires ~~P~~permanent total enclosures will be required to vent to an add-on air pollution control device that is fitted with HEPA filters, or other filter media that is rated by the manufacturer to be equally or more effective, and designed in a manner that does not conflict with requirements or guidelines set forth by OSHA or CAL-OSHA regarding worker safety, or the National Fire Protection Association regarding safety.

Paragraph (t)(5) requires a Permit application for a permanent total enclosure to be submitted to the Executive Officer as follows:

- No later than 180 days after notification by the Executive Officer if the property line of the facility is within 500 feet of the property line of any sensitive receptor, school, or early education center.
- No later than 270 days after notification by the Executive Officer for all other facilities.

Installation of the permanent total enclosure shall be completed no later than 12 months after the Permit to Construct is issued by the Executive Officer.

~~Under the proposed amended rule, the owner or operator would be allowed to contest the requirement to install a permanent total enclosure within 30 days of receiving notification from the Executive Officer that the requirement had been triggered. A written report contesting the requirement shall include evidence that installation of the permanent total enclosure is not warranted based on the following criteria:~~

- ~~• The specified incidences of non-compliances did not occur; and~~
- ~~• The owner or operator resolved the specified incidences of non-compliances in a timely manner; and~~
- ~~• The owner or operator implemented specific measures minimize the hexavalent chromium emissions.~~

~~The Executive Officer will use the information in the written report to determine whether the permanent total enclosure is required and will notify the owner or operator within 90 days of receiving the written report.~~

Hexavalent Chromium Phase-Out Plan – Subdivision (u)

Paragraph (u)(1) provides Owners and operators of any facilities with an existing Tier III Hexavalent Chromium Tank that plans to eliminate or reduce hexavalent chromium concentrations within the tank shall not be subject to the requirements of paragraph (h)(4) to vent the tank to an add-on air pollution control device. In order to qualify for this exemption, facilities must submit a plan to the Executive Officer for approval that includes:

- The method by which the hexavalent chromium concentration will be eliminated or reduced and expected completion date; and
- A list of milestones necessary to occur, including their projected dates; and
- A list of all control measures that will be implemented until the concentration is eliminated or reduced.

Paragraph (u)(2) requires the Hexavalent Chromium Phase-Out Plan to be subject to the fees specified in Rule 306 – Plan Fees.

Paragraph (u)(4) requires the owner or operator to submit a progress report to the Executive Officer by the first day of each calendar quarter indicating the performance to meet the increments of progress for the previous quarter or submit according to an alternative schedule as specified in the approved plan.

~~Facilities must also submit a progress report to the Executive Officer by the 5th of every month indicating the performance to meet the increments of progress for the previous month, or submit according to an alternative schedule as specified in the approved plan. Implementation of the plan must be completed within 2 years of approval of the Hexavalent Chromium Phase Out Plan. In addition, facilities unable to eliminate or reduce emissions by the expected completion date or if a Phase Out Plan is denied after it is resubmitted, the owner or operator must submit permit applications for add-on air pollution control devices within 30 days of when they knew, or should have known that they could not meet the date. The add-on air pollution control device must be installed no later than 180 days after a Permit to Construct is issued.~~

Paragraph (u)(5) requires owners or operators to submit complete SCAQMD permit applications to comply with subdivision (h) if:

- The owner or operator does not eliminate or reduce hexavalent chromium by the final completion date in the Hexavalent Chromium Phase-Out Plan;
- The Executive Officer denies a resubmitted Hexavalent Chromium Phase-Out Plan; or
- The owner or operator fails to resubmit the Hexavalent Chromium Phase-Out Plan.

Paragraph (u)(6) requires the owner or operator to install the add-on air pollution control device no later than 180 days after a Permit to Construct is issued.

Time Extensions – Subdivision (v)

Paragraph (v)(1) allows an owner or operator of a facility to submit a request to the Executive Officer for a one-time extension for up to 12 months to:

- Complete installation of an add-on air pollution control device, implement an approved alternative compliance method, or implement an approved Hexavalent Chromium Phase-Out Plan to meet the requirements under subparagraph (h)(4)(C); or
- Meet the hexavalent chromium emission limit, phase-out the use of hexavalent chromium, or implement an alternative to a wetting agent chemical fume suppressant required under paragraph (l)(5).

Paragraph (v)(2) requires an owner or operator of a facility that requests a time extension under paragraph (v)(1) to submit the request no later than 90 days before the compliance deadline specified in subparagraph (h)(4)(C) or paragraph (l)(5) and provide:

- The facility name, SCAQMD facility identification number, and the name and phone number of a contact person;
- A description of the chromium electroplating or chromic acid anodizing tank and the SCAQMD Permit to Operate and tank number;
- A description of the emission reduction approach that is being implemented;
- The specific provision under subparagraph (h)(4)(C) or paragraph (l)(5) for which a compliance extension is being requested;
- The reason(s) a time extension is needed;

- Progress in meeting the provisions in subparagraph (h)(4)(C) or paragraph (l)(5) including but not limited to date permit application was submitted to the SCAQMD, date permit to construct was approved, purchase order of equipment, date of service of contractors or consultants to install equipment; and
- The length of time requested, up to 12 months.

Paragraph (v)(3) sets-forth criteria for the Executive Officer to review and approve the time extension requested by an owner or operator. Specifically, the owner or operator would be required to demonstrate that there are specific circumstances beyond the control of the owner or operator that necessitate additional time to meet the compliance dates specified under subparagraph (h)(4)(C) and paragraph (l)(5). Further, the demonstration would be required to be substantiated with information that includes, but is not limited to detailed schedules, engineering designs, construction plans, permit applications, purchase orders, economic burden, and technical infeasibility.

Appendices

All additions and amendments to the following appendices have been made in order to provide clarity and information on PAR 1469.

Appendix 1 – Content of Source Test Reports (revised)

- Items 9-11 have been added to require applicable industrial ventilation limits; collection slot velocities (if applicable); and measured static, differential, or volumetric flow rate at the push manifold; across each stage of the control device; and exhaust stack (if applicable).

Appendix 4 – Notification of Construction Reports (deleted)

- Removed because information required for future construction of equipment at new or existing facilities is submitted with a Permit to Construction.

Appendix 4 – Summary of Inspection Requirements (new)

- Table 4-1: Summary of Inspection and Maintenance Requirements for Sources Using Add-on Air Pollution Control Device(s) or Add-On Non-Ventilated Air Pollution Control Device(s) previously in Table 4 has been added.
- Table 4-2: Additional Inspection and Maintenance Requirements for Tier I, II, and III Hexavalent Chromium Tank(s) has been added.
- Table 4-3: Summary of Inspection and Maintenance Requirements for Sources Not Using Add-on Air Pollution Control Device to Control Tier II Hexavalent Chromium Tank(s) has been added.
- Table 4-4: Summary of Inspection and Maintenance Requirements for Sources Using Chemical or Mechanical Fume Suppressants previously in Table 5 has been added.

Appendix 5 – Smoke Test for Add-on Non-Ventilated Air Pollution Control Device (revised)

Appendix 7 – Distance Adjusted Ampere-Hour and Annual Emissions Limits for Facilities Located More Than 25 Meters from a Residence or Sensitive Receptor (deleted)

- This appendix was deleted because the tables originally included in this appendix were applicable to requirements in Rule 1469 that were removed.

Appendix 7 – Information Demonstrating an Alternative Method(s) of Compliance Pursuant to Subdivision (i) (revised)

- Item 5 has been added to require an owner or operator to demonstrate that the facility is at least 75 feet from a sensitive receptor. Facilities that are within 75 feet from sensitive receptors are ineligible to utilize an alternative method and are required to use an add-on air pollution control device.

Appendix 8 – Smoke Test to Demonstrate Capture Efficiency for an Add-on Air Pollution Control Device(s) Pursuant to Paragraph (k)(6) (revised)

- The reference to “Model #15 049 Tel-Tru T-T Smoke Sticks from E. Vernon Hill Incorporated” was removed from Item 2.1.

Appendix 10 – Tier II and Tier III Hexavalent Chromium Tank Thresholds (new)

- Item 4 has been added, which includes a provision for small tanks with a surface area less than four square feet that have a hexavalent chromium concentration less than 10,000 ppm with a temperature less than 200 degrees Fahrenheit. Staff calculated the emissions from these tanks and if the operator is operating the tank between 170 and 200 degrees Fahrenheit for four hours per week or less, hexavalent chromium emissions from these tanks would be less than tanks controlled to 0.2 mg/hour. Although no add-on pollution controls would be required for these small tanks, the operator must cover the tank when not actively moving parts in or out of the tank and would need to maintain a data logger pursuant to paragraph (n)(3), to log the time and temperature of tank to demonstrate the temperature of the tank is between 170 and 200 degrees Fahrenheit for no more than 4 hours per week.

CHAPTER 2

ENVIRONMENTAL CHECKLIST

Introduction

General Information

Environmental Factors Potentially Affected

Determination

Environmental Checklist and Discussion

INTRODUCTION

The environmental checklist provides a standard evaluation tool to identify a project's potential adverse environmental impacts. This checklist identifies and evaluates potential adverse environmental impacts that may be created by the proposed project.

GENERAL INFORMATION

Project Title:	Proposed Amended Rule (PAR) 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations
Lead Agency Name:	South Coast Air Quality Management District
Lead Agency Address:	21865 Copley Drive Diamond Bar, CA 91765
CEQA Contact Person:	Mr. Sam Wang, (909) 396-2649 Mr. Darren Ha, (909) 396-2548
PAR 1469 Contact Person	Mr. Neil Fujiwara, (909) 396-3512
Project Sponsor's Name:	South Coast Air Quality Management District
Project Sponsor's Address:	21865 Copley Drive Diamond Bar, CA 91765
General Plan Designation:	Not applicable
Zoning:	Not applicable
Description of Project:	PAR 1469 is to further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations. PAR 1469 contains new requirements for: 1) hexavalent chromium-containing tanks, such as dichromate seal tanks, that are currently not regulated; 2) air pollution control equipment to be installed on hexavalent chromium-containing Tier III tanks that emit or have the potential to emit hexavalent chromium; 3) conducting periodic source testing and parametric monitoring of air pollution control equipment; 4) complying with building enclosure provisions; 5) maintaining minimum freeboard height on certain tanks; <u>5</u> 6) conducting additional housekeeping and implementing best management practices for all hexavalent chromium containing tanks; 6 <u>7</u>) permanent total enclosures to be vented to air pollution control equipment in the event of non-compliance with specific source testing or monitoring requirements; 7 <u>8</u>) reducing allowable surface tension limits; 8 <u>9</u>) prohibiting the use of chemical fume suppressants that contain perfluorooctane sulfonic acid (PFOS); and 9 <u>10</u>) evaluating the use of non-PFOS chemical fume suppressants with toxicity concerns via a revised

certification process conducted by SCAQMD and the California Air Resources Board. Some facilities that may be affected by PAR 1469 are identified on lists compiled by the California Department of Toxic Substances Control per Government Code Section 65962.5. While the reduction of hexavalent chromium emissions is expected to create an environmental benefit, activities that facility operators may undertake to comply with PAR 1469 may also create secondary adverse environmental impacts from the construction and operation activities primarily associated with installing new or modifying existing air pollution control equipment. However, analysis of PAR 1469 in the Revised Final Draft EA did not result in the identification of any environmental topic areas that would be significantly adversely affected.

Surrounding Land Uses and Setting:	Various
Other Public Agencies Whose Approval is Required:	Not applicable

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The following environmental impact areas have been assessed to determine their potential to be affected by the proposed project. As indicated by the checklist on the following pages, environmental topics marked with an "✓" involve at least one impact that is a "Potentially Significant Impact". An explanation relative to the determination of impacts can be found following the checklist for each area.

- | | | |
|---|--|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Geology and Soils | <input type="checkbox"/> Population and Housing |
| <input type="checkbox"/> Agriculture and Forestry Resources | <input type="checkbox"/> Hazards and Hazardous Materials | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Air Quality and Greenhouse Gas Emissions | <input type="checkbox"/> Hydrology and Water Quality | <input type="checkbox"/> Recreation |
| <input type="checkbox"/> Biological Resources | <input type="checkbox"/> Land Use and Planning | <input type="checkbox"/> Solid and Hazardous Waste |
| <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Transportation and Traffic |
| <input type="checkbox"/> Energy | <input type="checkbox"/> Noise | <input type="checkbox"/> Mandatory Findings of Significance |

DETERMINATION

On the basis of this initial evaluation:

- I find the proposed project, in accordance with those findings made pursuant to CEQA Guidelines Section 15252, COULD NOT have a significant effect on the environment, and that an ENVIRONMENTAL ASSESSMENT with no significant impacts has been prepared.
- I find that although the proposed project could have a significant effect on the environment, there will NOT be significant effects in this case because revisions in the project have been made by or agreed to by the project proponent. An ENVIRONMENTAL ASSESSMENT with no significant impacts will be prepared.
- I find that the proposed project MAY have a significant effect(s) on the environment, and an ENVIRONMENTAL ASSESSMENT will be prepared.
- I find that the proposed project MAY have a "potentially significant impact" on the environment, but at least one effect: 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards; and, 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL ASSESSMENT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects: 1) have been analyzed adequately in an earlier ENVIRONMENTAL ASSESSMENT pursuant to applicable standards; and, 2) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL ASSESSMENT, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Date: February 15, 2018

Signature:



Barbara Radlein
Program Supervisor, CEQA Special Projects
Planning, Rules, and Area Sources

ENVIRONMENTAL CHECKLIST AND DISCUSSION

As discussed in Chapter 1, the main focus of PAR 1469 is to further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations. PAR 1469 has been evaluated relative to each of the 17 environmental topics identified in the following environmental checklist. Many requirements in PAR 1469 would not be expected to cause any physical changes that that could have secondary adverse environmental effects. For example, requirements to keep records, submit source testing protocols, and provide notifications are administrative or procedural in nature and would not be expected to create any secondary adverse environmental effects. In addition, more stringent requirement of the best management practices is not expected to cause environmental impacts because facilities currently are implementing most of the best management practices and the additional best management practices do not require any major construction for the facilities.

PAR 1469 also contains requirements that may cause physical activities to occur at sites affected by the proposed project and these activities may create secondary adverse environmental impacts. For example, in order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing new add-on air pollution control devices (APCDs) to control hexavalent chromium emissions from Tier III tanks, relocating hexavalent chromium-containing tanks into buildings, installing building enclosures, conducting additional source tests, and the implementation of additional housekeeping and best management practices for all hexavalent chromium-containing tanks. Activities associated with tank relocations, ~~constructing~~ installing building enclosures ~~constructions~~, and installing APCDs are treated as construction impacts while conducting source tests and implementing housekeeping are considered operational impacts. Thus, the analysis in this ~~Revised Final Draft~~ EA focuses on the potential secondary adverse environmental impacts associated with these activities. To evaluate these impacts, the following assumptions were relied upon in the analyses for the 115 facilities in SCAQMD's jurisdiction that are subject to PAR 1469:

Construction:

- ~~55~~ 64 facilities have ~~118-103~~ Tier III tanks that would be required to have ~~118-103~~ APCDs installed within 36 months after the date of adoption of PAR 1469.
- Each APCD consists of ductwork, one blower, one mist eliminator and one HEPA filter system.
- An additional 27 APCDs are assumed to be installed at 27 decorative chrome electroplating, hard chrome electroplating or chromic acid anodizing facilities that use CFS without a HEPA or equivalent APCD in the event that no chemical fume suppressants will be certified prior to July 1, 2022. The owners/operators of these affected facilities will need to plan for and install the APCDs prior to this date. The construction schedule for installing these APCDs is estimated to occur over a 10-month period from 5/1/2021—7/1/2021 ~~October 2020 to July 2021~~.
- For each tank required to be controlled under PAR 1469, one APCD is assumed to be installed. This is a conservative assumption that overestimates the actual number of APCDs that may be installed and resulting impacts from construction and operation, for the following reasons:

- Equipment associated with multiple APCDs being delivered to one facility can be shipped on the same truck;
 - Some facilities may be able to vent emissions from multiple tanks to one APCD, depending on the proximity of the tanks relative to the location of the APCD;
 - Some facilities may be able to either vent a Tier III tank to an existing APCD, provided there is enough capacity to handle the extra flow, or upgrade an existing APCD to accommodate any additional tanks.
 - Facilities that conduct chromic acid anodizing may have some tanks that would be considered Tier III tanks depending on the concentration of hexavalent chromium in the tanks and if air sparging is used as the agitation method. However, industry representatives indicated that these tanks would be converted to use mechanical agitation, such as eductors. By modifying the agitation method, the tanks would not be considered a Tier III tank and therefore not require APCDs to be installed.
- Up to 6 stripping tanks may need to undergo minor construction activities because the tanks are currently located outside of a building. In order to comply with the building enclosure requirements prescribed in subdivision (e) of PAR 1469, these tanks will need to be relocated inside a building. The tank relocation is expected to occur within 90 days after the date of adoption of PAR 1469.
 - Some facilities may need to modify the buildings in which the tanks are operating in order to comply with the maximum three and a half percent (3.5%) building opening of the building envelope enclosure requirement in subdivision (e). Based on observations from site visits and survey results, the building improvements that may be necessary are expected to be minor. Modifications to those buildings to meet the requirements of PAR 1469 include closing doors, windows, and other openings or installing a roll-up door or plastic strip curtains. These activities can be accomplished with one to several employees in a short period of time (from one to three days) using hand tools and onsite materials. PAR 1469 does not require that all openings to be closed, only specific openings and allows openings that represent up to 3.5% three and a half percent of the building envelope. Therefore, the environmental impacts associated with the building improvement activities that may be employed to comply with the 3.5% three and a half percent building enclosure requirement are considered to be negligible and are not evaluated further.
 - For the “worst-case” peak construction day, the analysis in the Draft EA assumed that 12 APCDs are assumed to would be constructed on a given day. SCAQMD staff used the total numbers of APCD divided by 12 months which was is a very conservative assumption and approach at that time. To adjust the analysis to reflect the revisions to PAR 1469 that occurred after the release of the Draft EA for public review and comment, The construction for two additional permanent total enclosures (PTEs) would also need to be constructed on a peak construction day. For the purpose of this analysis, the construction of two PTEs is are equivalent to the construction of two APCDs. Thus, the analysis has been revised to conservative approach is to assume that 14 APCDs would to be constructed on a peak day.
 - The installation of one APCD will require one air compressor, one welder, one forklift, and one aerial lift to operate four hours per day for five days and will require a construction

crew consisting of six members (1 vendor driving a medium duty delivery truck (MDT) and 5 workers driving light duty vehicles (LDA/LDT1/LDT2)).

- The relocation of one tank will require one forklift and one welder to operate four hours per day for one day. The analysis assumes that only one construction crew (the welder who is not a facility employee) will drive one LDA/LDT1/LDT2 vehicle to do the welding work. All other work can be done by facility employees.
- CalEEMod version 2016.3.2 will be used to analyze the emissions from vehicle trips during construction.
- Tier II Hexavalent Chromium Tanks have the potential to emit hexavalent chromium emissions at a rate between 0.20 mg/hr to 0.40 mg/hr and controls such as mechanical fume suppressants or tank covers can be utilized to reduce hexavalent chromium emissions to below 0.20 mg/hr. For this reason, no construction activities are assumed for Tier II Hexavalent Chromium Tanks to comply with PAR 1469.

Operation:

- Up to 89 98-facilities will need to comply with either the full or screening source testing requirements described in subdivision (k) of PAR 1469 for the Tier III tanks. Owners/operators of affected facilities would be expected to hire a source testing company to do the work. This analysis assumes that one source testing vehicle (LDT) with a 2-person crew and one maintenance truck (MDV) with a 2-person crew will each drive approximately 40 miles round trip each day to conduct the required source tests or emission screening tests at each facility.
- For the “worst-case” peak operation day, up to four source testing vehicles and four maintenance trucks will be conducting source tests or emissions screening tests on the same day.
- Any facility that exceeds the emissionsource test limits in PAR 1469 after a non-passing source test re-testing will be subject to requirements to install a permanent total enclosure with negative air pressure vented to pollution controls. The installation of the permanent total enclosure and negative air will have associated vehicle trips and equipment to complete the installation and these activities are considered as construction impacts. Implementing a negative air control system will have associated electricity use. The electricity use is are-considered anas operational impacts.
- No additional employees are expected to be hired as a result of PAR 1469.

Subsequent to the release of the Draft EA for public review and comment, modifications were made to PAR 1469 that are described in the Project Description section in Chapter 1 and these changes are also reflected in the above assumptions. Staff has reviewed these modifications and concluded that overall, no new impacts to any environmental topic area are anticipated to result from these modifications. Further, the impacts previously evaluated in the Draft EA would not be made substantially worse and the conclusions reached in the Draft EA remain unchanged in both the Final EA and the Revised Final EA with respect to the latest version of PAR 1469. Thus, staff has concluded that none of the modifications constitute significant new information of substantial

importance relative to the Draft EA. In addition, revisions to PAR 1469 in response to verbal or written comments would not create new, avoidable significant effects. As a result, these revisions do not require recirculation of the document pursuant to CEQA Guidelines Sections 15073.5 and 15088.5.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
I. AESTHETICS. Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

The proposed project impacts on aesthetics will be considered significant if:

- The project will block views from a scenic highway or corridor.
- The project will adversely affect the visual continuity of the surrounding area.
- The impacts on light and glare will be considered significant if the project adds lighting which would add glare to residential areas or sensitive receptors.

Discussion

PAR 1469 will further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations by: 1) requiring the installation of air pollution control devices (APCDs) for tanks meeting specified criteria; 2) requiring periodic source testing and parametric monitoring of APCDs to be conducted; 3) regulating use of chemical fume suppressants; 4) implementing additional housekeeping and best management practices; and 5) complying with building enclosure provisions. Facilities affected by PAR 1469 are primarily located in existing industrial, commercial or mixed land use areas. In order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing APCDs, relocating hexavalent chromium-containing tanks into the buildings, upgrading building enclosures to meet the requirements of PAR 1469, conducting additional source tests, housekeeping, and implementing best management practices. Therefore, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, electricity to operate APCDs, additional source test vehicle trips, APCD maintenance truck trips, and water use for conducting wet cleaning are expected to occur during the implementation of PAR 1469.

I. a), b) c) & d) No Impact. To reduce hexavalent chromium emissions from the affected facilities, new APCDs (e.g., HEPA filters) will need to be installed or in some instances, older or less efficient APCDs may need to be replaced with newer, cleaner, more efficient APCDs. In addition, in order to comply with the building enclosure requirements in PAR 1469, some facilities may need to relocate their tanks from outside of the building to inside.

Due to the size and weight of the APCD that may need to be replaced or installed and the tanks that may need to be relocated, construction equipment such as aerial lifts, compressors, welders, and forklifts, et cetera, will be needed to carry out these activities. Chromium electroplating and chromic acid anodizing facilities work with all sizes of products so it is not uncommon for these facilities to already have aerial lifts, forklifts and other types of heavy equipment on site as part of their day-to-day operations. An aerial lift, when fully extended may be temporarily visible in the surrounding areas while in use if the construction work is primarily occurring outside of existing buildings or structures. However, the visibility of an aerial lift to surrounding areas will also depend on where the equipment is located within each facility's property boundary. Except for the use of aerial lift, the majority of the construction equipment is expected to be low in height and not substantially visible to the surrounding area due to existing fencing along the property lines and existing structures currently within the facilities that may buffer the views of the construction activities.

Because each affected facility is located in existing industrial, commercial or mixed land use areas, the construction equipment is not expected to be substantially discernable from what exists on-site for routine operations and maintenance activities. Further, the construction activities are not expected to adversely impact views and aesthetics resources since most of the heavy equipment and activities are expected to occur within the confines of each existing enclosed facility and are expected to introduce only minor visual changes to areas outside each facility, if at all, depending on the location of the construction activities within the facility.

Lastly, the construction activities are expected to be temporary in nature and will cease following completion of the installation of new or modifications to existing APCDs or relocation of tanks. Once construction of any new or modified APCDs and tank relocations are completed, any construction equipment that has been rented will be removed from each facility. Further, these new or modified APCDs would be expected to blend in with the existing industrial profile at the affected facilities because the heights of these units are typically smaller when compared to neighboring existing equipment onsite and their associated stack heights would be about the same or shorter than existing stacks within the affected facilities.

PAR 1469 also contains requirements for facility owners or operators to conduct periodic source testing and parametric monitoring of APCDs, and to conduct additional housekeeping and implement best management practices for all hexavalent chromium ~~containing~~ tanks. These low-profile activities are limited to occur within each facility's property such that scenic vistas would not be affected.

Therefore, any potential construction and operation of new and modified existing APCDs and tanks as a result of the proposed project would not be expected to damage, degrade, or obstruct scenic resources and the existing visual character of any site in the vicinity of affected facilities.

There are no components in PAR 1469 that would require construction activities to occur at night. Further, cities often have their own limitations and prohibitions that restrict construction from

occurring during evening hours and weekends. Therefore, no additional temporary construction lighting at the facility would be expected. Similarly, while the proposed project has no provisions that would require affected equipment to operate at night, some facilities currently operate multiple shifts and existing lighting is utilized during the nighttime shifts. For those facilities that are projected to modify existing buildings or install APCDs, once construction is complete, additional permanent light fixtures may be installed on or near the new or modified structures for safety and security reasons. These permanent light fixtures should be positioned to direct light downward toward equipment within the facility so as to not create additional light or glare offsite to residences or sensitive receptors. Therefore, the proposed project is not expected to create a new source of substantial light or glare at any of the affected facilities in a manner that would adversely affect day or nighttime views in the surrounding areas.

Conclusion

Based upon these considerations, significant adverse aesthetics impacts are not expected from implementing PAR 1469. Since no significant aesthetics impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
II. AGRICULTURE AND FORESTRY RESOURCES. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland mapping and Monitoring Program of the California Resources Agency, to non- agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Project-related impacts on agriculture and forestry resources will be considered significant if any of the following conditions are met:

- The proposed project conflicts with existing zoning or agricultural use or Williamson Act contracts.
- The proposed project will convert prime farmland, unique farmland or farmland of statewide importance as shown on the maps prepared pursuant to the farmland mapping and monitoring program of the California Resources Agency, to non-agricultural use.
- The proposed project conflicts with existing zoning for, or causes rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined in Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)).
- The proposed project would involve changes in the existing environment, which due to their location or nature, could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use.

Discussion

PAR 1469 will further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations by: 1) requiring the installation of air pollution control devices (APCDs) for tanks meeting specified criteria; 2) requiring periodic source testing and parametric monitoring of APCDs to be conducted; 3) regulating use of chemical fume suppressants; 4) implementing additional housekeeping and best management practices; and 5) complying with building enclosure provisions. Facilities affected by PAR 1469 are primarily located in existing industrial, commercial or mixed land use areas. In order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing APCDs, relocating hexavalent chromium-containing tanks into the buildings, upgrading building enclosures to meet the requirements of PAR 1469, conducting additional source tests, housekeeping, and implementing best management practices. Therefore, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, electricity to operate APCDs, additional source test vehicle trips, APCD maintenance truck trips, and water use for conducting wet cleaning are expected to occur during the implementation of PAR 1469.

II. a), b), c), & d) No Impact. Compliance with PAR 1469 is expected to be met by installing or replacing APCDs, relocating tanks, installing building enclosures, and conducting additional source tests and parametric monitoring of APCDs. Since both construction and operation activities resulting from the that would occur as a result of implementation of the proposed project would occur within the existing boundaries of each affected facility, there are no provisions in PAR 1469 that would affect land use plans, policies, or regulations. Land use and other planning considerations are determined by local governments and no land use or planning requirements affecting relative to agricultural resources would be altered by the proposed project. For these reasons, implementation of PAR 1469 would not convert farmland to non-agricultural use or conflict with zoning for agriculture use or a Williamson Act contract. Furthermore, it is not expected that PAR 1469 would conflict with existing zoning for, or cause rezoning of, forest land; or result in the loss of forest land or conversion of forest land to non-forest use. Consequently, the proposed project would not create any significant adverse agriculture or forestry impacts.

Conclusion

Based upon these considerations, significant adverse agriculture and forestry resources impacts are not expected from implementing PAR 1469. Since no significant agriculture and forestry resources impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
III. AIR QUALITY AND GREENHOUSE GAS EMISSIONS.				
Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Diminish an existing air quality rule or future compliance requirement resulting in a significant increase in air pollutant(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Significance Criteria

To determine whether or not air quality and greenhouse gas impacts from implementing PAR 1469 are significant, impacts will be evaluated and compared to the criteria in Table 2-1. PAR 1469 will be considered to have significant adverse impacts if any one of the thresholds in Table 2-1 are equaled or exceeded.

**Table 2-1
SCAQMD Air Quality Significance Thresholds**

Mass Daily Thresholds ^a		
Pollutant	Construction ^b	Operation ^c
NO_x	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM₁₀	150 lbs/day	150 lbs/day
PM_{2.5}	55 lbs/day	55 lbs/day
SO_x	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
Toxic Air Contaminants (TACs), Odor, and GHG Thresholds		
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk \geq 10 in 1 million Cancer Burden $>$ 0.5 excess cancer cases (in areas \geq 1 in 1 million) Chronic & Acute Hazard Index \geq 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
GHG	10,000 MT/yr CO ₂ eq for industrial facilities	
Ambient Air Quality Standards for Criteria Pollutants ^d		
NO₂ 1-hour average annual arithmetic mean	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.03 ppm (state) and 0.0534 ppm (federal)	
PM₁₀ 24-hour average annual average	10.4 $\mu\text{g}/\text{m}^3$ (construction) ^e & 2.5 $\mu\text{g}/\text{m}^3$ (operation) 1.0 $\mu\text{g}/\text{m}^3$	
PM_{2.5} 24-hour average	10.4 $\mu\text{g}/\text{m}^3$ (construction) ^e & 2.5 $\mu\text{g}/\text{m}^3$ (operation)	
SO₂ 1-hour average 24-hour average	0.25 ppm (state) & 0.075 ppm (federal – 99 th percentile) 0.04 ppm (state)	
Sulfate 24-hour average	25 $\mu\text{g}/\text{m}^3$ (state)	
CO 1-hour average 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) and 35 ppm (federal) 9.0 ppm (state/federal)	
Lead 30-day Average Rolling 3-month average	1.5 $\mu\text{g}/\text{m}^3$ (state) 0.15 $\mu\text{g}/\text{m}^3$ (federal)	

^a Source: SCAQMD CEQA Handbook (SCAQMD, 1993)

^b Construction thresholds apply to both the South Coast Air Basin and Coachella Valley (Salton Sea and Mojave Desert Air Basins).

^c For Coachella Valley, the mass daily thresholds for operation are the same as the construction thresholds.

^d Ambient air quality thresholds for criteria pollutants based on SCAQMD Rule 1303, Table A-2 unless otherwise stated.

^e Ambient air quality threshold based on SCAQMD Rule 403.

KEY: lbs/day = pounds per day ppm = parts per million $\mu\text{g}/\text{m}^3$ = microgram per cubic meter \geq = greater than or equal to
MT/yr CO₂eq = metric tons per year of CO₂ equivalents $>$ = greater than

Revision: March 2015

Discussion

PAR 1469 will further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations by: 1) requiring the installation of air pollution control devices (APCDs) for tanks meeting specified criteria; 2) requiring periodic source testing and parametric monitoring of APCDs to be conducted; 3) regulating use of chemical fume suppressants; 4) implementing additional housekeeping and best management practices; and 5) complying with building enclosure provisions. Facilities affected by PAR 1469 are primarily located in existing industrial, commercial or mixed land use areas. In order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing APCDs, relocating hexavalent chromium-containing tanks into the buildings, upgrading building enclosures to meet the requirements of PAR 1469, conducting additional source tests, housekeeping, and implementing best management practices. Therefore, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, electricity to operate APCDs, additional source test vehicle trips, APCD maintenance truck trips, and water use for conducting wet cleaning are expected to occur during the implementation of PAR 1469.

III. a) No Impact. The SCAQMD is required by law to prepare a comprehensive district-wide Air Quality Management Plan (AQMP) which includes strategies (e.g., control measures) to reduce emission levels to achieve and maintain state and federal ambient air quality standards, and to ensure that new sources of emissions are planned and operated to be consistent with the SCAQMD's air quality goals. The AQMP's air pollution reduction strategies include control measures which target stationary, area, mobile and indirect sources. These control measures are based on feasible methods of attaining ambient air quality standards. Pursuant to the provisions of both the state and federal Clean Air Acts, the SCAQMD is also required to attain the state and federal ambient air quality standards for all criteria pollutants.

The most recent regional blueprint for how the SCAQMD will achieve air quality standards and healthful air is outlined in the 2016 AQMP⁹ which contains multiple goals of promoting reductions of criteria air pollutants, greenhouse gases, and toxics. In particular, the 2016 AQMP contains control measure TXM-02: Control of Toxic Metal Particulate Emissions from Plating and Anodizing Operations, which identifies Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid and Anodizing Operations, to specifically address reducing fugitive particulate matter (PM) emissions and hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations.

PAR 1469 has been crafted to further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations and will result in the installation of APCDs, tank relocations, ~~adding and improving building enclosures or buildings requirements.~~ PAR 1469 will also require additional source tests and parametric monitoring of APCDs, additional housekeeping, and implementation of best management practices. Upon implementation, PAR 1469 would be expected to reduce exposure to hexavalent chromium emissions ~~of affecting~~ neighboring businesses and residents.

For these reasons, PAR 1469 is not expected to obstruct or conflict with the implementation of the 2016 AQMP. ~~because~~ The emission reductions from implementing PAR 1469 are in accordance

⁹ SCAQMD, Final 2016 Air Quality Management Plan, March, 2017. <http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/final-2016-aqmp/final2016aqmp.pdf>

with the emission reduction goals in the 2016 AQMP. PAR 1469 will help reduce toxic and fugitive PM emissions which are consistent with the goals of the 2016 AQMP. Therefore, implementing PAR 1469 to reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations would not conflict with or obstruct implementation of the applicable air quality plan. Since no significant impacts were identified for this issue, no mitigation measures are necessary or required.

III. b) and f) Less Than Significant Impact. The determination of whether a project will conflict with or obstruct implementation of the SCAQMD's 2016 AQMP and/or diminish an existing air quality rule or future compliance requirement resulting in a significant increase in air pollutants is dependent on construction and operational activities associated with the proposed project. While PAR 1469 does not contain any requirements for facilities to build new chromium electroplating and chromic acid anodizing operations, some requirements in PAR 1469 may be expected to cause existing facilities to make physical modifications that may require some construction activities as well as operational changes, once construction is completed.

It is important to note that SCAQMD staff is not aware of any new chromium electroplating and chromic acid anodizing operations facilities planned to be constructed in the immediate future and is unable to predict or forecast, when, if any, would be built in the long-term. Therefore, in accordance with CEQA Guidelines Section 15145, an evaluation of construction and operation impacts for new facilities is concluded to be speculative and will not be evaluated further in this analysis.

Instead, the focus of the analysis will be on the 115 existing facilities and the effects of complying with PAR 1469 (e.g. physical modifications requiring construction or operational changes) as explained in the following discussion.

Construction Activities

The primary source of air quality construction impacts would be from PAR 1469's key requirements to install new APCDs and associated ventilation systems as needed, remove the old existing APCDs (if any) and replace with the new ones, relocate tanks currently operating outside of the buildings by moving them inside, and construct building enclosures.

Operational Activities

Similarly, the primary source of air quality impacts during operation would be from the requirements to maintain the APCDs and conduct additional source tests of the APCDs. Thus, the analysis focuses on the potential secondary adverse environmental impacts from these activities during operation. Other operational activities including conducting parametric monitoring of APCDs, implementing additional housekeeping and best management practices, maintaining minimum freeboard height on certain tanks and reducing allowable surface tension limits are all ~~procedural support~~ activities to help achieve beneficial reductions in hexavalent chromium emissions without creating any adverse air quality impacts.

Table 2-2 summarizes the key requirements in PAR 1469 that may create secondary adverse air quality and greenhouse gas (GHG) impacts during construction and operation.

**Table 2-2
Sources of Potential Secondary Adverse Air Quality and GHG Impacts During
Construction and Operation**

Key Requirements in PAR 1469	Physical Actions Anticipated During:	
	Construction	Operation
Subdivision (d): Tanks currently operating outside of the buildings	Relocate tanks	None
Subdivision (e): Building enclosures	<ol style="list-style-type: none"> 1. Close the doors, windows, and other openings 2. Install roll-up doors or plastic strip curtains 	None
Subdivisions (f) & (g): Housekeeping and best management practices	None	Already in practice; minimal additional actions
Subdivision (h): Add-on air pollution control devices, parameter monitoring, and emission standards	Replace and/or install APCDs	<ol style="list-style-type: none"> 1. Air pollution control equipment (e.g., HEPA) operation 2. Vehicle trips due to filter replacement, waste disposal, and filter leak detection
Subdivision (k): Source test	None	Vehicle trips due to additional periodic source testing
Subdivision (t): <u>Installation of Permanent Total Enclosures (PTE)</u>	<u>Construction and Installation of PTEs for Tier III tanks</u>	<u>None</u>

For the purpose of the conducting a worst-case CEQA analysis, for the 115 chromium electroplating and chromic acid anodizing operations facilities that will be subject to PAR 1469, the following assumptions have been made:

- ~~55-61~~ facilities have ~~103-118~~ Tier III tanks that would be required to have ~~103-118~~ APCDs installed within 36 months after the date of adoption of PAR 1469. Each APCD consists of ductwork, one blower, one mist eliminator and one HEPA filter system. Table 2-3 summarizes the APCD installation schedule based on the type of facilities subject to the requirements in PAR 1469.

**Table 2-3
Estimated APCD Installation Schedule**

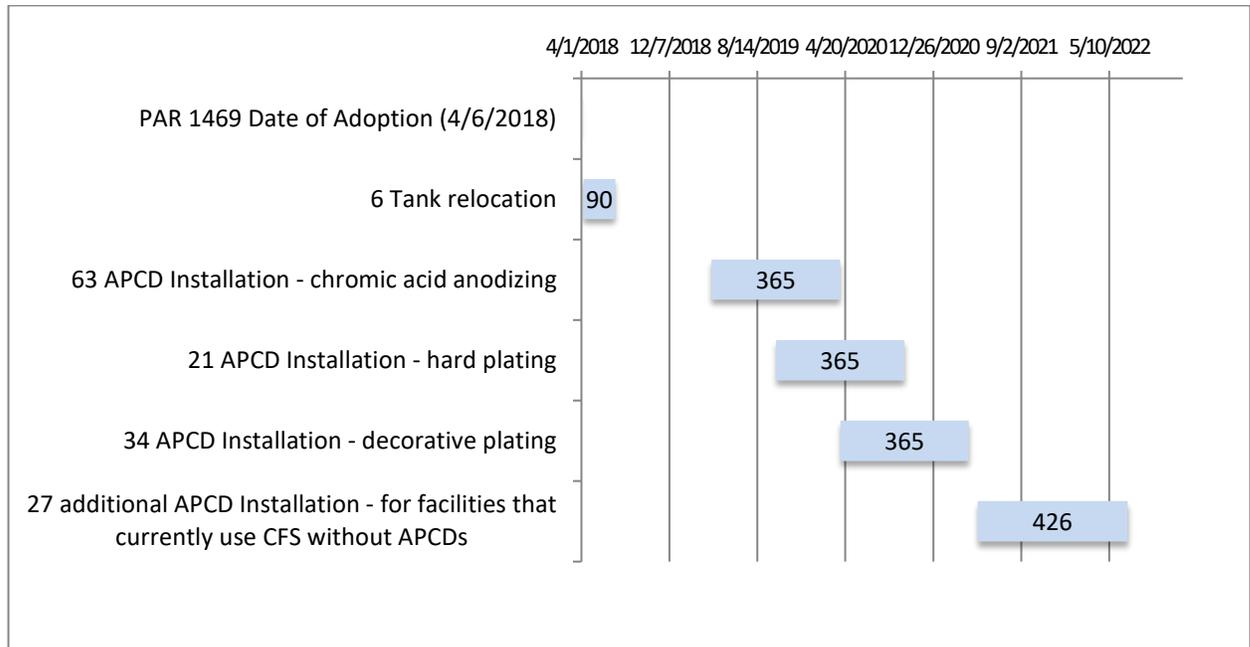
Type of facilities	Estimated number of APCDs to be installed at the time of Draft EA	<u>Estimated number of APCDs to be installed at the time of Final EA*</u>	Estimated construction schedule at the time Draft EA	<u>Estimated construction schedule at the time of Final EA*</u>
Chromic Acid Anodizing	63	<u>71</u>	4/1/2019 – 4/1/2020	<u>9/2019 – 9/2020</u>
Hard Plating	21	<u>21</u>	10/1/2019 – 10/1/2020	<u>3/2020 – 3/2021</u>
Decorative Plating	34	<u>11</u>	4/1/2020 – 4/1/2021	<u>9/2020 – 9/2021</u>

* At the time of both the Final EA and Revised Final EA.

- An additional 27 APCDs are assumed to be installed at 27 decorative chrome electroplating, hard chrome electroplating or chromic acid anodizing facilities that use CFS without a HEPA or equivalent APCD in the event that no CFS will be certified prior to July 1, 2022. The owners/operators of these affected facilities will need to plan for and install the APCDs prior to this date. The construction schedule for installing these APCDs is estimated to occur from ~~5/1/2021~~10/2020 – ~~7/1/2021~~7/2021;
- For each tank required to be controlled under PAR 1469, one APCD is assumed to be installed. This is a conservative assumption that overestimates actual number of APCDs that may be installed and resulting impacts from construction and operation, for the following reasons:
 - Equipment associated with multiple APCDs being delivered to one facility can be shipped on the same truck;
 - Some facilities may be able to vent emissions from multiple tanks to one APCD, depending on proximity of the tanks relative to the location of the APCD;
 - Some facilities may be able to either vent a Tier III tank to an existing APCD, provided there is enough capacity to handle the extra flow, or upgrade an existing APCD to accommodate any additional tanks.
 - Facilities that conduct chromic acid anodizing may have some tanks that would be considered Tier III tanks depending on the concentration of hexavalent chromium in the tanks and if air sparging is used as the agitation method. However, industry representatives indicated that these tanks would be converted to use mechanical agitation, such as eductors. By modifying the agitation method, the tanks would not be considered a Tier III tank and therefore not require APCDs to be installed.

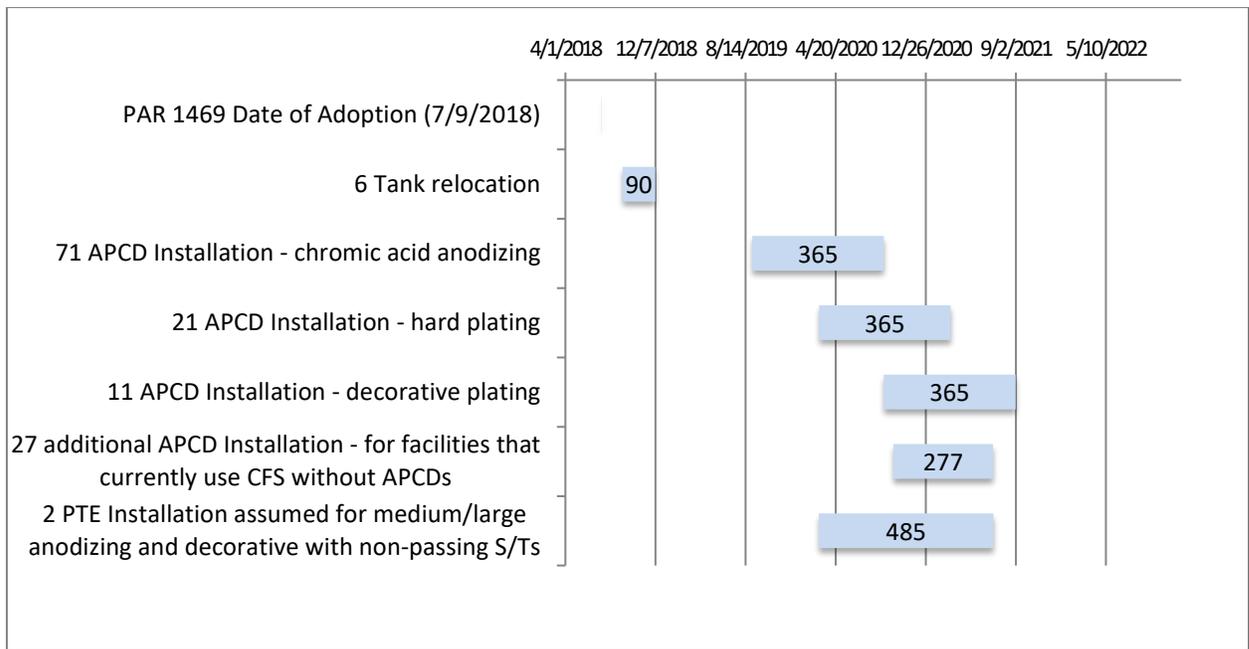
- Up to 6 stripping tanks may need to undergo minor construction activities because the tanks are currently located outside of a building. In order to comply with the building enclosure requirements prescribed in subdivision (e) of PAR 1469, these tanks will need to be relocated inside a building. The tank relocation is expected to occur within 90 days after the date of adoption of PAR 1469.
- Some facilities may need to modify the buildings in which the tanks are operating in order to comply with the ~~three percent~~ 3.5% building enclosure requirement in subdivision (e). Based on observations from site visits and survey results, the building improvements that may be necessary are expected to be minor. For example, to achieve a building enclosure, some buildings may only need to have the doors, windows, and other openings closed or a roll-up door or plastic strip curtains installed. These activities can be accomplished with one to several employees in a short period of time (from one to three days) using hand tools and onsite materials. Therefore, the environmental impacts associated with the building improvement activities that may be employed to comply with the 3.5% ~~three percent~~ building enclosure requirement are considered to be negligible and are not included in this analysis.
- The timing of when PTEs are expected to be constructed is dependent on criteria outlined in subdivision (t). For example, a PTE installation will be required for any facility that has consistently shown the equipment cannot meet the point source emission requirement or if operators fail to adhere to the requirements to shut down a tank that fails specific parameter monitoring provisions. Also, a PTE would be required in the event of not passing a source test or operating a tanks without the proper add-on air pollution control device. This analysis assumes that two facilities will trigger the requirement to install a total of two PTEs. A total of two PTEs are assumed to be installed over a four-month between March 2020 and July 2021.
- Figure 2-1 illustrates the estimated construction days and schedule per requirement and tank types at the time the Draft EA was released for public review and comment.
- Figure 2-2 illustrates the revised estimated construction days and schedule per requirement and tank types to reflect the latest version of PAR 1469 that is addressed in at the time of this Final EA¹⁰.

¹⁰ At the time of both the August 2018 Final EA and October 2018 Revised Final EA.



Key: APCD = Air Pollution Control Device; and CFS = chemical fume suppressant

Figure 2-1
Estimated Construction Days and Schedule by Different Rule Requirements And Tank Types as presented in the Draft EA



Key: S/T = Source Test; APCD = Air Pollution Control Device; and CFS = chemical fume suppressant

Figure 2-2
Revised Estimated Construction Days and Schedule by Different Rule Requirements And Tank Types as presented in the Final EA¹¹

¹¹ At the time of both the Final EA and Revised Final EA.

- According to the construction schedule in Table 2-3 and Figure 2-42, a total of 130 APCDs and two PTEs will be installed. For the “worst-case” peak construction day, the analysis in the Draft EA assumed that 12 APCDs would be constructed on a given day. To adjust the analysis to reflect the revisions to PAR 1469 that occurred after the release of the Draft EA for public review and comment, the analysis has been revised to assume that 12 APCDs plus two PTEs would be constructed on a peak day. For the purpose of this analysis, the construction needed to build two PTEs is equivalent to constructing two APCDs over a five-month period from March 2020 to September 2020. ~~on a “worst-case” peak construction day, up to 12 APCDs are assumed to be constructed on a given day from 10/1/2019 to 4/1/2020.~~
- The installation of one APCD will require one air compressor, one welder, one forklift, and one aerial lift to operate four hours per day for five days and will require a construction crew consisting of six members (1 vendor driving a medium duty delivery truck (MDT) and 5 workers driving light duty vehicles (LDA/LDT1/LDT2)).
- The relocation of one tank will require one forklift and one welder to operate four hours per day for one day. The analysis assumes that only one construction crew (the welder who is not a facility employee) will drive one LDA/LDT1/LDT2 vehicle to do the welding work. All other work can be done by facility employees.
- CalEEMod version 2016.3.2 will be used to analyze the emissions from vehicle trips during construction.
- Up to ~~89~~ 98 facilities will need to comply with either the full or screening source testing requirements described in subdivision (k) of PAR 1469 for the Tier III tanks. Owners/operators of affected facilities would be expected to hire a source testing company to do the work. This analysis assumes that one source testing vehicle (LDT) with a 2-person crew and one maintenance truck (MDV) with a 2-person crew will each drive approximately 40 miles round trip each day to conduct the required source tests or emission screening tests at each facility. These activities are considered operational impacts.
- For “worst-case” peak operation day, up to four source testing vehicles and four maintenance trucks will be conducting source tests or emissions screening tests on the same day.
- Any facility that exceeds the source test limits in PAR 1469 after re-testing will be required to install a permanent total enclosure with negative air. The installation of the permanent total enclosure and negative air will have associated vehicle and equipment to complete the installation and these activities are considered construction impacts. Implementing negative air pressure control system will have associated electricity use. The electricity use is ~~are~~ considered an operational impacts.
- CARB-EMFAC2014 will be used to analyze the emissions from vehicle trips during operation.
- No additional employees are expected to be hired as a result of PAR 1469.

Construction Impacts

Construction emissions were estimated by using the California Emissions Estimator Model® version 2016.3.2 (CalEEMod¹²). To install APCDs and to relocate tanks to the inside of the buildings, the use of the following construction off-road equipment was assumed: air compressor, welder, forklift, and aerial lift¹³. In addition, emissions from all on-road vehicles transporting workers, vendors, and material removal and delivery during construction were also calculated using CalEEMod. The detailed output reports for the CalEEMod runs are included in Appendix C of this Revised Final Draft EA. Table 2-4 and Table 2-5 summarize the results of the construction air quality analysis during the tank relocations and APCD installations, respectively. Appendix C also contains the spreadsheets with the results and assumptions used for this analysis.

Table 2-4
Peak Daily Construction Emissions During Tank Relocations^{a, b, c, & d}

Construction Activity	VOC (lb/day)	NOx (lb/day)	CO (lb/day)	SOx (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
3 tank relocations occurring on a peak day	1.13	5.43	6.30	0.01	0.75	0.45
Total Peak Daily Construction Emissions	1.13	5.43	6.30	0.01	0.75	0.45
SIGNIFICANCE THRESHOLD FOR CONSTRUCTION	75	100	550	150	150	55
SIGNIFICANT?	NO	NO	NO	NO	NO	NO

- The emissions are estimated using CalEEMod version 2016.3.2.
- Tank relocations are expected to occur during the first 90 days after the rule is adopted. Three tank relocations are expected to occur on a peak day.
- Appendix C contains the detailed calculations.
- Subsequent to the release of the Draft EA, modifications were made to PAR 1469. However, the calculations in the Draft EA for construction activities relative to relocations were not affected by the modifications made to PAR 1469. Thus, the calculations in this table remain unchanged from the Draft EA and demonstrate that no significant adverse air quality impacts during tank relocation construction activities would be expected to occur.

¹² CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use projects.

¹³ In general, no or limited construction emissions from grading are anticipated because modifications or installation of new APCD would occur at existing industrial/commercial facilities and, therefore, would not be expected to require digging, earthmoving, grading, etc.

Table 2-5
Peak Daily Construction Emissions During APCD and PTE Installations^{a, b, c, & d}

Construction Activity	VOC (lb/day)	NOx (lb/day)	CO (lb/day)	SOx (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
12 APCD installations occurring on a peak day	7.17	42.02	46.60	0.08	4.30	3.13
<u>2 PTE installations occurring on a peak day</u>	<u>1.20</u>	<u>7.00</u>	<u>7.80</u>	<u>0.01</u>	<u>0.72</u>	<u>0.52</u>
Total Peak Daily Construction Emissions	<u>8.37</u> 7.17	<u>49.02</u> 42.02	<u>54.40</u> 46.60	<u>0.09</u> 0.08	<u>5.02</u> 4.30	<u>3.65</u> 3.13
SIGNIFICANCE THRESHOLD FOR CONSTRUCTION	75	100	550	150	150	55
SIGNIFICANT?	NO	NO	NO	NO	NO	NO

- The emissions are estimated using CalEEMod version 2016.3.2.
- APCD installation is expected to occur one year after the rule is adopted and therefore, ~~these activities have~~ no overlap with tank relocation construction work presented in Table 2-4. ~~It is conservatively~~ The analysis assumed ~~that on a in the~~ peak day, there will be 12 APCD ~~and two PTE installations work~~ among PAR1469 affected facilities. For the purpose of this analysis, the construction needed to build two PTEs is equivalent to constructing 2 APCDs.
- Appendix C contains the detailed calculations.
- Subsequent to the release of the Draft EA, modifications were made to PAR 1469 and the calculations were revised to include construction emissions from two PTEs. Nonetheless, even with the additional emissions occurring on a peak day during construction, no significant air quality impacts during construction would be expected to occur.

The construction impact analysis assumes that it will take one week each to complete one APCD installation or one tank relocation. However, the actual construction time could be substantially less than one week for some facilities.

Based on the construction schedule in Table 2-3 and Figure 2-1, the peak daily emissions are expected to occur over a five-month period from 10/1/2019 March 2020 to 4/1/2020 September 2020, which assuming up to 12 APCD installations would occur on a peak day. Further, given the duration of the construction that each facility may undergo and the total 41-month timeframe for all the affected facilities to comply with the requirements in PAR 1469, the construction phases for some facilities were assumed to overlap which resulted in 12 APCD ~~and two PTE~~ installations occurring on a peak day. Installation of the APCDs ~~and PTEs~~ is expected to occur starting from the second year after the rule is adopted ~~and up to 12 APCD is expected to occur on a peak day.~~ Tank relocations are expected to occur during the first 90 days after the rule is adopted and up to three tank relocations are expected to occur on a peak day.

As shown in Tables 2-4 and 2-5, the air quality impacts due to construction from implementing PAR1469 are expected to be less than significant.

Operational Impacts

As explained previously, secondary air quality operational impacts are expected to occur from the following activities: maintenance of the APCDs and conducting periodic source testing. Total operational emissions were estimated using CARB's EMFAC2014¹⁴ for following mobile sources: trucks for waste disposal, filter replacement, and leak detection, and vehicles to transport workers to conduct source testing. Currently, some of the affected facilities have existing APCDs that collect PM which is considered to be hazardous and as such, ~~the PM must~~ the PM must ~~requires to~~ be periodically sent to a certified landfill or recycling facility for proper disposal or recycling. After PAR 1469 is implemented, additional PM is expected to be collected by the APCDs, but the affected facilities are expected to continue their existing practices for handling their waste. Therefore, it is not expected to have increased waste disposal trucks occurring on a peak day due to implementing PAR 1469.

PAR 1469 would also require source testing of each APCD that is installed. In order to conduct source testing, additional vehicle trips to and from the facility on the day of source testing are expected to occur to transport personnel and equipment for the source test. The APCD maintenance work and source testing is expected to be conducted at ~~89 98~~ facilities and the following vehicles are assumed to be required per source test each year: one medium duty truck for waste disposal, filter replacement, or filter leak inspection truck; and one source testing vehicle.

Of the ~~89 98~~ facilities, four facilities are assumed to conduct maintenance of the APCDs and four facilities are assumed to conduct source testing on the same day, such that 4 trucks and 4 vehicles would be operating on a peak day. In addition, a round trip distance of 40 miles was assumed for every on-road vehicle used during operation. The air quality impacts during operation are summarized in Table 2-6. The detailed spreadsheets with the assumptions used for this analysis are provided in Appendix C.

¹⁴ The EMFAC emissions model is developed and used by CARB to assess emissions from on-road vehicles including cars, trucks, and buses in California. EMFAC2014 was approved by U.S. EPA on Dec. 14, 2015.
https://www.arb.ca.gov/msei/categories.htm#onroad_motor_vehicles

Table 2-6
Peak Daily Operational Emissions^{a, b, c, d, e, & f}

Key Activities During Operation	VOC (lb/day)	NOx (lb/day)	CO (lb/day)	SOx (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
Conduct source testing	0.01	0.03	0.39	0.00	0.07	0.72
Conduct maintenance on APCDs	0.01	0.03	0.10	0.00	0.13	0.04
Total Peak Daily Operational Emissions	0.02	0.06	0.48	0.00	0.20	0.75
SIGNIFICANCE THRESHOLD FOR DURING OPERATION	55	55	550	150	150	55
SIGNIFICANT?	NO	NO	NO	NO	NO	NO

- It is conservatively assumed in the peak day, there will be an additional four source test vehicles (LDA) and four maintenance trucks (MDT) to all PAR 1469 affected facilities.
- It is conservatively assumed in the peak year, there will be an additional ~~89~~ 98 source test vehicles (LDA) and ~~89~~ 98 maintenance trucks (MDT) to all PAR 1469 affected facilities.
- The increased medium duty truck is for the additional waste disposal truck, filter replacement, filter leak inspection and other maintenance work for the APCDs.
- Each LDA and each MDV is assumed to travel a round trip distance of 40 miles.
- See Appendix C for detailed calculations.
- Subsequent to the release of the Draft EA, modifications were made to PAR 1469. However, the calculations in the Draft EA for operation were not affected by the modifications made to PAR 1469. Thus, the calculations in this table remain unchanged from the Draft EA and demonstrate that no significant adverse air quality impacts during operation activities would be expected to occur.

As indicated in Table 2-6, operational emissions anticipated from implementing PAR 1469 do not exceed any significance threshold. Therefore, the operational air quality impact is considered less than significant. The proposed project is not expected to result in significant adverse operational criteria pollutant emission impacts.

Construction and Operation Overlap Impact

Given the number of affected facilities and the varying requirements for each affected facility to comply with PAR 1469 requirements, there is a possibility that there will be an overlap of construction activities and corresponding construction emissions occurring at some facilities with operational activities and corresponding operational emissions occurring at other facilities. Based on PAR 1469 requirements, the overlap will occur from the date of adoption of PAR 1469 until September 7/1/2021 which is when the last APCD installation work is expected to be completed. The most conservative maximum emissions during this overlap period are estimated in Table 2-7 which adds the peak daily construction emissions from Tables 2-4 and 2-5 and the peak daily operational emissions from Table 2-6 and compares the total to the operational emission significance thresholds which are lower than the significance thresholds during construction. Also, according to SCAQMD policy, the peak daily emissions from the construction and operation overlap period should be estimated and compared to the SCAQMD's CEQA significance thresholds for operation.

Table 2-7
Peak Daily Emissions in Construction and Operation Overlap Phase^{a, b, & c}

Construction and Operation Overlap Phase	VOC (lb/day)	NOx (lb/day)	CO (lb/day)	SOx (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
Peak Construction Emissions	<u>8.37</u> 7.17	<u>49.02</u> 42.02	<u>54.40</u> 46.60	<u>0.09</u> 0.08	<u>5.02</u> 4.30	<u>3.65</u> 3.13
Peak Operational Emissions	0.02	0.06	0.48	0.00	0.20	0.75
Total Emissions	<u>8.39</u> 7.19	<u>49.08</u> 42.08	<u>54.88</u> 47.08	<u>0.09</u> 0.08	<u>5.22</u> 4.50	<u>4.40</u> 3.88
SIGNIFICANCE THRESHOLD FOR OPERATION	55	55	550	150	150	55
SIGNIFICANT?	NO	NO	NO	NO	NO	NO

- The maximum construction impact during the overlap phase is conservatively assumed to be the peak daily construction emissions from Table 2-3.
- The maximum operational impact during the overlap phase is conservatively assumed to be the peak daily operational emissions from Table 2-4.
- Subsequent to the release of the Draft EA, modifications were made to PAR 1469 which triggered adjustments to the peak daily construction emissions presented in Table 2-5. Even with the revised construction calculations, the overlapping construction and operation activities demonstrates that no significant adverse air quality impacts would be expected to occur.

As indicated in Table 2-7, the peak daily emissions that are expected to occur during the construction and operational overlap period anticipated from implementing PAR 1469 do not exceed any of the SCAQMD's CEQA air quality significance thresholds. Therefore, the air quality impacts from construction and operation overlap are considered to be less than significant. In conclusion, the proposed project is not expected to result in significant adverse air quality impacts during the construction and operation overlap period.

Indirect Criteria Pollutant Emissions from Electricity Consumption

Indirect criteria pollutant and GHG emissions are expected from the generation of electricity to operate new APCDs that occurs off-site at electricity generating facilities (EGFs). Emissions from electricity generating facilities are already evaluated in the CEQA documents for EGF projects when they are built or modified. The analysis in Section VI - Energy b), c) and d) demonstrates that there is sufficient capacity from power providers for the increased electricity consumption needed to implement PAR 1469.

Under the SCAQMD's RECLAIM program, EGFs were provided or purchased annual allocations of NOx and SOx emissions that decline over time and these allocations are generally sufficient to cover the EGFs current customer usage and projected future growth. However, While PAR 1469 will cause an increase in energy use and a corresponding increase in emissions from the EGFs providing additional electricity (see Section VI - Energy for the analysis of the energy impacts), the projected minimal increase in NOx and SOx emissions would be expected to fall within the range of the EGF's annual allocations for these pollutants. If the annual allocations are not sufficient, aAny new potential NOx and SOx emission increases at the EGFs beyond the annual allocations would need to be offset under the RECLAIM program in accordance with SCAQMD Regulation XX and increases in other pollutants would need to be offset under the New Source Review program in accordance with SCAQMD Regulation XIII – New Source Review. Thus, air

quality impacts from electricity consumption are anticipated to be less than significant, because they were either previously evaluated and offset or will be evaluated under the New Source Review and additional offsets would be applied.

III. c) Less Than Significant Impact.

Cumulatively Considerable Impacts

Based on the foregoing analysis, since project-specific criteria pollutant air quality impacts from implementing PAR 1469 would not be expected to exceed the air quality significance thresholds in Table 2-1, cumulative air quality impacts are also expected to be less than significant. SCAQMD cumulative significance thresholds are the same as project-specific significance thresholds. Therefore, potential adverse impacts from implementing PAR 1469 would not be “cumulatively considerable” as defined by CEQA Guidelines Section 15064(h)(1) for air quality impacts. Per CEQA Guidelines Section 15064(h)(4), the mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project’s incremental effects are cumulatively considerable.

The SCAQMD guidance on addressing cumulative impacts for air quality is as follows: “As Lead Agency, the SCAQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or EIR.” “Projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant.”¹⁵

This approach was upheld by the court in *Citizens for Responsible Equitable Environmental Development v. City of Chula Vista* (2011) 197 Cal. App. 4th 327, 334. The Court determined that where it can be found that a project did not exceed the South Coast Air Quality Management District’s established air quality significance thresholds, the City of Chula Vista properly concluded that the project would not cause a significant environmental effect, nor result in a cumulatively considerable increase in these pollutants. The court found this determination to be consistent with CEQA Guidelines Section 15064.7, stating, “The lead agency may rely on a threshold of significance standard to determine whether a project will cause a significant environmental effect.” The court found that, “Although the project will contribute additional air pollutants to an existing nonattainment area, these increases are below the significance criteria...”. “Thus, we conclude that no fair argument exists that the Project will cause a significant unavoidable cumulative contribution to an air quality impact.” ~~As in *Chula Vista* and *Rialto Citizens for Responsible Growth*, here the SCAQMD has demonstrated, when using accurate and appropriate data and assumptions, that the project will not exceed the established SCAQMD significance thresholds. See also, *Rialto Citizens for Responsible Growth v. City of Rialto* (2012) 208 Cal. App. 4th 899. In *Rialto Citizens for Responsible Growth*, the court upheld the SCAQMD’s approach to utilizing the established air quality significance thresholds to determine whether the impacts of a project would be cumulatively considerable. See also, *Rialto Citizens for Responsible Growth v. City of Rialto* (2012) 208 Cal. App. 4th 899. As in *Chula Vista* and *Rialto Citizens for Responsible Growth*, here the SCAQMD has demonstrated, when using accurate and~~

¹⁵ SCAQMD Cumulative Impacts Working Group White Paper on Potential Control Strategies to Address Cumulative Impacts From Air Pollution, August 2003, Appendix D, Cumulative Impact Analysis Requirements Pursuant to CEQA, at D-3. <http://www.aqmd.gov/docs/default-source/Agendas/Environmental-Justice/cumulative-impacts-working-group/cumulative-impacts-white-paper-appendix.pdf>.

appropriate data and assumptions, that the project will not exceed the established SCAQMD significance thresholds. Thus, it may be concluded that the proposed project will not contribute to a significant unavoidable cumulative air quality impact.

III. d) Less Than Significant Impact. Diesel particulate matter (DPM) is considered a carcinogenic and chronic toxic air contaminant (TAC). Since the diesel equipment used during the construction of the tank relocation or APCD installation is expected to be a short-term project (i.e. no more than six months at any facility), a Health Risk Assessment (HRA) was not conducted. In addition, implementation of PAR 1469 is expected to create an environmental benefit by reducing toxic impacts by controlling fugitive PM emissions (containing hexavalent chromium) during operation. The analysis in Section III. b) and f) concluded that the quantity of pollutants that may be generated from implementing the proposed project would be less than significant during construction, operation, and the construction and operation overlap period. Thus, the quantity of pollutants that may be generated from implementing PAR 1469 would not be considered substantial, irrespective of whether sensitive receptors are located near the affected facilities. For these reasons, implementation of PAR 1469 is not expected to expose sensitive receptors to substantial pollutant concentrations. Therefore, no significant adverse air quality impacts to sensitive receptors are expected from implementing PAR 1469.

III. e) Less Than Significant Impact.

Odor Impacts

As previously explained, this analysis assumes that new or modified APCDs will be constructed and some tanks will be relocated at the affected facilities and these facilities already operate diesel equipment and trucks. With regard to odors, currently, for all diesel-fueled equipment and vehicles, the diesel fuel is required to have a low sulfur content (e.g., 15 ppm by weight or less) in accordance with SCAQMD Rule 431.2 – Sulfur Content of Liquid Fuels. Such fuel is expected to minimize odor. The operation of construction equipment will occur within the confines of existing affected facilities. Dispersion of diesel emissions over distance generally occurs so that odors associated with diesel emissions may not be discernable to offsite receptors, depending on the location of the equipment and its distance relative to the nearest offsite receptor. Further, the diesel trucks that will be operated onsite will not be allowed to idle longer than five minutes per any one location in accordance with the CARB idling regulation, so odors from these vehicles would not be expected for a prolonged period of time. Therefore, the addition of several pieces of construction equipment and trucks that will operate intermittently, over a relatively short period of time, are not expected to generate diesel exhaust odor substantially greater than what is already typically present at the affected facilities.

Operation of the new APCDs are also not expected to generate any new odors because these devices are electric and the process of collecting the metal PM in enclosed bags, containers and filters would mean that these odorous materials would be captured, such that the existing odor profiles at the affected facilities would be reduced. PAR 1469 prohibits the operation of Tier III tanks outside of a building and requires all affected facilities to conduct operations of ~~at~~ hexavalent chromium-containing tanks inside the building. The building enclosure requirements in PAR 1469 will also reduce odors at these facilities. Thus, PAR 1469 is not expected to create significant adverse objectionable odors during construction or operation. Since no significant impacts were identified for this issue, no mitigation measures for odors are necessary or required.

III. g) and h) Less Than Significant Impact.

Greenhouse Gas (GHG) Impacts

Significant changes in global climate patterns have recently been associated with global warming, an average increase in the temperature of the atmosphere near the Earth's surface, attributed to accumulation of GHG emissions in the atmosphere. GHGs trap heat in the atmosphere, which in turn heats the surface of the Earth. Some GHGs occur naturally and are emitted to the atmosphere through natural processes, while others are created and emitted solely through human activities. The emission of GHGs through the combustion of fossil fuels (i.e., fuels containing carbon) in conjunction with other human activities, appears to be closely associated with global warming. State law defines GHG to include the following: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆) (Health and Safety Code Section 38505(g)). The most common GHG that results from human activity is CO₂, followed by CH₄ and N₂O.

Traditionally, GHGs and other global warming pollutants are perceived as solely global in their impacts and that increasing emissions anywhere in the world contributes to climate change anywhere in the world. However, a study conducted on the health impacts of CO₂ “domes” that form over urban areas cause increases in local temperatures and local criteria pollutants, which have adverse health effects¹⁶.

The analysis of GHGs is different than the analysis of criteria pollutants for the following reasons. For criteria pollutants, the significance thresholds are based on daily emissions because attainment or non-attainment is primarily based on daily exceedances of applicable ambient air quality standards. Further, several ambient air quality standards are based on relatively short-term exposure effects on human health (e.g., one-hour and eight-hour standards). Since the half-life of CO₂ is approximately 100 years, for example, the effects of GHGs occur over a longer term. They affect the global climate over a relatively long timeframe. As a result, the SCAQMD's current position is to evaluate the effects of GHGs over a longer timeframe than a single day (i.e., annual emissions). GHG emissions are typically considered to have a cumulative impact because they contribute to global climate effects.

GHG emission impacts from implementing PAR 1469 were calculated at the project-specific level during construction and operation. For example, installation and operation of APCD has the potential to increase the use of fuel during construction and electricity during operation which will in turn increase CO₂ emissions.

The SCAQMD convened a Greenhouse Gas CEQA Significance Threshold Working Group to consider a variety of benchmarks and potential significance thresholds to evaluate GHG impacts. On December 5, 2008, the SCAQMD adopted an interim CEQA GHG Significance Threshold for projects where SCAQMD is the lead agency (SCAQMD 2008). This GHG interim threshold is set at 10,000 metric tons of CO₂ equivalent emissions (CO₂e) per year (MT/yr). Projects with incremental increases below this threshold will not be cumulatively significant-considerable.

¹⁶ Jacobsen, Mark Z. “Enhancement of Local Air Pollution by Urban CO₂ Domes,” Environmental Science and Technology, as describe in Stanford University press release on March 16, 2010 available at: <http://news.stanford.edu/news/2010/march/urban-carbon-domes-031610.html>.

Table 2-8 summarizes the GHG analysis which shows that PAR 1469 may result in the generation of ~~6.216.81~~ amortized¹⁷ MT/yr of CO₂e emissions during construction and 3.29 MT/yr of CO₂e emissions from mobile sources and 82.90 MT/yr of CO₂e emissions from electricity usage during operation from all the affected facilities for a total of 93.00 MT/yr of CO₂e emissions, which is less than the SCAQMD significance threshold of 10,000 MT/yr of CO₂e. The detailed calculations of project GHG emissions can be found in Appendix C.

Table 2-8
GHG Emissions From ~~89~~ 98-Affected Facilities¹⁸

Activity	CO ₂ e (MT/year ^a)
Construction ^b	6.81 6.21
Operation – mobile sources	3.29
Operation – electricity usage	82.90
Total Project Emissions	93.00
SIGNIFICANCE THRESHOLD	10,000
SIGNIFICANT?	NO

^a 1 metric ton = 2,205 pounds

^b GHGs from short-term construction activities are amortized over 30 years

Thus, as shown in Table 2-8 the SCAQMD's GHG significance threshold for industrial sources will not be exceeded. For this reason, implementing the proposed project is not expected to generate significant adverse cumulative GHG air quality impacts. Further, PAR 1469 is not expected to generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment or conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHG gases.

Conclusion

Based upon these considerations, significant air quality and GHG emissions impacts are not expected from implementing PAR 1469. Since no significant air quality and GHG emissions impacts were identified, no mitigation measures are necessary or required.

Subsequent to the release of the Draft EA for public review and comment, modifications were made to PAR 1469 that caused some of the calculations in this section to be revised. Staff has reviewed the modifications to PAR 1469 and the revised calculations and concluded that none of the revisions constitute: 1) significant new information; 2) a substantial increase in the severity of an environmental impact; or, 3) provide new information of substantial importance relative to the Draft EA. In addition, revisions to the proposed project in response to verbal or written comments would not create new, avoidable significant effects.

¹⁷ GHGs from short-term construction activities are amortized over 30 years. To amortize GHGs from temporary construction activities over a 30-year period (est. life of the project/ equipment), the amount of CO₂e emissions during construction are calculated and then divided by 30.

¹⁸ Subsequent to the release of the Draft EA, modifications were made to PAR 1469 which triggered adjustments to the peak daily construction GHG emissions. Even with the revised construction GHG calculations, and the overlap of construction and operation activities, no significant adverse GHG impacts are expected to occur.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES.				
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Impacts on biological resources will be considered significant if any of the following criteria apply:

- The project results in a loss of plant communities or animal habitat considered to be rare, threatened or endangered by federal, state or local agencies.
- The project interferes substantially with the movement of any resident or migratory wildlife species.
- The project adversely affects aquatic communities through construction or operation of the project.

Discussion

PAR 1469 will further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations by: 1) requiring the installation of air pollution control devices (APCDs) for tanks meeting specified criteria; 2) requiring periodic source testing and parametric monitoring of APCDs to be conducted; 3) regulating use of chemical fume suppressants; 4) implementing additional housekeeping and best management practices; and 5) complying with building enclosure provisions. Facilities affected by PAR 1469 are primarily located in existing industrial, commercial or mixed land use areas. In order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing APCDs, relocating hexavalent chromium-containing tanks into the buildings, upgrading building enclosures to meet the requirements of PAR 1469, conducting additional source tests, housekeeping, and implementing best management practices. Therefore, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, electricity to operate APCDs, additional source test vehicle trips, APCD maintenance truck trips, and water use for conducting wet cleaning are expected to occur during the implementation of PAR 1469.

IV. a), b), c), & d) No Impact. The proposed project does not require the acquisition of land or building new structures, or construction on green land to comply with the provisions of PAR 1469. The sites of the affected facilities that would be subject to PAR 1469 currently do not support riparian habitat, federally protected wetlands, or migratory corridors because they are existing developed and established facilities currently used for industrial purposes. Additionally, special status plants, animals, or natural communities identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service are not expected to be found on or in close proximity to the affected facilities because the affected facilities are in existing industrial, commercial or mixed land use areas. Therefore, PAR 1469 would have no direct or indirect impacts that could adversely affect plant or animal species or the habitats on which they rely in the District.

Compliance with PAR 1469 is expected to reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations at the affected facilities, which would be expected to improve, not worsen, present conditions of plant and animal life, since previously uncontrolled hexavalent chromium emissions would be captured and disposed of properly before they could have the potential to impact plant and animal life. PAR 1469 does not require acquisition of additional land or further conversions of riparian habitats or sensitive natural communities where endangered or sensitive species may be found. Finally, the APCDs contemplated as part of implementing PAR 1469 would be installed at existing facilities and would

not be built on or near a wetland or in the path of migratory species. Therefore, PAR 1469 would have no direct or indirect impacts that could adversely affect plant or animal species or the habitats on which they rely in the SCAQMD.

IV. e) & f) No Impact. The proposed project is not envisioned to conflict with local policies or ordinances protecting biological resources or local, regional, or state conservation plans. Land use and other planning considerations are determined by local governments and no land use or planning requirements would be altered by implementing PAR 1469. Additionally, PAR 1469 would not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or any other relevant habitat conservation plan, and would not create divisions in any existing communities because all activities associated with complying with PAR 1469 would occur at existing facilities in previously disturbed areas which are not typically subject to Habitat or Natural Community Conservation Plans.

The SCAQMD, as the Lead Agency, has found that, when considering the record as a whole, there is no evidence that implementing of PAR 1469 would disturb habitat, or would have potential for any new adverse effects on wildlife resources or the habitat upon which wildlife depends. Accordingly, based upon the preceding information, the SCAQMD has, on the basis of substantial evidence, rebutted the presumption of adverse effect contained in Title 14 of the California Code of Regulations Section 753.5 (d) - Projects Eligible for a No Effect Determination.

Conclusion

Based upon these considerations, significant biological resource impacts are not expected from implementing PAR 1469. Since no significant biological resource impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource as defined in Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource, site, or feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Impacts to cultural resources will be considered significant if:

- The project results in the disturbance of a significant prehistoric or historic archaeological site or a property of historic or cultural significance, or tribal cultural significance to a community or ethnic or social group or a California Native American tribe.
- Unique paleontological resources or objects with cultural value to a California Native American tribe are present that could be disturbed by construction of the proposed project.
- The project would disturb human remains.

Discussion

PAR 1469 will further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations by: 1) requiring the installation of air pollution control devices (APCDs) for tanks meeting specified criteria; 2) requiring periodic source testing and parametric monitoring of APCDs to be conducted; 3) regulating use of chemical fume suppressants; 4) implementing additional housekeeping and best management practices; and 5) complying with building enclosure provisions. Facilities affected by PAR 1469 are primarily located in existing industrial, commercial or mixed land use areas. In order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing APCDs, relocating hexavalent chromium-containing tanks into the buildings, upgrading building enclosures to meet the requirements of PAR 1469, conducting additional source tests, housekeeping, and implementing best management practices. Therefore, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, electricity to operate APCDs, additional source test vehicle trips, APCD maintenance truck

trips, and water use for conducting wet cleaning are expected to occur during the implementation of PAR 1469.

V. a), b), c), d) & e) No Impact. There are existing laws in place that are designed to protect and mitigate potential impacts to cultural resources. For example, CEQA Guidelines state that generally, a resource shall be considered “historically significant” if the resource meets the criteria for listing in the California Register of Historical Resources, which include the following:

- Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
- Is associated with the lives of persons important in our past;
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values;
- Has yielded or may be likely to yield information important in prehistory or history (CEQA Guidelines §15064.5).

Buildings, structures, and other potential culturally significant resources that are less than 50 years old are generally excluded from listing in the National Register of Historic Places, unless they are shown to be exceptionally important. For any of the buildings or structures that may be affected by PAR 1469 that are older than 50 years, they are buildings that are currently utilized for industrial purposes and would generally not be considered historically significant since they would not have any of the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values. Therefore, PAR 1469 is not expected to cause any impacts to significant historic cultural resources.

Construction-related activities are expected to be confined within the existing footprint of the affected facilities that have already been fully developed and paved, PAR 1469 is not expected to require physical changes to the environment which may disturb paleontological or archaeological resources. Furthermore, it is envisioned that these areas are already either devoid of significant cultural resources or whose cultural resources have been previously disturbed. Therefore, PAR 1469 has no potential to cause a substantial adverse change to a historical or archaeological resource, directly or indirectly to destroy a unique paleontological resource or site or unique geologic feature, or disturb any human remains, including those interred outside formal cemeteries. Implementing of PAR 1469 is, therefore, not anticipated to result in any activities or promote any programs that could have a significant adverse impact on cultural resources in the District.

PAR 1469 is not expected to require physical changes to a site, feature, place, cultural landscape, sacred place or object with cultural value to a California Native American Tribe. Furthermore, PAR 1469 is not expected to result in a physical change to a resource determined to be eligible for inclusion or listed in the California Register of Historical Resources or included in a local register of historical resources. For these reasons, PAR 1469 is not expected to cause any substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074.

As part of releasing this CEQA document for public review and comment, the SCAQMD also provided a formal notice of the proposed project to all California Native American Tribes (Tribes) that requested to be on the Native American Heritage Commission’s (NAHC) notification list per

Public Resources Code Section 21080.3.1(b)(1). The NAHC notification list provides a 30-day period during which a Tribe may respond to the formal notice, in writing, requesting consultation on the proposed project.

In the event that a Tribe submits a written request for consultation during this 30-day period, the SCAQMD will initiate a consultation with the Tribe within 30 days of receiving the request in accordance with Public Resources Code Section 21080.3.1(b). Consultation ends when either: 1) both parties agree to measures to avoid or mitigate a significant effect on a Tribal Cultural Resource and agreed upon mitigation measures shall be recommended for inclusion in the environmental document [see Public Resources Code Section 21082.3(a)]; or, 2) either party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached [see Public Resources Code Section 21080.3.2(b)(1)-(2) and Section 21080.3.1(b)(1)].

Conclusion

Based upon these considerations, significant adverse cultural resources impacts are not expected from implementing PAR 1469. Since no significant cultural resources impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
VI. ENERGY. Would the project:				
a) Conflict with adopted energy conservation plans?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the need for new or substantially altered power or natural gas utility systems?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Create any significant effects on local or regional energy supplies and on requirements for additional energy?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create any significant effects on peak and base period demands for electricity and other forms of energy?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Comply with existing energy standards?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Impacts to energy resources will be considered significant if any of the following criteria are met:

- The project conflicts with adopted energy conservation plans or standards.
- The project results in substantial depletion of existing energy resource supplies.
- An increase in demand for utilities impacts the current capacities of the electric and natural gas utilities.
- The project uses non-renewable resources in a wasteful and/or inefficient manner.

Discussion

PAR 1469 will further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations by: 1) requiring the installation of air pollution control devices (APCDs) for tanks meeting specified criteria; 2) requiring periodic source testing and parametric monitoring of APCDs to be conducted; 3) regulating use of chemical fume suppressants; 4) implementing additional housekeeping and best management practices; and 5) complying with building enclosure provisions. Facilities affected by PAR 1469 are primarily located in existing industrial, commercial or mixed land use areas. In order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing APCDs, relocating hexavalent chromium-containing tanks into the buildings, upgrading building enclosures to meet the requirements of PAR 1469, conducting additional source tests, housekeeping, and implementing best management practices. Therefore, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, electricity to operate APCDs, additional source test vehicle trips, APCD maintenance truck trips, and water use for conducting wet cleaning are expected to occur during the implementation of PAR 1469.

VI. a) & e) No Impact. PAR 1469 is not expected to conflict with any adopted energy conservation plans or violate any energy conservation standards because existing facilities would be expected to continue implementing any existing energy conservation plans that are currently in place regardless of whether PAR 1469 is implemented.

PAR 1469 is not expected to cause new development because it does not require new facilities to be built. While PAR 1469 will primarily apply to existing facilities, it will also apply to any new facilities that may be built in the future. However, SCAQMD staff is not aware of any new chromium electroplating and chromic acid anodizing operations facilities planned to be constructed in the immediate future and is unable to speculate, predict, or forecast, when, if any, would be built in the long-term. Any energy resources that may be necessary to install building enclosures, air pollution control equipment, conduct source tests, conduct monitoring and employ housekeeping would be used to achieve reductions in hexavalent chromium from chromium electroplating and chromic acid anodizing operations facilities, and therefore, would not be using non-renewable resources in a wasteful manner. The air quality benefits that would be expected to occur as a result of implementing these activities would not require utilities that would provide additional electricity and natural gas to the affected facilities to substantially alter power or natural gas system because any additional energy needed to implement PAR 1469 can be provided from existing supplies. For these reasons, PAR 1469 would not be expected to conflict with energy conservation plans or existing energy standards, or use non-renewable resources in a wasteful manner.

VI. b), c) & d) Less Than Significant Impact. PAR 1469 will increase the use of electricity from the operation of newly installed APCDs, including the blower and filtration systems needed to create enough flow rate to the filtration system. Diesel fuel would be consumed by construction equipment during construction phase. Gasoline fuel would be consumed by vehicles used during construction and operation. No natural gas will be needed during construction. The following sections evaluate the various forms of energy sources that may be affected by the implementation of PAR 1469.

Construction

During construction, diesel and gasoline fuel will be consumed by portable construction equipment (e.g., welders, forklifts, and etc.) needed to install the APCDs and to relocate the tanks and by construction workers' vehicles and vendor trucks traveling to and from each facility. To estimate "worst-case" energy impacts associated with construction activities, SCAQMD staff took the total construction SOx emissions to scale to the total diesel fuel usage since the estimated SOx emissions during construction are derived from CARB's OFFROAD2011 and EMFAC2014 models. These two models both calculate the SOx emissions based on the mass-balanced method and the sulfur content in the fuel. Therefore, the total diesel fuel consumption from construction associated equipment and trucks can be estimated by scaling the SOx emissions from one single piece of construction equipment with known diesel fuel usage in gallons per day to the total construction SOx emissions. Appendix C contains the assumptions and calculations for estimating fuel usage associated with construction.

The fuel usage per construction worker commute round trips was calculated by assuming that each workers' gasoline vehicle would get a fuel economy rate of approximately 20 miles per gallon and would travel 29.4 miles round trip to and from the construction site in one day based on default values in CalEEMod. Table 2-9 lists the projected energy impacts associated with the construction from all affected facilities.

**Table 2-9
Total Projected Fuel Usage for Construction Activities¹⁹**

Fuel Type	Year 2016 Estimated Basin Fuel Demand^a (mmgal/yr)	Fuel Usage^b (mmgal)	Total % Above Baseline	Exceed Significance Thresholds?^c
Diesel	749	0.0085 0.0093	0.0011 0.0012	No
Gasoline	6,997	0.0012	0.00002	No

^a California Annual Retail Fuel Outlet Report Results (CEC-A15) Spreadsheets, 2017 California Energy Commission (http://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html). [Accessed February 6, 2018.]

^b Estimated peak fuel usage from construction activities. Diesel usage estimates are based on the usage of portable construction equipment. Gasoline usage estimates are derived from construction workers' and vendor vehicle daily trips to and from work.

^c SCAQMD's energy threshold for both types of fuel used is 1% of fuel supply.

The 2016 California Annual Retail Fuel Outlet Report Results from the California Energy Commission (CEC) state that 749 million gallons of diesel and 6,997 million gallons of gasoline were consumed in 2016 in the Basin. Thus, if an additional 9,293 gallons of diesel consumed (0.0012% above baseline) and 1,248 gallons of gasoline are consumed (0.00002% above baseline) during construction, they are below SCAQMD's 1% significance threshold for fuel supply. No significant adverse impact on fuel supplies would be expected.

Operation

Electricity Use

SCAQMD staff estimates there will be additional electricity usage for the new or modified APCDs, including the blower and filtration, which are expected to be powered by electricity. The analysis assumes that ~~132~~ 145 additional blowers would be needed to operate the APCD at ~~89~~ 98 facilities. The additional electricity consumption from operation is estimated and presented in Table 2-10. Electrical energy impacts associated with project operation are considered less than significant.

**Table 2-10
PAR 1469 Additional Electricity Consumption from Operation²⁰**

Energy Use	Consumption (GW-h)
APCD: Blowers and Filtration System (100 bhp @ 0.001788 GW-h) x 132 145	0.236 0.259
SCAQMD Basin Electricity End Use Consumption ^{a,b}	120,210
Total Impact % of Capacity	0.0002
SIGNIFICANT?^{c,b}	NO

^a Final 2016 SCAQMD AQMP Chapter 10, 2012 Electricity Use in GWh (<http://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/final-2016-aqmp>)

^b It is assumed the energy supply is equal to energy consumption.

^c SCAQMD's energy threshold for electricity is 1% of supply.

¹⁹ Subsequent to the release of the Draft EA, modifications were made to PAR 1469 which triggered adjustments to the peak daily fuel use during construction. Even with the revised fuel use calculation, the analysis demonstrates that no significant adverse fuel impacts would be expected to occur.

²⁰ Subsequent to the release of the Draft EA, modifications were made to PAR 1469 which triggered adjustments to the projected electricity consumption. Even with the revised electricity calculation, the analysis demonstrates that no significant adverse electricity impacts would be expected to occur.

Gasoline Use From Operational Vehicles

Additional vehicle trips are expected to be needed for the additional source testing and APCD maintenance work (filter replacement or inspection, and disposal of waste). Each vehicle is assumed to drive approximately 40 miles, round trip, with a fuel economy of approximately 20 miles per gallon (mpg) for LDA/LDT and 10 mpg for MDT. As previously explained in Section III - Air Quality and Greenhouse Gases, by assuming that each affected 89_98-facility will need one LDA/LDT and one MDT per year and the corresponding annual total gasoline use would be approximately 588 gallons per year.

The 2016 California Annual Retail Fuel Outlet Report Results from California Energy Commission states that 6,997 million gallons of gasoline are consumed in 2016 in the Basin. Thus, based on the foregoing analysis and the summary presented in Table 2-11, an additional 588 gallons of gasoline consumed per year of operation at all 89_98-affected facilities is not expected to have a significant adverse impact on fuel supplies.

**Table 2-11
Annual Total Projected Fuel Usage for Operational Activities²¹**

Type of Equipment	Gasoline
	(gal/yr)
LDA/LDT	178
	496
MDT	356
	392
Total:	534
	588
Year 2016 Estimated Basin Fuel Demand (gal/yr) ^a	6,997,000,000
Total % Above Baseline	0.00001
SIGNIFICANT?^b	NO

^a California Annual Retail Fuel Outlet Report Results (CEC-A15) Spreadsheets, 2017 California Energy Commission (http://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html). [Accessed February 6, 2018.]

^b SCAQMD's energy threshold for fuel used is 1% of fuel supply.

Natural Gas Impacts

None of the APCD requires natural gas for operation as these units require electricity. Similarly, none of the vehicles that may be needed to deliver supplies or haul away waste would require natural gas. Thus, no natural gas would be required to implement PAR 1469.

Based on the foregoing analysis, the operational-related activities associated with the implementation of PAR 1469 are necessary and will not use energy in a wasteful manner and will not result in substantial depletion of existing energy resource supplies. Further, as shown in the preceding analysis, the quantities of electricity, gasoline and diesel fuel needed to implement PAR 1469 would not create a significant demand of energy when compared to existing supplies. Thus, there are no significant adverse energy resources impacts associated with the implementation of PAR 1469.

²¹ Subsequent to the release of the Draft EA, modifications were made to PAR 1469 which triggered adjustments to the fuel use during operation. Even with the revised fuel use calculation, the analysis demonstrates that no significant adverse fuel impacts would be expected to occur.

Conclusion

Based upon these considerations, significant adverse energy impacts are not expected from implementing PAR 1469. Since no significant energy impacts were identified, no mitigation measures are necessary or required.

Subsequent to the release of the Draft EA for public review and comment, modifications were made to PAR 1469 that caused some of the calculations in this section to be revised. Staff has reviewed the modifications to PAR 1469 and the revised calculations and concluded that none of the revisions constitute: 1) significant new information; 2) a substantial increase in the severity of an environmental impact; or, 3) provide new information of substantial importance relative to the Draft EA. In addition, revisions to the proposed project in response to verbal or written comments would not create new, avoidable significant effects.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
VII. GEOLOGY AND SOILS. Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Impacts on the geological environment will be considered significant if any of the following criteria apply:

- Topographic alterations would result in significant changes, disruptions, displacement, excavation, compaction, or over covering of large amounts of soil.
- Unique geological resources (paleontological resources or unique outcrops) are present that could be disturbed by the construction of the proposed project.
- Exposure of people or structures to major geologic hazards such as earthquake surface rupture, ground shaking, liquefaction or landslides.
- Secondary seismic effects could occur which could damage facility structures, e.g., liquefaction.
- Other geological hazards exist which could adversely affect the facility, e.g., landslides, mudslides.

Discussion

PAR 1469 will further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations by: 1) requiring the installation of air pollution control devices (APCDs) for tanks meeting specified criteria; 2) requiring periodic source testing and parametric monitoring of APCDs to be conducted; 3) regulating use of chemical fume suppressants; 4) implementing additional housekeeping and best management practices; and 5) complying with building enclosure provisions. Facilities affected by PAR 1469 are primarily located in existing industrial, commercial or mixed land use areas. In order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing APCDs, relocating hexavalent chromium-containing tanks into the buildings, upgrading building enclosures to meet the requirements of PAR 1469, conducting additional source tests, housekeeping, and implementing best management practices. Therefore, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, electricity to operate APCDs, additional source test vehicle trips, APCD maintenance truck trips, and water use for conducting wet cleaning are expected to occur during the implementation of PAR 1469.

VII. a), b), c), d), & e) No Impact. Since PAR 1469 would result in installing or modifying APCDs, relocating tanks, and installing building enclosures activities at existing facilities located in developed, mostly industrial and commercial settings, no site preparation is anticipated that could adversely affect geophysical conditions in the District. The proposed project does not cause or require a new facility to be constructed.

Southern California is an area of known seismic activity. As part of the issuance of building permits, local jurisdictions are responsible for assuring that the Uniform Building Code is adhered to and can conduct inspections to ensure compliance. The Uniform Building Code is considered to be a standard safeguard against major structural failures and loss of life. The basic formulas used for the Uniform Building Code seismic design require determination of the seismic zone and site coefficient, which represents the foundation condition at the site. The Uniform Building Code requirements also consider liquefaction potential and establish stringent requirements for building foundations in areas potentially subject to liquefaction.

Accordingly, the installation of new or modification of existing APCDs at existing facilities to comply with PAR 1469 is expected to conform to the Uniform Building Code and all other applicable state and local building codes. Structures must be designed to comply with the Uniform Building Code Zone 4 requirements if they are located in a seismically active area. The local city or county is responsible for assuring that the existing affected facilities comply with the Uniform Building Code as part of the issuance of the building permits and can conduct inspections to ensure compliance. The Uniform Building Code is considered to be a standard safeguard against major structural failures and loss of life. The goal of the code is to provide structures that will: 1) resist minor earthquakes without damage; 2) resist moderate earthquakes without structural damage but with some non-structural damage; and, 3) resist major earthquakes without collapse but with some structural and non-structural damage.

The Uniform Building Code is considered to be a standard safeguard against major structural failures and loss of life. The Uniform Building Code bases seismic design on minimum lateral seismic forces (“ground shaking”). The basic formulas used for the Uniform Building Code seismic design require determination of the seismic zone and site coefficient, which represent the foundation conditions at the site. The Uniform Building Code requirements also consider liquefaction potential and establish stringent requirements for building foundations in areas potentially subject to liquefaction.

Accordingly, existing buildings and equipment, as well as any that may be modified or replaced as a result of PAR 1469, are likely to conform to the Uniform Building Code and all other applicable state codes in effect at the time they were constructed. Thus, PAR 1469 would not alter the exposure of people or property to geological hazards such as earthquakes, landslides, mudslides, ground failure, or other natural hazards. As a result, substantial exposure of people or structures to the risk of loss, injury, or death involving the rupture of an earthquake fault, seismic ground shaking, ground failure or landslides is not anticipated.

Since PAR 1469 would only require facilities to install or modify APCDs and to relocate tanks, it does not involve construction activities that will result in substantial soil erosion or the loss of topsoil. Since PAR 1469 will affect existing facilities, it is expected that the soil types present at the affected facilities will not be made further susceptible to expansion or liquefaction. Furthermore, subsidence is not anticipated to be a problem since only minor excavation, grading, or filling activities, if any, are expected to occur at the affected facilities. Additionally, the areas where the existing facilities are located are not envisioned to be prone to new landslide impacts or have unique geologic features since the existing facilities are currently operational. Any new installations or modifications to existing buildings or APCDs would not be expected to increase or exacerbate any existing risks at the affected facility locations. Therefore, because PAR 1469 would not involve locating facilities on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse, no impacts are anticipated.

Since PAR 1469 will affect chromium electroplating and chromic acid anodizing operations at existing facilities by requiring the installation of new or the modification of APCDs and relocation of tanks, people or property will not be exposed to new impacts related to expansive soils or soils incapable of supporting water disposal because no additional water will be necessary to upgrade the building enclosures or operate the APCDs. Further, because each affected facility has an existing sewer system the installation of septic tanks or alternative wastewater disposal systems or modifications to the existing sewer systems would not be necessary. Thus, implementation of

PAR 1469 will not adversely affect soils associated with a installing a new septic system or alternative wastewater disposal system or modifying an existing sewer.

Conclusion

Based upon these considerations, significant adverse geology and soils impacts are not expected from the implementation of PAR 1469. Since no significant geology and soils impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
VIII. HAZARDS AND HAZARDOUS MATERIALS. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, and disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions, or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public use airport or a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Significantly increased fire hazard in areas with flammable materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Significance Criteria

Impacts associated with hazards will be considered significant if any of the following occur:

- Non-compliance with any applicable design code or regulation.
- Non-conformance to National Fire Protection Association standards.
- Non-conformance to regulations or generally accepted industry practices related to operating policy and procedures concerning the design, construction, security, leak detection, spill containment or fire protection.
- Exposure to hazardous chemicals in concentrations equal to or greater than the Emergency Response Planning Guideline (ERPG) 2 levels.

Discussion

PAR 1469 will further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations by: 1) requiring the installation of air pollution control devices (APCDs) for tanks meeting specified criteria; 2) requiring periodic source testing and parametric monitoring of APCDs to be conducted; 3) regulating use of chemical fume suppressants; 4) implementing additional housekeeping and best management practices; and 5) complying with building enclosure provisions. Facilities affected by PAR 1469 are primarily located in existing industrial, commercial or mixed land use areas. In order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing APCDs, relocating hexavalent chromium-containing tanks into the buildings, upgrading building enclosures to meet the requirements of PAR 1469, conducting additional source tests, housekeeping, and implementing best management practices. Therefore, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, electricity to operate APCDs, additional source test vehicle trips, APCD maintenance truck trips, and water use for conducting wet cleaning are expected to occur during the implementation of PAR 1469.

VIII. a) & b) Less than Significant Impact. PAR 1469 may increase the amount of hexavalent chromium that is captured by APCDs, in lieu of being directly emitted into the air. Additional metal PM emissions will also be captured through facility owners/operators employing additional housekeeping practices on a regular basis. Overall, the capture of these metal PM emissions would reduce health risks to the public and the environment.

Spent metal and captured metal waste is currently transported from affected facilities to offsite facilities that either recycle or dispose of the metal waste at a hazardous waste landfill. Once PAR 1469 is implemented and the building enclosures upgrades, tank relocations, and APCD installations are completed, the additional metals that will be captured by the new APCDs would continue to be either recycled off-site or hauled away to a hazardous waste landfill, which is what the affected facilities are currently doing. Hence, no new significant hazards are expected to the public or environment through the continued routine transport, disposal or recycling of metal waste generated at affected facilities.

Therefore, PAR 1469 is not expected to create a significant hazard to the public or environment through reasonably foreseeable upset conditions involving the release of hazardous materials into the environment.

VIII. c) Less than Significant Impact. There are at least 16 facilities that are located within a one-quarter mile of a school. These facilities are identified in Appendix D. PAR 1469, if implemented, would reduce human exposure to hexavalent chromium by requiring metal PM emissions from chromium electroplating and chromic acid anodizing operations to be collected and vented to APCDs instead of being vented to the atmosphere. Other proposed requirements will also reduce those emissions. All of the affected facilities, including the 16 that are located within one-quarter mile of a school, are expected to continue to take the appropriate and required actions to ensure proper handling of existing quantities of hazardous or acutely hazardous materials, substances or wastes that are currently generated. Further, any increased quantities that may be collected at each facility by efficient collection systems and APCDs that will be employed as a result of PAR 1469, would also be expected to be handled in the same or similar manner regardless of each facility's proximity to a school because PAR 1469 does not include new requirements or alter existing requirements for hazardous waste disposal.

VIII. d) No Impact. Government Code §65962.5 refers to hazardous waste handling practices at facilities subject to the Resources Conservation and Recovery Act (RCRA). PAR 1469 would affect 24 facilities that are identified on lists of California Department of Toxics Substances Control hazardous waste facilities per Government Code §65962.5. These facilities are identified in Appendix D. However, compliance with PAR 1469 will ensure that metal PM, which may be toxic and hazardous, will be captured by APCDs. The more material that is captured, the less that will be emitted directly to the atmosphere. Currently, metal PM waste is stored and transported in closed containers and PAR 1469 would not alter existing or add new requirements to change how the metal waste is stored while awaiting to be transported off-site to a recycling facility or a hazardous waste landfill. Hazardous wastes from the existing facilities are required to be managed in accordance with applicable federal, state, and local rules and regulations and compliance with these regulations is expected to continue after PAR 1469 is implemented. Therefore, compliance with PAR 1469 would not create a new significant hazard to the public or environment.

VIII. e) No Impact. Federal Aviation Administration regulations, 14 CFR Part 77 – Safe, Efficient Use, and Preservation of the Navigable Airspace, provide information regarding the types of projects that may affect navigable airspace. Projects may adversely affect navigable airspace if they involve construction or alteration of structures greater than 200 feet above ground level within a specified distance from the nearest runway or objects within 20,000 feet of an airport or seaplane base with at least one runway more than 3,200 feet in length and the object would exceed a slope of 100:1 horizontally (100 feet horizontally for each one foot vertically from the nearest point of the runway).

Construction activities from implementing the proposed project are expected to occur within the existing confines of the affected facilities. Appendix D identifies 17 facilities that are located within two miles of an airport. However, the installation of APCDs, the upgrades of building enclosures, and the relocation of tanks are expected to be conducted in accordance with all appropriate building, land use and fire codes and any new installations or structures are expected to be well below the height relative to the elevation of existing flight patterns so as to not interfere with plane flight paths consistent with 14 CFR Part 77. Such codes are designed to protect the public from hazards associated with normal operation. Therefore, the proposed project is not expected to result in a safety hazard for people residing or working in the area of the affected facilities even if construction would occur within the vicinity of an airport. Therefore, if the owner/operator of these 17 facilities modifies ~~to~~ their facilities to comply with PAR 1469, the

modifications would not be expected to result in a safety hazard for people residing or working in the project area even within the vicinity of an airport.

VIII. f) No Impact. Health and Safety Code Section 25506 et seq. specifically requires all businesses handling hazardous materials to submit a business emergency response plan to assist local administering agencies in the emergency release or threatened release of a hazardous material. Business emergency response plans generally require the following:

- Identification of individuals who are responsible for various actions, including reporting, assisting emergency response personnel and establishing an emergency response team;
- Procedures to notify the administering agency, the appropriate local emergency rescue personnel, and the California Office of Emergency Services;
- Procedures to mitigate a release or threatened release to minimize any potential harm or damage to persons, property or the environment;
- Procedures to notify the necessary persons who can respond to an emergency within the facility;
- Details of evacuation plans and procedures;
- Descriptions of the emergency equipment available in the facility;
- Identification of local emergency medical assistance; and,
- Training (initial and refresher) programs for employees in:
 1. The safe handling of hazardous materials used by the business;
 2. Methods of working with the local public emergency response agencies;
 3. The use of emergency response resources under control of the handler;
 4. Other procedures and resources that will increase public safety and prevent or mitigate a release of hazardous materials.

In general, every county or city and all facilities using a certain amount of hazardous materials are required to formulate detailed contingency plans to eliminate, or at least minimize, the possibility and effect of fires, explosion, or spills. In conjunction with the California Office of Emergency Services, local jurisdictions have enacted ordinances that set standards for area and business emergency response plans. These requirements include immediate notification, mitigation of an actual or threatened release of a hazardous material, and evacuation of the emergency area.

Emergency response plans are typically prepared in coordination with the local city or county emergency plans to ensure the safety of not only the public (surrounding local communities), but the facility employees as well. The proposed project would not impair implementation of, or physically interfere with any adopted emergency response plan or emergency evacuation plan. Further, the existing facilities already have an emergency response plan in place, as applicable. While the installation of APCDs, building enclosures, and relocation of tanks may require an update of each affected facility's existing emergency response plan to reflect the new equipment or building modifications, the action of modifying an emergency response plan will not create any

environmental impacts. Thus, PAR 1469 is not expected to impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

VIII. g) No Impact. The facilities affected by PAR 1469 are currently located in existing industrial, commercial or mixed land use areas and the physical activities that may be taken to comply with PAR 1469 would occur inside existing property boundaries which are not located near wildlands; therefore, there is no existing risk from wildland fires and implementation of PAR 1469 would not create a new risk.

The proposed project would also not increase the existing risk of fire hazards in areas with flammable brush, grass, or trees since no substantial or native vegetation typically exists on or near the facilities (specifically because they could be a fire hazard). Thus, PAR 1469 is not expected to expose people or structures to wildfires. Therefore, no significant increase in wildland fire hazards is expected at the facilities that would be affected by the proposed project.

VIII. h) Less Than Significant Impact. The Uniform Fire Code and Uniform Building Code set standards intended to minimize risks from flammable or otherwise hazardous materials. Local jurisdictions are required to adopt the uniform codes or comparable regulations. Local fire agencies require permits for the use or storage of hazardous materials and permit modifications for proposed increases in their use. Permit conditions depend on the type and quantity of the hazardous materials at the facility. Permit conditions may include, but are not limited to, specifications for sprinkler systems, electrical systems, ventilation, and containment. The fire departments make annual business inspections to ensure compliance with permit conditions and other appropriate regulations. Further, businesses are required to report increases in the storage or use of flammable and otherwise hazardous materials to local fire departments. Local fire departments ensure that adequate permit conditions are in place to protect against the potential risk of upset. PAR 1469 would not change the existing requirements and permit conditions for the proper handling of flammable materials. Further, PAR 1469 does not contain any requirements that would prompt facility owners/operators to begin using new flammable materials. In addition, the National Fire Protection Association has special designations for deflagrations (e.g., explosion prevention) from metal dust. Therefore, operators of metal activities that require baghouse emission control technologies will also need to select reliable, economical and effective means of explosion control such as baghouse explosion suppression, containment and venting. Additional information pertaining to these types of protective measures is available in Chapter 8 of the *Industrial Ventilation, A Manual for Recommended Practice for Design*, 28th Edition, published by the American Conference of Governmental Industrial Hygienists, ©2013.

Conclusion

Based upon these considerations, significant adverse hazards and hazardous materials impacts are not expected from implementing PAR 1469. Since no significant hazards and hazardous materials impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
IX. HYDROLOGY AND WATER QUALITY. Would the project:				
a) Violate any water quality standards, waste discharge requirements, exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board, or otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in substantial erosion or siltation on- or off-site or flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Place housing or other structures within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map, which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
f) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam, or inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Require or result in the construction of new water or wastewater treatment facilities or new storm water drainage facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
i) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Significance Criteria

Potential impacts on water resources will be considered significant if any of the following criteria apply:

Water Demand:

- The existing water supply does not have the capacity to meet the increased demands of the project, or the project would use more than 262,820 gallons per day of potable water.
- The project increases demand for total water by more than five million gallons per day.

Water Quality:

- The project will cause degradation or depletion of ground water resources substantially affecting current or future uses.
- The project will cause the degradation of surface water substantially affecting current or future uses.

- The project will result in a violation of National Pollutant Discharge Elimination System (NPDES) permit requirements.
- The capacities of existing or proposed wastewater treatment facilities and the sanitary sewer system are not sufficient to meet the needs of the project.
- The project results in substantial increases in the area of impervious surfaces, such that interference with groundwater recharge efforts occurs.
- The project results in alterations to the course or flow of floodwaters.

Discussion

PAR 1469 will further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations by: 1) requiring the installation of air pollution control devices (APCDs) for tanks meeting specified criteria; 2) requiring periodic source testing and parametric monitoring of APCDs to be conducted; 3) regulating use of chemical fume suppressants; 4) implementing additional housekeeping and best management practices; and 5) complying with building enclosure provisions. Facilities affected by PAR 1469 are primarily located in existing industrial, commercial or mixed land use areas. In order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing APCDs, relocating hexavalent chromium-containing tanks into the buildings, upgrading building enclosures to meet the requirements of PAR 1469, conducting additional source tests, housekeeping, and implementing best management practices. Therefore, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, electricity to operate APCDs, additional source test vehicle trips, APCD maintenance truck trips, and water use for conducting wet cleaning are expected to occur during the implementation of PAR 1469.

IX. a) Less than Significant Impact. PAR 1469 contains requirements for facility owners or operators to conduct chromium electroplating and chromic acid anodizing operations within building enclosures and to vent to APCDs such as HEPA filters when there is a Tier III tank. The APCDs (HEPA filters) do not utilize water as part of their day-to-day functions. Thus, no wastewater will be generated from the use of air pollution control equipment to control emissions from chromium electroplating and chromic acid anodizing activities.

PAR 1469 also contains housekeeping requirements that require facility owners or operators to use approved cleaning methods such as a wet mop, damp cloth, low pressure spray nozzle, wet wash system, or using a high efficiency particulate arrestor (HEPA) vacuum on a daily basis instead of weekly basis. There are 115 facilities that would be required to conduct housekeeping. When employing these housekeeping efforts, PAR 1469 provides facility owners/operators with a choice of using either wet cleaning or dry HEPA vacuuming. If dry HEPA vacuuming is used to comply with the housekeeping requirements, then no water would be needed and no wastewater would be generated.

Nonetheless, wet cleaning has been widely used in many of the affected facilities and PAR 1469 will continue to provide wet cleaning as an option for complying with the housekeeping requirements. For this reason, the analysis assumes that wet cleaning will continue to be employed as a compliant method and if more facilities elect to use wet cleaning, the amount of wastewater generated from wet cleaning would be expected to increase as a result. For any facility owner or operator that chooses to conduct wet cleaning, but that does not currently have a wastewater

treatment system or a wastewater discharge permit, the dirty water resulting from wet cleaning would need to be collected, stored and disposed of as hazardous waste and these facilities would be required to comply with the applicable hazardous waste disposal regulations. Thus, the collected dirty water at these facilities would not be allowed to be discharged as wastewater.

For any affected facility that currently has a wastewater discharge permit, the owner or operator will be required to comply with the permitted effluent discharge concentration and flow limits which means the any wastewater generated from conducting housekeeping via the approved wet cleaning method would likely need to be treated prior to discharge.

In either of these scenarios, wet cleaning conducted in accordance with complying with the housekeeping requirements in PAR 1469 would not be expected to violate any water quality standards, waste discharge requirements, exceed wastewater treatment requirements of the applicable of the Publicly Owned Treatment Works (POTW) or Regional Water Quality Control Board, or otherwise substantially degrade water quality that the requirements are meant to protect.

IX. b) No Impact. As previously explained, water is not needed to operate the APCDs in chromium electroplating and chromic acid anodizing operations facilities. For any facility owners or operators that choose to conduct wet cleaning, any additional water that may be needed would likely be supplied by each facility's current water supplier. Further, the quality of water that would likely be supplied to each affected facility will be potable water since potable water is currently supplied at all of the affected facilities in order to provide drinking water for employees, water for sinks and toilets, and water for any landscaping, if applicable. Should any of the affected facilities have a groundwater well onsite with groundwater pumping rights, the facility owners/operators would not likely choose to use groundwater in lieu of potable water to conduct wet cleaning because groundwater typically contains sand and other soil particles and debris which would not be a suitable quality for conducting wet cleaning. Therefore, implementation of PAR 1469 would not be expected to cause facilities to utilize groundwater for conducting wet cleaning, substantially deplete groundwater supplies, or interfere substantially with groundwater recharge.

IX. c) & d) No Impact. PAR 1469 contains requirements for facility owners or operators that conduct chromium electroplating and chromic acid anodizing operations to install APCDs (HEPA filters) which do not utilize water as part of their day-to-day functions. Thus, no new drainage facilities or alterations to existing drainage facilities will be needed beyond what currently exists at the existing facilities. Similarly, there are no streams or rivers running through the properties of the existing facilities, so any construction activities that may occur as a result of complying with PAR 1469 would not be expected to alter the course of a stream or river. PAR 1469 does not contain any requirements that would change existing drainage patterns or the procedures for how surface runoff water is handled. Thus, PAR 1469 is not expected to have any significant adverse effects on any existing drainage patterns, or cause an increase rate or amount of surface runoff water that would exceed the capacity of the facilities' existing or planned storm water drainage systems.

IX. e), f), & g) No Impact. The facilities affected by PAR 1469 are currently located in existing industrial, commercial or mixed land use areas. Since PAR 1469 would result in construction activities at existing facilities to install or modify APCDs and upgrade buildings enclosures and relocate tanks, some minor site preparation and construction activities may be necessary. However, while some new APCDs may be installed at existing facilities, PAR 1469 would not cause or require a new facility or new housing to be constructed. Further, the installation of new

APCDs and the upgrade of building enclosures would occur on-site at the existing facilities. Therefore, PAR 1469 is not expected to result in placing houses or structures within 100-year flood hazard areas that could create new flood hazards or create significant adverse risk impacts from flooding as a result of failure of a levee or dam or inundation by seiches, tsunamis, or mudflows. As explained in Section IX. h) and i) in more detail below, each facility that elects to conduct wet cleaning may need approximately 10 gallons per day and a corresponding amount (e.g., 10 gallons) of wastewater would be generated. Because the generation of 10 gallons per day of wastewater per facility is a relatively minimal amount of water, implementation of PAR 1469 is not expected to require or result in the construction of new water or wastewater treatment or new storm water drainage, or expansion at any of the affected facilities that elect to conduct wet cleaning.

IX. h) & i) Less than Significant Impact. As explained in Section IX. a), PAR 1469 provides facility owners or operators with a choice of using either wet cleaning or dry HEPA vacuuming. If dry HEPA vacuuming is used to comply with the housekeeping requirements, then no water would be needed and no wastewater would be generated. There are 115 facilities that would be required to conduct housekeeping and some facility operators have indicated to SCAQMD staff during site visits that they would prefer to conduct dry HEPA vacuuming in lieu of wet cleaning because dry HEPA vacuuming would allow for the recycling and sale of the captured precious metals. Further, wet cleaning would be less preferable because it would require the use of water and the treatment of the wastewater generated prior to disposal.

Nonetheless, because PAR 1469 provides wet cleaning as an option for complying with the housekeeping requirements, this analysis assumes that some wet cleaning could occur and wastewater may be generated. SCAQMD staff is unable to predict with any precision the number of facilities that will actually elect to conduct wet cleaning, the amount of water that would be needed, and the amount of wastewater that may be generated as part of conducting wet cleaning to comply with PAR 1469.

To get an idea of the scale of water and water quality impacts that might occur from conducting wet cleaning to comply with PAR 1469, SCAQMD staff use the survey data and observations from the site visits to calculate water use estimates for conducting wet cleaning to comply with PAR 1469 based on a peak daily use. For a conservative analysis, all 115 affected facilities are assumed to conduct wet cleaning on the same day to comply with the housekeeping requirements in PAR 1469. Assuming the maximum amount of water that would be needed per facility is approximately 10 gallons for conducting wet cleaning using an approved method, then an equivalent amount of wastewater (e.g., 10 gallons) may also be generated per facility. As such, 1,150 gallons of water per day may be needed for all 115 facilities (e.g., 115 facilities x 10 gallons per day) to conduct wet cleaning and the same amount of wastewater may be generated. Based on some facility owners and operators indicating the use of dry HEPA vacuuming and some facilities currently already conducting wet cleaning, SCAQMD staff believes that the estimated use of water and the corresponding generation of wastewater on a peak day probably substantially overestimates what the actual impact may be. Also, it is important to keep in mind that the maximum amount of water needed to conduct wet cleaning at one facility was estimated to be 10 gallons per day so any wastewater generated at an individual facility should be well within the existing and projected overall capacity of POTWs located throughout the District whenever the wet cleaning activities are conducted. Therefore, wastewater impacts associated with the disposal of waterborne clean-up waste material generated from implementing PAR 1469 are not expected to significantly adversely affect POTW operations. Further, the small volume of wastewater that may be generated from wet cleaning would not be expected to require or warrant the construction of new or the

expansion of existing wastewater treatment or storm water drainage facilities. Table 2-12 summarizes the projected amount of water that may be needed for the 115 affected facilities to conduct wet cleaning to comply with the housekeeping requirements in PAR 1469.

**Table 2-12
Projected Water Demand**

PAR 1469 Wet Cleaning Activity	Additional Water Demand on a Peak Day (gal/day)
PAR 1469 Housekeeping Measures	1,150
Significance Threshold for Potable Water:	262,820
SIGNIFICANT FOR POTABLE WATER?	NO
Significance Threshold for Total Water:	5,000,000
SIGNIFICANT FOR TOTAL WATER?	NO

Therefore, since the estimated potable water demand and total water demand would be less than the significance thresholds for potable and total water, respectively, the water demand impacts that are expected occur from implementing PAR 1469 would be less than significant. Further, existing water supplies are expected to be sufficiently available to serve the proposed project from existing entitlements and resources without the need for new or expanded entitlements because the projected increased water demand is based on a peak day, but that amount of water will not be needed every day. Therefore, PAR 1469 is not expected to have significant adverse water demand impacts.

Conclusion

Based upon these considerations, significant adverse hydrology and water quality impacts are not expected from implementing PAR 1469. Since no significant hydrology and water quality impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
X. LAND USE AND PLANNING.				
Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Land use and planning impacts will be considered significant if the project conflicts with the land use and zoning designations established by local jurisdictions.

Discussion

PAR 1469 will further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations by: 1) requiring the installation of air pollution control devices (APCDs) for tanks meeting specified criteria; 2) requiring periodic source testing and parametric monitoring of APCDs to be conducted; 3) regulating use of chemical fume suppressants; 4) implementing additional housekeeping and best management practices; and 5) complying with building enclosure provisions. Facilities affected by PAR 1469 are primarily located in existing industrial, commercial or mixed land use areas. In order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing APCDs, relocating hexavalent chromium-containing tanks into the buildings, upgrading building enclosures to meet the requirements of PAR 1469, conducting additional source tests, housekeeping, and implementing best management practices. Therefore, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, electricity to operate APCDs, additional source test vehicle trips, APCD maintenance truck trips, and water use for conducting wet cleaning are expected to occur during the implementation of PAR 1469.

X. a) No Impact. PAR 1469 does not require the construction of new facilities, and any physical effects that will result from PAR 1469, will occur at existing facilities located in industrial, commercial, or mixed use areas and would not be expected to go beyond existing boundaries. For this reason, implementation of PAR 1469 would not be expected to physically divide an established community. Therefore, no impacts are anticipated.

X. b) No Impact. Land use and other planning considerations are determined by local governments and no land use or planning requirements will be altered by PAR 1469. All construction and operation activities that are expected to occur as a result of complying with PAR 1469 will occur within the confines of the existing facilities and would not be expected to affect

or conflict with any applicable land use plans, policies, or regulations. Further, no new development or alterations to existing land designations will occur as a result of the implementation of PAR 1469. Therefore, present or planned land uses in the region will not be affected as a result of implementing PAR 1469.

Conclusion

Based upon these considerations, significant adverse land use and planning impacts are not expected from implementing PAR 1469. Since no significant land use and planning impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XI. MINERAL RESOURCES. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Project-related impacts on mineral resources will be considered significant if any of the following conditions are met:

- The project would result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.
- The proposed project results in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

Discussion

PAR 1469 will further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations by: 1) requiring the installation of air pollution control devices (APCDs) for tanks meeting specified criteria; 2) requiring periodic source testing and parametric monitoring of APCDs to be conducted; 3) regulating use of chemical fume suppressants; 4) implementing additional housekeeping and best management practices; and 5) complying with building enclosure provisions. Facilities affected by PAR 1469 are primarily located in existing industrial, commercial or mixed land use areas. In order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing APCDs, relocating hexavalent chromium-containing tanks into the buildings, upgrading building enclosures to meet the requirements of PAR 1469, conducting additional source tests, housekeeping, and implementing best management practices. Therefore, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, electricity to operate APCDs, additional source test vehicle trips, APCD maintenance truck trips, and water use for conducting wet cleaning are expected to occur during the implementation of PAR 1469.

XI. a) & b) No Impact. PAR 1469 would require the installation of new or the modification of existing APCDs, upgrades to building enclosures, and tank relocations. The construction and operation activities necessary to implement PAR 1469 would not require the use of a known

mineral resource. Thus, there are no provisions in PAR 1469 that would result in the loss of availability of a known mineral resource of value to the region and the residents of the state such as aggregate, coal, clay, shale, et cetera, or of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

Conclusion

Based upon these considerations, significant adverse mineral resource impacts are not expected from implementing PAR 1469. Since no significant mineral resource impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XII. NOISE. Would the project result in:				
a) Exposure of persons to or generation of permanent noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public use airport or private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Significance Criteria

Noise impact will be considered significant if:

- Construction noise levels exceed the local noise ordinances or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three decibels (dBA) at the site boundary. Construction noise levels will be considered significant if they exceed federal Occupational Safety and Health Administration (OSHA) noise standards for workers.
- The proposed project operational noise levels exceed any of the local noise ordinances at the site boundary or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three dBA at the site boundary.

Discussion

PAR 1469 will further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations by: 1) requiring the installation of air pollution control devices (APCDs) for tanks meeting specified criteria; 2) requiring periodic source testing and parametric monitoring of APCDs to be conducted; 3) regulating use of chemical fume suppressants; 4) implementing additional housekeeping and best management practices; and 5) complying with building enclosure provisions. Facilities affected by PAR 1469 are primarily located in existing industrial, commercial or mixed land use areas. In order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing APCDs, relocating hexavalent chromium-containing tanks into the buildings, upgrading

building enclosures to meet the requirements of PAR 1469, conducting additional source tests, housekeeping, and implementing best management practices. Therefore, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, electricity to operate APCDs, additional source test vehicle trips, APCD maintenance truck trips, and water use for conducting wet cleaning are expected to occur during the implementation of PAR 1469.

XII. a), b), & c) Less than Significant Impact. The facilities affected by PAR 1469 are currently located in urbanized industrial, commercial, or mixed land use areas. The existing noise environment at each of the facilities is typically dominated by noise from existing equipment on-site, vehicular traffic around the facilities, and trucks entering and exiting facility premises. Large, potentially noise-intensive construction equipment would be needed temporarily during construction to install new or modify existing APCDs and to relocate tanks as part of implementation of PAR 1469. Operation of the construction equipment would be expected to comply with all existing noise control laws and ordinances. Since the facilities are located in industrial, commercial, or mixed land use areas, which have a higher background noise level when compared to other areas, the noise generated during construction will likely be indistinguishable from the background noise levels at the property line.

Once the construction is complete, the noise from the chromium electroplating and chromic acid anodizing activities currently being conducted outdoors will be located within the enclosures as required by PAR 1469. Thus, the existing noise profile from these activities is expected to be less than what is currently being generated on-site. Similarly, for any facility that installs new APCDs such as HEPA filters, substantial amounts of noise are not typically produced by these types of devices. Due to the attenuation rate of noise based on distance from the source, it is unlikely that noise levels exceeding local noise ordinances from operation new air pollution control equipment would occur beyond a facility's boundaries. Furthermore, OSHA and CAL-OSHA have established noise standards to protect worker health. Furthermore, compliance with local noise ordinances limiting the hours of construction will reduce the temporary noise impacts from construction to sensitive receptors. These potential noise increases are expected to be within the allowable noise levels established by the local noise ordinances for industrial areas, and thus are expected to be less than significant.

XII. d) Less than Significant Impact. As explained previously in Section VIII e), 17 of the affected facilities are located within two miles of an airport. However, the installation of APCDs, the upgrades of building enclosures, and the relocations of tanks are expected to be constructed in accordance with all appropriate building, land use and fire codes and any new installations or structures are expected to be well below the height relative to the elevation of existing flight patterns so as to not interfere with plane flight paths consistent with Federal Aviation Regulation, Part 77. However, compliance with PAR 1469 are not expected to expose people residing or working in the vicinity of those 17 facilities to the same degree of excessive noise levels associated with airplanes because all noise producing equipment at those 17 facilities, as well as at all the other affected facilities, must comply with local noise ordinances and applicable OSHA or CAL-OSHA workplace noise reduction requirements. Therefore, the impacts are expected to be less than significant.

Conclusion

Based upon these considerations, significant adverse noise impacts are not expected from the implementing PAR 1469. Since no significant noise impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XIII. POPULATION AND HOUSING.				
Would the project:				
a) Induce substantial growth in an area either directly (for example, by proposing new homes and businesses) or indirectly (e.g. through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of people or existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Impacts of the proposed project on population and housing will be considered significant if the following criteria are exceeded:

- The demand for temporary or permanent housing exceeds the existing supply.
- The proposed project produces additional population, housing or employment inconsistent with adopted plans either in terms of overall amount or location.

Discussion

PAR 1469 will further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations by: 1) requiring the installation of air pollution control devices (APCDs) for tanks meeting specified criteria; 2) requiring periodic source testing and parametric monitoring of APCDs to be conducted; 3) regulating use of chemical fume suppressants; 4) implementing additional housekeeping and best management practices; and 5) complying with building enclosure provisions. Facilities affected by PAR 1469 are primarily located in existing industrial, commercial or mixed land use areas. In order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing APCDs, relocating hexavalent chromium-containing tanks into the buildings, upgrading building enclosures to meet the requirements of PAR 1469, conducting additional source tests, housekeeping, and implementing best management practices. Therefore, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, electricity to operate APCDs, additional source test vehicle trips, APCD maintenance truck trips, and water use for conducting wet cleaning are expected to occur during the implementation of PAR 1469.

XIII. a) No Impact. The construction activities associated with PAR 1469 at the affected facilities are relatively minimal such that they would not be expected to require the relocation of individuals, require new housing or commercial facilities, or change the distribution of the population. On a peak day, the analysis assumes that up to ~~8472~~ workers may be needed to perform construction activities to comply with PAR 1469 at all ~~89~~ ~~98~~ affected facilities and these workers can be supplied from the existing labor pool in the local Southern California area. Further, the installation of new or the modification of existing APCDs would not be expected to require new employees to

operate and maintain the equipment because several of the facilities already have existing APCDs in place with personnel trained to maintain the equipment. In the event that new employees are hired, the number of new employees hired at any one facility would likely be relatively small, perhaps no more than one or two per facility. The human population within the District is anticipated to grow regardless of implementing PAR 1469. As a result, PAR 1469 is not anticipated to generate any significant adverse effects, either direct or indirect, on population growth in the District or population distribution.

XIII. b) No Impact. PAR 1469 regulates operations at existing chromium electroplating and chromic acid anodizing operations facilities and as previously explained in Section III – Air Quality, SCAQMD staff is not aware of any new chromium electroplating and chromic acid anodizing operations facilities planned to be constructed in the immediate future and is unable to predict or forecast, when, if any, would be built in the long-term. Thus, PAR 1469 is not expected to result in the creation of any industry that would affect population growth, directly or indirectly or cause the displacement of substantial numbers of people that would induce the construction of replacement housing elsewhere in the District.

Conclusion

Based upon these considerations, significant adverse population and housing impacts are not expected from implementing PAR 1469. Since no significant population and housing impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XIV. PUBLIC SERVICES. Would the proposal result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:				
a) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Impacts on public services will be considered significant if the project results in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response time or other performance objectives.

Discussion

PAR 1469 will further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations by: 1) requiring the installation of air pollution control devices (APCDs) for tanks meeting specified criteria; 2) requiring periodic source testing and parametric monitoring of APCDs to be conducted; 3) regulating use of chemical fume suppressants; 4) implementing additional housekeeping and best management practices; and 5) complying with building enclosure provisions. Facilities affected by PAR 1469 are primarily located in existing industrial, commercial or mixed land use areas. In order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing APCDs, relocating hexavalent chromium-containing tanks into the buildings, upgrading building enclosures to meet the requirements of PAR 1469, conducting additional source tests, housekeeping, and implementing best management practices. Therefore, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, electricity to operate APCDs, additional source test vehicle trips, APCD maintenance truck trips, and water use for conducting wet cleaning are expected to occur during the implementation of PAR 1469.

XIV. a) & b) No Impact. Implementation of PAR 1469 is expected to cause facility owners or operators to install new or modify existing APCDs, to upgrade building enclosures and to relocate tanks, all the while continuing current operations at the existing affected facilities. New safety hazards are not expected to occur during construction because the construction activities would not involve the use or handling of hazardous materials. The metal PM to be captured by the APCDs, once they become operational, may be explosive in nature. Thus, the design of the APCDs will need to conform to the National Fire Protection Association standards which have special designations for deflagrations (e.g., explosion prevention) from metal dust. Additional information pertaining to these types of protective measures is available in Chapter 8 of the *Industrial Ventilation, A Manual for Recommended Practice for Design*, 28th Edition, published by the American Conference of Governmental Industrial Hygienists, ©2013.

The increased use of APCDs, housekeeping, best management practices, and APCD maintenance activities, or the temporary use of construction worker vehicles and trucks would not be expected to substantially alter or increase the need or demand for additional public services (e.g., fire and police departments and related emergency services, et cetera) above current levels, so no significant impact to these existing services is anticipated.

XIV. c) No Impact. As noted in Section XIII - Population and Housing, PAR 1469 is not expected to induce population growth in any way because the local labor pool (e.g., workforce) is expected to be sufficient to accommodate 8472 construction workers to perform any construction activities that may be necessary at affected facilities and operation of new or modified APCDs is not expected to require additional employees. In the event that new employees are hired, the number of new employees at any one facility would likely be small, no more than one or two per facility. Therefore, with no significant increase in local population, no impacts would be expected to local schools.

XIV. d) No Impact. PAR 1469 is expected to result in the installation and use of new or modified APCDs, upgrades to building enclosures, and the relocation of tanks. Besides obtaining building permits from the local agency and SCAQMD permits for installing APCDs, there will be no need for other types of government services because the affected facilities will continue their existing operations. Because PAR 1469 does not require any change in production rates that would in turn trigger the need for additional oversight by public facilities, PAR 1469 would not result in the need for new or physically altered government facilities in order to maintain acceptable service ratios, response times, or other performance objectives. As explained earlier, there will be no substantive increase in population as a result of implementing PAR 1469, and, therefore, no need for physically altered government facilities.

Conclusion

Based upon these considerations, significant adverse public services impacts are not expected from implementing PAR 1469. Since no significant public services impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XV. RECREATION.				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment or recreational services?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Impacts to recreation will be considered significant if:

- The project results in an increased demand for neighborhood or regional parks or other recreational facilities.
- The project adversely affects existing recreational opportunities.

Discussion

PAR 1469 will further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations by: 1) requiring the installation of air pollution control devices (APCDs) for tanks meeting specified criteria; 2) requiring periodic source testing and parametric monitoring of APCDs to be conducted; 3) regulating use of chemical fume suppressants; 4) implementing additional housekeeping and best management practices; and 5) complying with building enclosure provisions. Facilities affected by PAR 1469 are primarily located in existing industrial, commercial or mixed land use areas. In order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing APCDs, relocating hexavalent chromium-containing tanks into the buildings, upgrading building enclosures to meet the requirements of PAR 1469, conducting additional source tests, housekeeping, and implementing best management practices. Therefore, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, electricity to operate APCDs, additional source test vehicle trips, APCD maintenance truck trips, and water use for conducting wet cleaning are expected to occur during the implementation of PAR 1469.

XV. a) & b) No Impact. As explained previously in Section XIII - Population and Housing, the owners or operators of the affected facilities who need to perform any construction activities to comply with PAR 1469 can draw from the existing labor pool in the local Southern California area. Further, the installation of new or the modification of existing APCDs would not be expected to require new employees to operate and maintain the equipment because several of the facilities already have existing APCDs in place with personnel trained to maintain the equipment. In the

event that new employees are hired, the number of new employees hired at any one facility would likely be relatively small, perhaps no more than one or two per facility. The human population within the District is anticipated to grow regardless of implementing PAR 1469. As a result, PAR 1469 is not anticipated to generate any significant adverse effects, either direct or indirect, on population growth in the District or population distribution. Further, there are no provisions in PAR 1469 that would affect or increase the demand for or use of existing neighborhood and regional parks or other recreational facilities. Further PAR 1469 would not require the construction of new or the expansion of existing recreational facilities that might, in turn, cause adverse physical effects on the environment because PAR 1469 will not directly or indirectly substantively increase or redistribute population.

Conclusion

Based upon these considerations, significant adverse recreation impacts are not expected from implementing PAR 1469. Since no significant recreation impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XVI. SOLID AND HAZARDOUS WASTE. Would the project:				
a) Be served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Comply with federal, state, and local statutes and regulations related to solid and hazardous waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

The proposed project impacts on solid and hazardous waste will be considered significant if the following occurs:

- The generation and disposal of hazardous and non-hazardous waste exceeds the capacity of designated landfills.

Discussion

PAR 1469 will further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations by: 1) requiring the installation of air pollution control devices (APCDs) for tanks meeting specified criteria; 2) requiring periodic source testing and parametric monitoring of APCDs to be conducted; 3) regulating use of chemical fume suppressants; 4) implementing additional housekeeping and best management practices; and 5) complying with building enclosure provisions. Facilities affected by PAR 1469 are primarily located in existing industrial, commercial or mixed land use areas. In order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing APCDs, relocating hexavalent chromium-containing tanks into the buildings, upgrading building enclosures to meet the requirements of PAR 1469, conducting additional source tests, housekeeping, and implementing best management practices. Therefore, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, electricity to operate APCDs, additional source test vehicle trips, APCD maintenance truck trips, and water use for conducting wet cleaning are expected to occur during the implementation of PAR 1469.

XVI. a) Less than Significant Impact. Landfills are permitted by the local enforcement agencies with concurrence from the California Department of Resources Recycling and Recovery (CalRecycle). Local agencies establish the maximum amount of solid waste which can be received by a landfill each day and the operational life of a landfill. This analysis of solid waste impacts assumes that safety and disposal procedures required by various agencies in California will provide reasonable precautions against the improper disposal of hazardous wastes in a municipal waste landfill. Because of state and federal requirements, some facilities are attempting to reduce or minimize the generation of solid and hazardous wastes by incorporating source reduction technologies to reduce the volume or toxicity of wastes generated, including improving operating procedures, using less hazardous or nonhazardous substitute materials, and upgrading or replacing inefficient processes.

PAR 1469 would require the installation of new or the modification of existing APCDs. In the worst case, the analysis assumes that ~~130~~ ~~145~~ APCDs will be installed in all ~~89~~ ~~98~~ affected facilities. While most of the APCDs are expected to be new installations, some existing APCDs will be modified or refurbished while others will be dismantled and completely replaced. Any scrap metal from these APCD installations, replacements, or modifications may have economic value such that it can be recycled, instead of being sent to a landfill. As such, very minimal amounts of solid waste are expected to be generated during construction.

In addition, the operation of APCDs such as HEPA filters could generate solid waste from the collection of metal PM and from the replacement of torn bags and spent filters in HEPA systems. Mixed metal compounds could be captured with the use of filtration controls at a 99.9 percent control rate. Currently, the affected facilities send their waste metal materials for recycling or disposal at a hazardous waste landfill. Based on the number of APCDs that may be needed at the affected facilities, the analysis shows that spent filters, torn bags, and waste collected by the APCDs (HEPA filters) may generate up to ~~27,733~~ ~~30,933~~ cubic yards per year of hazardous waste. The estimated solid waste from these activities is summarized in Table 2-13.

**Table 2-13
Total Solid Waste Generation²²**

Control Type	Potential Number of Affected Units	Total Waste Generated Per Year (cubic yards)
Disposal of Torn Bags and Spent Filters	130 145 (103 118 + 27)	640 (each) 27,733 30,933 (total, worst-case, per year)

Note: This analysis assumes that each APCD will need filter replacement every 3 years and will generate 640 cubic yards of filters, fabrics, metals, and the other total solid waste.

The nearest RCRA landfills to all 89 facilities are Republic Services and US Ecology ~~from all 98 facilities~~. The Republic Services La Paz County Landfill has approximately 20,000,000 cubic yards of capacity remaining for its ~~the~~ 50 year life expectancy (400,000 cubic yards per year). The US Ecology, Inc., facility in Beatty, Nevada has approximately 638,858 cubic yards of capacity remaining for its ~~the~~ three year life expectancy (212,952 cubic yards per year). ~~US Ecology, Inc., currently receives approximately 18,000 cubic yards per year of waste, so 194,952 cubic yards per year (212,952 cubic yards per year – 18,000 cubic yards per year) would be available should any of the affected facilities elect to dispose of their hazardous materials at this facility.~~

With a disposal of ~~27,733~~ ~~30,933~~ cubic yards per year of filters, fabrics, and metals, the total solid and hazardous waste impacts from PAR 1469 are conservatively estimated at 8 percent and 14 percent of the available Republic Services and US Ecology landfill capacity, respectively. Thus, the amount of hazardous waste that may be generated by the proposed project is relatively small, would not be considered to create a significant demand on existing landfill capacity, and would not likely require new RCRA landfills to be built.

²² Subsequent to the release of the Draft EA, modifications were made to PAR 1469 which triggered adjustments to the total solid waste generation. Even with the revised number of potential affected units, the analysis demonstrates that no significant adverse solid waste generation impacts would be expected to occur.

For example, US Ecology, Inc., currently receives approximately 18,000 cubic yards per year of waste, so 194,952 cubic yards per year (212,952 cubic yards per year – 18,000 cubic yards per year) would be available should any of the affected facilities elect to dispose of their hazardous materials at this facility.

Finally, all new APCDs are expected to be installed within the currently developed footprint at existing facilities. Because the newly installed APCDs will have a finite lifetime (approximately 20 years), each unit will ultimately have to be replaced at the end of its useful life. The APCDs may be refurbished and used elsewhere or the scrap metal or other materials from any replaced units would be expected to be recycled due to its economic value. For these reasons, any solid or hazardous waste impacts specifically associated with implementing the proposed project are expected to be minor. As a result, no substantial change in the amount or character of solid or hazardous waste streams is expected to occur.

Because the waste disposal needs from implementing PAR 1469 are expected to be served by existing landfills with sufficient permitted capacity to accommodate each affected facility's solid waste disposal needs, potential solid and hazardous waste impacts from implementing PAR 1469 would not be significant.

XVI. b) No Impact. It is assumed that facility operators at the facilities currently comply with all applicable local, state, or federal waste disposal regulations and PAR 1469 does not contain any provisions that would alter current practices. Thus, implementation of PAR 1469 is not expected to interfere with any affected facility's ability to comply with applicable local, state, or federal waste disposal regulations in a manner that would cause a significant adverse solid and hazardous waste impact.

Conclusion

Based upon these considerations, significant adverse solid and hazardous waste impacts are not expected from implementing PAR 1469. Since no significant solid and hazardous waste impacts were identified, no mitigation measures are necessary or required.

Subsequent to the release of the Draft EA for public review and comment, modifications were made to PAR 1469 that caused some of the calculations in this section to be revised. Staff has reviewed the modifications to PAR 1469 and the revised calculations and concluded that none of the revisions constitute: 1) significant new information; 2) a substantial increase in the severity of an environmental impact; or, 3) provide new information of substantial importance relative to the Draft EA. In addition, revisions to the proposed project in response to verbal or written comments would not create new, avoidable significant effects.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XVII. TRANSPORTATION AND TRAFFIC.				
Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance Criteria

Impacts on transportation and traffic will be considered significant if any of the following criteria apply:

- Peak period levels on major arterials are disrupted to a point where level of service (LOS) is reduced to D, E or F for more than one month.
- An intersection's volume to capacity ratio increase by 0.02 (two percent) or more when the LOS is already D, E or F.
- A major roadway is closed to all through traffic, and no alternate route is available.
- The project conflicts with applicable policies, plans or programs establishing measures of effectiveness, thereby decreasing the performance or safety of any mode of transportation.
- There is an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.
- The demand for parking facilities is substantially increased.
- Water borne, rail car or air traffic is substantially altered.
- Traffic hazards to motor vehicles, bicyclists or pedestrians are substantially increased.
- The need for more than 350 employees.
- An increase in heavy-duty transport truck traffic to and/or from the facility by more than 350 truck round trips per day.
- Increase customer traffic by more than 700 visits per day.

Discussion

PAR 1469 will further reduce hexavalent chromium emissions from chromium electroplating and chromic acid anodizing operations by: 1) requiring the installation of air pollution control devices (APCDs) for tanks meeting specified criteria; 2) requiring periodic source testing and parametric monitoring of APCDs to be conducted; 3) regulating use of chemical fume suppressants; 4) implementing additional housekeeping and best management practices; and 5) complying with building enclosure provisions. Facilities affected by PAR 1469 are primarily located in existing industrial, commercial or mixed land use areas. In order to comply with PAR 1469, owners/operators of affected facilities would be expected to make physical modifications such as installing APCDs, relocating hexavalent chromium-containing tanks into the buildings, upgrading building enclosures to meet the requirements of PAR 1469, conducting additional source tests, housekeeping, and implementing best management practices. Therefore, secondary impacts associated with the use of on- and off-road construction equipment, construction worker vehicle trips, electricity to operate APCDs, additional source test vehicle trips, APCD maintenance truck trips, and water use for conducting wet cleaning are expected to occur during the implementation of PAR 1469.

XVII. a) & b) Less Than Significant Impact

Construction

As previously discussed in Section III - Air Quality and Greenhouse Gas Emissions, compliance with PAR 1469 may require construction activities associated with installing APCDs, upgrading building enclosures, and relocating tanks. Approximately ~~7060~~ construction worker trips (round

trips) and ~~1412~~ vendor truck trips (round trips) for a total of ~~8472~~ construction round trips are assumed to be needed on a peak construction day for 12 APCD and two PTE installations with overlapping construction schedules. Thus, construction is not expected to affect on-site traffic or parking for each affected facility. Further, since the additional ~~8472~~ construction round trips that may occur on a peak day are well below the significant threshold of 350 round trips, regional traffic and transportation impacts during construction are not expected to cause a significance adverse impact. The estimated vehicle trips from all activities on the peak day during construction are summarized in Table 2-14.

Operation

APCDs that are installed to comply with PAR 1469 will collect toxic PM waste products from chromium electroplating and chromic acid anodizing activities, as well as dry solids from spent filters and torn bags. These solid waste materials will need to be transported off-site from each facility to either disposal or recycling facilities. In addition, fresh filters will need to replace the spent filters and these will need to be delivered to each facility. Similarly, fresh bags will be needed to replace torn bags and these will also need to be delivered to each facility as needed. Finally, since all of the affected facilities will be required to conduct source tests to comply with PAR 1469, workers needed to conduct the source tests will also generate trips. All of the trips needed to haul wastes and deliver supplies as well as conduct source tests will contribute to operational traffic and transportation impacts.

For a worst-case analysis, SCAQMD staff assumed that four facilities on a peak day would generate a maximum of four additional vehicle trips (round trips) to account for worker trips needed to conduct source testing and four additional truck trips (round trips) during operation to haul away collected waste, and to inspect, replace and dispose of filters. While these vehicle and truck trips are assumed to overlap on a given day, the eight round trips that may occur are not expected to significantly adversely affect circulation patterns on local roadways or the level of service at intersections near each of the affected facilities. In fact, this low volume of additional daily vehicle traffic is negligible over the entire District. Further, as previously explained in Section XII – Population and Housing, the installation of new or the modification of existing APCDs would not be expected to require new, additional permanent employees to operate and maintain the equipment because many of the facilities already have existing APCDs in place with personnel trained to maintain the equipment. In the event that new employees are hired, it is expected that the number of new employees hired at any one facility would be relatively small, perhaps no more than one or two per facility. Thus, even for the trips that would be associated with employing a small number amount of new workers at each affected facility, implementation of PAR 1469 is not expected to cause a significant increase in the number of worker trips during operation at any of the affected facilities. The estimated vehicles from all activities is summarized in Table 2-14.

Table 2-14
Estimation of Vehicle Trips (Round Trips)²³

Phase	Worker Vehicles	Vendor Trucks
Construction ^a	7060 per day	1412 per day
Operation	Up to 4 additional vehicles (LDA) for source test and 4 additional APCD maintenance truck (MDV) from all 89 98 affected facilities per day ^b	

^a The worst-case analysis for construction is based on a maximum of 5 worker vehicles plus 1 vendor trucks per day for 12 APCD and 2 PTE installations during a peak day to account for overlapping construction.

^b The worst-case analysis during operation is based on a maximum of 4 additional source testing vehicles and 4 additional APCD maintenance truck to do filter/bag replacement or inspection, and disposal at 89 98-affected facilities.

XVII. c) No Impact. As explained previously in Section VIII – Hazards and Hazardous Materials, 17 of the affected facilities are located within two miles of an airport. However, the installation of the APCDs, the upgrades of building enclosures, and the relocation of tanks are expected to be conducted in accordance with all appropriate building, land use and fire codes and any new installations or structures are expected to be well below the height relative to the elevation of existing flight patterns so as to not interfere with plane flight paths consistent with Federal Aviation Regulations, Title 14 CFR Part 77. Thus, compliance with PAR 1469 would not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risk.

XVII. d) & e) No Impact. PAR 1469 does not involve or require the construction of new roadways because the focus of PAR 1469 is reducing hexavalent chromium emissions from chromium electroplating and chromic acid anodizing facilities. Thus, there will be no change to current public roadway designs that could increase traffic hazards. Further, PAR 1469 is not expected to substantially increase traffic hazards or create incompatible uses at or adjacent to the facilities. Emergency access at each of the affected facilities is not expected to be impacted because PAR 1469 does not contain any requirements specific to emergency access points and each affected facility is expected to continue to maintain their existing emergency access. Further, the building enclosure upgrade requirements in PAR 1469 do not contain any specifications relative to any facility's emergency access. In addition, in order to build the PTEs total enclosures, the facility would likely need to get approvals from the local land use authority and that's when they would check for emergency access. PAR 1469 does not include provisions which would conflict with emergency access. Since PAR 1469 is expected to involve short-term construction activities that would create new, minor delivery/haul truck trips that would be expected to cease after construction is completed, the proposed project is not expected to alter the existing long-term circulation patterns within the areas of each affected facility during construction. Similarly, during operation, the projected increase of additional vehicle trips that may be needed at each affected facility would be at less than significant levels individually and cumulatively such that implementation of the proposed project is not expected to require a modification to circulation. Thus, no long-term impacts on the traffic circulation system are expected to occur during construction or operation.

²³ Subsequent to the release of the Draft EA, modifications were made to PAR 1469 which triggered adjustments to the total number of affected facilities. Even with the revised number of potential affected facilities, the analysis demonstrates that no significant adverse transportation and traffic impacts would be expected to occur.

XVII. f) No Impact. PAR 1469 does not contain any requirements that would affect or alter adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. Further, the facilities would still be expected to comply with, and not interfere with adopted policies, plans, or programs supporting alternative transportation (e.g., bicycles or buses) that exist in their respective cities. Since all of the requirements and compliance activities associated with implementing PAR 1469 would be expected to occur on-site, PAR 1469 would have no impact on each facility's ability to comply with any applicable alternative transportation plans or policies.

Conclusion

Based upon these considerations, significant adverse transportation and traffic impacts are not expected from implementing PAR 1469. Since no significant transportation and traffic impacts were identified, no mitigation measures are necessary or required.

Subsequent to the release of the Draft EA for public review and comment, modifications were made to PAR 1469 that caused some of the calculations in this section to be revised. Staff has reviewed the modifications to PAR 1469 and the revised calculations and concluded that none of the revisions constitute: 1) significant new information; 2) a substantial increase in the severity of an environmental impact; or, 3) provide new information of substantial importance relative to the Draft EA. In addition, revisions to the proposed project in response to verbal or written comments would not create new, avoidable significant effects.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE.				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion

XVIII. a) No Impact. As explained in Section IV - Biological Resources, PAR 1469 is not expected to significantly adversely affect plant or animal species or the habitat on which they rely because any construction and operational activities associated with the facilities are expected to occur entirely within the boundaries of existing developed facilities in areas that have been greatly disturbed and that currently do not support any species of concern or the habitat on which they rely. For these reasons, PAR 1469 is not expected to reduce or eliminate any plant or animal species or destroy prehistoric records of the past.

XVIII. b) Less Than Significant Impact. Based on the foregoing analyses, PAR 1469 would not result in significant adverse project-specific environmental impacts. Potential adverse impacts from implementing PAR 1469 would not be “cumulatively considerable” as defined by CEQA Guidelines Section 15064(h)(1) for any environmental topic because there are no, or only minor incremental project-specific impacts that were concluded to be less than significant. Per CEQA

Guidelines Section 15064(h)(4), the mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulative considerable. SCAQMD cumulative significant thresholds are the same as project-specific significance thresholds.

This approach was upheld by the court in *Citizens for Responsible Equitable Environmental Development v. City of Chula Vista* (2011) 197 Cal. App. 4th 327, 334. The Court determined that where it can be found that a project did not exceed the SCAQMD's established air quality significance thresholds, the City of Chula Vista properly concluded that the project would not cause a significant environmental effect, nor result in a cumulatively considerable increase in these pollutants. The court found this determination to be consistent with CEQA Guidelines §15064.7, stating, "The lead agency may rely on a threshold of significance standard to determine whether a project will cause a significant environmental effect." The court found that, "Although the project will contribute additional air pollutants to an existing nonattainment area, these increases are below the significance criteria...". "Thus, we conclude that no fair argument exists that the Project will cause a significant unavoidable cumulative contribution to an air quality impact."—~~As in *Chula Vista* and *Rialto Citizens for Responsible Growth*, here the SCAQMD has demonstrated, when using accurate and appropriate data and assumptions, that the project will not exceed the established SCAQMD significance thresholds. See also, *Rialto Citizens for Responsible Growth v. City of Rialto* (2012) 208 Cal. App. 4th 899.~~ In *Rialto Citizens for Responsible Growth*, the court upheld the SCAQMD's approach to utilizing the established air quality significance thresholds to determine whether the impacts of a project would be cumulatively considerable. See also, *Rialto Citizens for Responsible Growth v. City of Rialto* (2012) 208 Cal. App. 4th 899. As in *Chula Vista* and *Rialto Citizens for Responsible Growth*, here the SCAQMD has demonstrated, when using accurate and appropriate data and assumptions, that the project will not exceed the established SCAQMD significance thresholds. Thus, the implementation of PAR 1469 will not cause a significant unavoidable cumulative impact.

Therefore, there is no potential for significant adverse cumulative or cumulatively considerable impacts to be generated by PAR 1469 for any environmental topic.

XVIII. c) Less Than Significant Impact. Based on the foregoing analyses, PAR 1469 is not expected to cause adverse effects on human beings for any environmental topic, either directly or indirectly because: 1) the air quality and GHG impacts were determined to be less than the significance thresholds as analyzed in Section III – Air Quality and Greenhouse Gases; 2) the increased demand for energy, water, and solid waste disposal, can be met by utilizing existing services as analyzed in Section VI - Energy, Section IX - Hydrology and Water Quality, and Section XVI – Solid and Hazardous Waste; 3) the hazards and hazardous materials impacts were determined to be less than significant as analyzed in Section VIII – Hazards and Hazardous Materials; 4) the noise impacts were determined to be less than significant as analyzed in Section XII – Noise; and, 5) the transportation and traffic impacts were determined to be less than the significance thresholds as analyzed in Section XVI – Transportation and Traffic. In addition, the analysis concluded that there would be no significant environmental impacts for the remaining environmental impact topic areas: aesthetics, agriculture and forestry resources, biological resources, cultural resources, geology and soils, land use and planning, mineral resources, public services, population and housing, and recreation.

Conclusion

As previously discussed in environmental topics I through XVIII, the proposed project has no potential to cause significant adverse environmental effects. Therefore, no mitigation measures are necessary or required.

APPENDICES

Appendix A: Proposed Amended Rule 1469 – Hexavalent Chromium Emissions From Chromium Electroplating And Chromic Acid Anodizing Operations

Appendix B: CalEEMod Files and Assumptions

Appendix C: CEQA Impact Evaluations – Assumptions and Calculations

Appendix D: PAR 1469 List of Affected Facilities

Appendix E: Comment Letters Received on the Draft EA and Responses to Comments

APPENDIX A

Proposed Amended Rule 1469 – Hexavalent Chromium Emissions From Chromium Electroplating And Chromic Acid Anodizing Operations

In order to save space and avoid repetition, please refer to the latest version of Proposed Amended Rule 1469 located elsewhere in the Governing Board Package. The version of Proposed Amended Rule 1469 that was circulated with the Draft EA and released on February 16, 2018 for a 32-day public review and comment period ending on March 20, 2018 was identified as “Preliminary Draft Rule Language – January 19, 2018”.

Original hard copies of the Draft EA, which include the draft version of the proposed amended rule listed above, can be obtained through the SCAQMD Public Information Center at the Diamond Bar headquarters or by contacting Fabian Wesson, Public Advisor at the SCAQMD’s Public Information Center by phone at (909) 396-2039 or by email at PICrequests@aqmd.gov.

APPENDIX B

CalEEMod Files And Assumptions

APPENDIX B

CalEEMod Files And Assumptions

- **1 tank relocation (annual run)**

PAR1469_construction tank relocation - South Coast AQMD Air District, Annual

PAR1469_construction tank relocation
South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	11			Operational Year	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 1 project

Construction Phase - 1 tank relocation (1 welder, 1 forklift)

Off-road Equipment - 1 tank relocation (1 welder, 1 forklift)

Trips and VMT - each tank relocation needs 5 worker vehicles and 1 vendor vehicle

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Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	MHDT
tblTripsAndVMT	WorkerTripNumber	0.00	10.00

2.0 Emissions Summary

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
2	2-14-2018	5-13-2018	0.0039	0.0039
		Highest	0.0039	0.0039

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

PAR1469_construction tank relocation - South Coast AQMD Air District, Annual

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	4/2/2018	4/6/2018	5	5	APCD installation

Acres of Grading (Site Preparation Phase): 0

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Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Aerial Lifts	0	4.00	63	0.31
Building Construction	Air Compressors	0	4.00	78	0.48
Building Construction	Cranes	0	4.00	231	0.29
Building Construction	Forklifts	1	4.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Welders	1	4.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	2	10.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	MHDT	HHDT

3.1 Mitigation Measures Construction

PAR1469_construction tank relocation - South Coast AQMD Air District, Annual

3.2 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.7000e-004	4.0700e-003	3.8400e-003	1.0000e-005		3.0000e-004	3.0000e-004		2.9000e-004	2.9000e-004	0.0000	0.4097	0.4097	1.0000e-004	0.0000	0.4122
Total	7.7000e-004	4.0700e-003	3.8400e-003	1.0000e-005		3.0000e-004	3.0000e-004		2.9000e-004	2.9000e-004	0.0000	0.4097	0.4097	1.0000e-004	0.0000	0.4122

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	3.5000e-004	1.7000e-004	0.0000	3.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.0827	0.0827	0.0000	0.0000	0.0828
Worker	1.3000e-004	1.1000e-004	1.1700e-003	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2631	0.2631	1.0000e-005	0.0000	0.2634
Total	1.5000e-004	4.6000e-004	1.3400e-003	0.0000	3.0000e-004	1.0000e-005	3.2000e-004	8.0000e-005	1.0000e-005	9.0000e-005	0.0000	0.3459	0.3459	1.0000e-005	0.0000	0.3461

PAR1469_construction tank relocation - South Coast AQMD Air District, Annual

3.2 Building Construction - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.7000e-004	4.0700e-003	3.8400e-003	1.0000e-005		3.0000e-004	3.0000e-004		2.9000e-004	2.9000e-004	0.0000	0.4097	0.4097	1.0000e-004	0.0000	0.4122
Total	7.7000e-004	4.0700e-003	3.8400e-003	1.0000e-005		3.0000e-004	3.0000e-004		2.9000e-004	2.9000e-004	0.0000	0.4097	0.4097	1.0000e-004	0.0000	0.4122

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	3.5000e-004	1.7000e-004	0.0000	3.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.0827	0.0827	0.0000	0.0000	0.0828
Worker	1.3000e-004	1.1000e-004	1.1700e-003	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2631	0.2631	1.0000e-005	0.0000	0.2634
Total	1.5000e-004	4.6000e-004	1.3400e-003	0.0000	3.0000e-004	1.0000e-005	3.2000e-004	8.0000e-005	1.0000e-005	9.0000e-005	0.0000	0.3459	0.3459	1.0000e-005	0.0000	0.3461

4.0 Operational Detail - Mobile

PAR1469_construction tank relocation - South Coast AQMD Air District, Annual

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.544547	0.044708	0.198656	0.126890	0.018261	0.005879	0.019662	0.030939	0.001958	0.002113	0.004656	0.000702	0.001029

PAR1469_construction tank relocation - South Coast AQMD Air District, Annual

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

PAR1469_construction tank relocation - South Coast AQMD Air District, Annual

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

PAR1469_construction tank relocation - South Coast AQMD Air District, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

PAR1469_construction tank relocation - South Coast AQMD Air District, Annual

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

7.0 Water Detail

7.1 Mitigation Measures Water

PAR1469_construction tank relocation - South Coast AQMD Air District, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

PAR1469_construction tank relocation - South Coast AQMD Air District, Annual

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

PAR1469_construction tank relocation - South Coast AQMD Air District, Annual

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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PAR1469_construction tank relocation - South Coast AQMD Air District, Annual

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

APPENDIX B

CalEEMod Files And Assumptions

- **1 tank relocation (Summer run)**

PAR1469_construction tank relocation - South Coast AQMD Air District, Summer

PAR1469_construction tank relocation
South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	11			Operational Year	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 1 project

Construction Phase - 1 tank relocation (1 welder, 1 forklift)

Off-road Equipment - 1 tank relocation (1 welder, 1 forklift)

Trips and VMT - each tank relocation needs 5 worker vehicles and 1 vendor vehicle

PAR1469_construction tank relocation - South Coast AQMD Air District, Summer

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	MHDT
tblTripsAndVMT	WorkerTripNumber	0.00	10.00

2.0 Emissions Summary

PAR1469_construction tank relocation - South Coast AQMD Air District, Summer

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	1.0000e-005	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000	0.0000	2.3000e-004

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	1.0000e-005	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000	0.0000	2.3000e-004

PAR1469_construction tank relocation - South Coast AQMD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	4/2/2018	4/6/2018	5	5	APCD installation

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Aerial Lifts	0	4.00	63	0.31
Building Construction	Air Compressors	0	4.00	78	0.48
Building Construction	Cranes	0	4.00	231	0.29
Building Construction	Forklifts	1	4.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Welders	1	4.00	46	0.45

Trips and VMT

PAR1469_construction tank relocation - South Coast AQMD Air District, Summer

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	2	10.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	MHDT	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3100	1.6282	1.5351	2.0400e-003		0.1196	0.1196		0.1146	0.1146		180.6327	180.6327	0.0438		181.7285
Total	0.3100	1.6282	1.5351	2.0400e-003		0.1196	0.1196		0.1146	0.1146		180.6327	180.6327	0.0438		181.7285

PAR1469_construction tank relocation - South Coast AQMD Air District, Summer

3.2 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.3400e-003	0.1354	0.0647	3.5000e-004	0.0135	2.6300e-003	0.0162	4.0600e-003	2.5200e-003	6.5700e-003		36.5206	36.5206	7.6000e-004		36.5396
Worker	0.0539	0.0386	0.5018	1.2300e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		121.9352	121.9352	4.1600e-003		122.0391
Total	0.0622	0.1740	0.5664	1.5800e-003	0.1253	3.5200e-003	0.1288	0.0337	3.3400e-003	0.0370		158.4558	158.4558	4.9200e-003		158.5787

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3100	1.6282	1.5351	2.0400e-003		0.1196	0.1196		0.1146	0.1146	0.0000	180.6327	180.6327	0.0438		181.7285
Total	0.3100	1.6282	1.5351	2.0400e-003		0.1196	0.1196		0.1146	0.1146	0.0000	180.6327	180.6327	0.0438		181.7285

PAR1469_construction tank relocation - South Coast AQMD Air District, Summer

3.2 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.3400e-003	0.1354	0.0647	3.5000e-004	0.0135	2.6300e-003	0.0162	4.0600e-003	2.5200e-003	6.5700e-003		36.5206	36.5206	7.6000e-004		36.5396
Worker	0.0539	0.0386	0.5018	1.2300e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		121.9352	121.9352	4.1600e-003		122.0391
Total	0.0622	0.1740	0.5664	1.5800e-003	0.1253	3.5200e-003	0.1288	0.0337	3.3400e-003	0.0370		158.4558	158.4558	4.9200e-003		158.5787

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

PAR1469_construction tank relocation - South Coast AQMD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.544547	0.044708	0.198656	0.126890	0.018261	0.005879	0.019662	0.030939	0.001958	0.002113	0.004656	0.000702	0.001029

5.0 Energy Detail

Historical Energy Use: N

PAR1469_construction tank relocation - South Coast AQMD Air District, Summer

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

PAR1469_construction tank relocation - South Coast AQMD Air District, Summer

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

PAR1469_construction tank relocation - South Coast AQMD Air District, Summer

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

7.0 Water Detail

PAR1469_construction tank relocation - South Coast AQMD Air District, Summer

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

APPENDIX B

CalEEMod Files And Assumptions

- **1 tank relocation (Winter run)**

PAR1469_construction tank relocation - South Coast AQMD Air District, Winter

PAR1469_construction tank relocation
South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	11			Operational Year	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 1 project

Construction Phase - 1 tank relocation (1 welder, 1 forklift)

Off-road Equipment - 1 tank relocation (1 welder, 1 forklift)

Trips and VMT - each tank relocation needs 5 worker vehicles and 1 vendor vehicle

PAR1469_construction tank relocation - South Coast AQMD Air District, Winter

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	MHDT
tblTripsAndVMT	WorkerTripNumber	0.00	10.00

2.0 Emissions Summary

PAR1469_construction tank relocation - South Coast AQMD Air District, Winter

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	1.0000e-005	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000	0.0000	2.3000e-004

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	1.0000e-005	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000	0.0000	2.3000e-004

PAR1469_construction tank relocation - South Coast AQMD Air District, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	4/2/2018	4/6/2018	5	5	APCD installation

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Aerial Lifts	0	4.00	63	0.31
Building Construction	Air Compressors	0	4.00	78	0.48
Building Construction	Cranes	0	4.00	231	0.29
Building Construction	Forklifts	1	4.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Welders	1	4.00	46	0.45

Trips and VMT

PAR1469_construction tank relocation - South Coast AQMD Air District, Winter

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	2	10.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	MHDT	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3100	1.6282	1.5351	2.0400e-003		0.1196	0.1196		0.1146	0.1146		180.6327	180.6327	0.0438		181.7285
Total	0.3100	1.6282	1.5351	2.0400e-003		0.1196	0.1196		0.1146	0.1146		180.6327	180.6327	0.0438		181.7285

PAR1469_construction tank relocation - South Coast AQMD Air District, Winter

3.2 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.5700e-003	0.1388	0.0680	3.5000e-004	0.0135	2.6400e-003	0.0162	4.0600e-003	2.5200e-003	6.5800e-003		36.4338	36.4338	7.8000e-004		36.4533
Worker	0.0586	0.0423	0.4541	1.1500e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		114.0679	114.0679	3.8900e-003		114.1652
Total	0.0672	0.1812	0.5221	1.5000e-003	0.1253	3.5300e-003	0.1288	0.0337	3.3400e-003	0.0370		150.5017	150.5017	4.6700e-003		150.6185

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3100	1.6282	1.5351	2.0400e-003		0.1196	0.1196		0.1146	0.1146	0.0000	180.6327	180.6327	0.0438		181.7285
Total	0.3100	1.6282	1.5351	2.0400e-003		0.1196	0.1196		0.1146	0.1146	0.0000	180.6327	180.6327	0.0438		181.7285

PAR1469_construction tank relocation - South Coast AQMD Air District, Winter

3.2 Building Construction - 2018**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.5700e-003	0.1388	0.0680	3.5000e-004	0.0135	2.6400e-003	0.0162	4.0600e-003	2.5200e-003	6.5800e-003		36.4338	36.4338	7.8000e-004		36.4533
Worker	0.0586	0.0423	0.4541	1.1500e-003	0.1118	8.9000e-004	0.1127	0.0296	8.2000e-004	0.0305		114.0679	114.0679	3.8900e-003		114.1652
Total	0.0672	0.1812	0.5221	1.5000e-003	0.1253	3.5300e-003	0.1288	0.0337	3.3400e-003	0.0370		150.5017	150.5017	4.6700e-003		150.6185

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

PAR1469_construction tank relocation - South Coast AQMD Air District, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.544547	0.044708	0.198656	0.126890	0.018261	0.005879	0.019662	0.030939	0.001958	0.002113	0.004656	0.000702	0.001029

5.0 Energy Detail

Historical Energy Use: N

PAR1469_construction tank relocation - South Coast AQMD Air District, Winter

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

PAR1469_construction tank relocation - South Coast AQMD Air District, Winter

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

PAR1469_construction tank relocation - South Coast AQMD Air District, Winter

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

7.0 Water Detail

PAR1469_construction tank relocation - South Coast AQMD Air District, Winter

7.1 Mitigation Measures Water**8.0 Waste Detail**

8.1 Mitigation Measures Waste**9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

APPENDIX B

CalEEMod Files And Assumptions

- **APCD installation (annual run)**

PAR1469_20180126_construction - South Coast AQMD Air District, Annual

PAR1469_20180126_construction
South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	11			Operational Year	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 1 project

Construction Phase - worst-case construction day: 12 APCDs installation (each has 1 air compressor, 1 welder, 1 forklift, 1 aerial lift)

Off-road Equipment - worst-case construction day: 12 APCDs installation (each has 1 air compressor, 1 welder, 1 forklift, 1 aerial lift)

Trips and VMT - each APCD installation needs 5 worker vehicles and 1 vendor vehicle

PAR1469_20180126_construction - South Coast AQMD Air District, Annual

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	12.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	24.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	MHDT
tblTripsAndVMT	WorkerTripNumber	0.00	120.00

2.0 Emissions Summary

PAR1469_20180126_construction - South Coast AQMD Air District, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
2	2-14-2018	5-13-2018	0.0876	0.0876
		Highest	0.0876	0.0876

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

PAR1469_20180126_construction - South Coast AQMD Air District, Annual

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	4/2/2018	4/6/2018	5	5	APCD installation

Acres of Grading (Site Preparation Phase): 0

PAR1469_20180126_construction - South Coast AQMD Air District, Annual

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Aerial Lifts	12	4.00	63	0.31
Building Construction	Air Compressors	12	4.00	78	0.48
Building Construction	Cranes	0	4.00	231	0.29
Building Construction	Forklifts	12	4.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Welders	12	4.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	48	120.00	24.00	0.00	14.70	6.90	20.00	LD_Mix	MHDT	HHDT

3.1 Mitigation Measures Construction

PAR1469_20180126_construction - South Coast AQMD Air District, Annual

3.2 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0159	0.0996	0.0995	1.5000e-004		6.8900e-003	6.8900e-003		6.7200e-003	6.7200e-003	0.0000	12.3215	12.3215	2.3900e-003	0.0000	12.3813
Total	0.0159	0.0996	0.0995	1.5000e-004		6.8900e-003	6.8900e-003		6.7200e-003	6.7200e-003	0.0000	12.3215	12.3215	2.3900e-003	0.0000	12.3813

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.5000e-004	4.2200e-003	2.0100e-003	1.0000e-005	4.0000e-004	8.0000e-005	4.8000e-004	1.2000e-004	8.0000e-005	2.0000e-004	0.0000	0.9929	0.9929	2.0000e-005	0.0000	0.9935
Worker	1.5900e-003	1.3000e-003	0.0140	3.0000e-005	3.2900e-003	3.0000e-005	3.3200e-003	8.7000e-004	2.0000e-005	9.0000e-004	0.0000	3.1575	3.1575	1.1000e-004	0.0000	3.1602
Total	1.8400e-003	5.5200e-003	0.0160	4.0000e-005	3.6900e-003	1.1000e-004	3.8000e-003	9.9000e-004	1.0000e-004	1.1000e-003	0.0000	4.1505	4.1505	1.3000e-004	0.0000	4.1537

PAR1469_20180126_construction - South Coast AQMD Air District, Annual

3.2 Building Construction - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0159	0.0996	0.0995	1.5000e-004		6.8900e-003	6.8900e-003		6.7200e-003	6.7200e-003	0.0000	12.3215	12.3215	2.3900e-003	0.0000	12.3813
Total	0.0159	0.0996	0.0995	1.5000e-004		6.8900e-003	6.8900e-003		6.7200e-003	6.7200e-003	0.0000	12.3215	12.3215	2.3900e-003	0.0000	12.3813

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.5000e-004	4.2200e-003	2.0100e-003	1.0000e-005	4.0000e-004	8.0000e-005	4.8000e-004	1.2000e-004	8.0000e-005	2.0000e-004	0.0000	0.9929	0.9929	2.0000e-005	0.0000	0.9935
Worker	1.5900e-003	1.3000e-003	0.0140	3.0000e-005	3.2900e-003	3.0000e-005	3.3200e-003	8.7000e-004	2.0000e-005	9.0000e-004	0.0000	3.1575	3.1575	1.1000e-004	0.0000	3.1602
Total	1.8400e-003	5.5200e-003	0.0160	4.0000e-005	3.6900e-003	1.1000e-004	3.8000e-003	9.9000e-004	1.0000e-004	1.1000e-003	0.0000	4.1505	4.1505	1.3000e-004	0.0000	4.1537

4.0 Operational Detail - Mobile

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4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.544547	0.044708	0.198656	0.126890	0.018261	0.005879	0.019662	0.030939	0.001958	0.002113	0.004656	0.000702	0.001029

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5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

PAR1469_20180126_construction - South Coast AQMD Air District, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

PAR1469_20180126_construction - South Coast AQMD Air District, Annual

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Total	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

7.0 Water Detail

7.1 Mitigation Measures Water

PAR1469_20180126_construction - South Coast AQMD Air District, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

PAR1469_20180126_construction - South Coast AQMD Air District, Annual

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

PAR1469_20180126_construction - South Coast AQMD Air District, Annual

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

APPENDIX B

CalEEMod Files And Assumptions

- **APCD installation (Summer run)**

PAR1469_20180126_construction - South Coast AQMD Air District, Summer

PAR1469_20180126_construction
South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	11			Operational Year	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 1 project

Construction Phase - worst-case construction day: 12 APCDs installation (each has 1 air compressor, 1 welder, 1 forklift, 1 aerial lift)

Off-road Equipment - worst-case construction day: 12 APCDs installation (each has 1 air compressor, 1 welder, 1 forklift, 1 aerial lift)

Trips and VMT - each APCD installation needs 5 worker vehicles and 1 vendor vehicle

PAR1469_20180126_construction - South Coast AQMD Air District, Summer

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	12.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	24.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	MHDT
tblTripsAndVMT	WorkerTripNumber	0.00	120.00

2.0 Emissions Summary

PAR1469_20180126_construction - South Coast AQMD Air District, Summer

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	1.0000e-005	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000	0.0000	2.3000e-004

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	1.0000e-005	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000	0.0000	2.3000e-004

PAR1469_20180126_construction - South Coast AQMD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	4/2/2018	4/6/2018	5	5	APCD installation

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Aerial Lifts	12	4.00	63	0.31
Building Construction	Air Compressors	12	4.00	78	0.48
Building Construction	Cranes	0	4.00	231	0.29
Building Construction	Forklifts	12	4.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Welders	12	4.00	46	0.45

Trips and VMT

PAR1469_20180126_construction - South Coast AQMD Air District, Summer

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	48	120.00	24.00	0.00	14.70	6.90	20.00	LD_Mix	MHDT	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	6.3604	39.8495	39.8001	0.0584		2.7575	2.7575		2.6878	2.6878		5,432.8440	5,432.8440	1.0555		5,459.2324
Total	6.3604	39.8495	39.8001	0.0584		2.7575	2.7575		2.6878	2.6878		5,432.8440	5,432.8440	1.0555		5,459.2324

PAR1469_20180126_construction - South Coast AQMD Air District, Summer

3.2 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1001	1.6243	0.7759	4.2200e-003	0.1622	0.0316	0.1938	0.0487	0.0302	0.0789		438.2475	438.2475	9.1200e-003		438.4755
Worker	0.6466	0.4636	6.0211	0.0147	1.3413	0.0107	1.3520	0.3557	9.8600e-003	0.3656		1,463.2220	1,463.2220	0.0499		1,464.4693
Total	0.7467	2.0879	6.7970	0.0189	1.5035	0.0423	1.5458	0.4044	0.0401	0.4445		1,901.4695	1,901.4695	0.0590		1,902.9448

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	6.3604	39.8495	39.8001	0.0584		2.7575	2.7575		2.6878	2.6878	0.0000	5,432.8439	5,432.8439	1.0555		5,459.2324
Total	6.3604	39.8495	39.8001	0.0584		2.7575	2.7575		2.6878	2.6878	0.0000	5,432.8439	5,432.8439	1.0555		5,459.2324

PAR1469_20180126_construction - South Coast AQMD Air District, Summer

3.2 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1001	1.6243	0.7759	4.2200e-003	0.1622	0.0316	0.1938	0.0487	0.0302	0.0789		438.2475	438.2475	9.1200e-003		438.4755
Worker	0.6466	0.4636	6.0211	0.0147	1.3413	0.0107	1.3520	0.3557	9.8600e-003	0.3656		1,463.2220	1,463.2220	0.0499		1,464.4693
Total	0.7467	2.0879	6.7970	0.0189	1.5035	0.0423	1.5458	0.4044	0.0401	0.4445		1,901.4695	1,901.4695	0.0590		1,902.9448

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

PAR1469_20180126_construction - South Coast AQMD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.544547	0.044708	0.198656	0.126890	0.018261	0.005879	0.019662	0.030939	0.001958	0.002113	0.004656	0.000702	0.001029

5.0 Energy Detail

Historical Energy Use: N

PAR1469_20180126_construction - South Coast AQMD Air District, Summer

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	

PAR1469_20180126_construction - South Coast AQMD Air District, Summer

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

PAR1469_20180126_construction - South Coast AQMD Air District, Summer

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

7.0 Water Detail

PAR1469_20180126_construction - South Coast AQMD Air District, Summer

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

APPENDIX B

CalEEMod Files And Assumptions

- **APCD installation (Winter run)**

PAR1469_20180126_construction - South Coast AQMD Air District, Winter

PAR1469_20180126_construction
South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	11			Operational Year	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 1 project

Construction Phase - worst-case construction day: 12 APCDs installation (each has 1 air compressor, 1 welder, 1 forklift, 1 aerial lift)

Off-road Equipment - worst-case construction day: 12 APCDs installation (each has 1 air compressor, 1 welder, 1 forklift, 1 aerial lift)

Trips and VMT - each APCD installation needs 5 worker vehicles and 1 vendor vehicle

PAR1469_20180126_construction - South Coast AQMD Air District, Winter

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	5.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	12.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	24.00
tblTripsAndVMT	VendorVehicleClass	HDT_Mix	MHDT
tblTripsAndVMT	WorkerTripNumber	0.00	120.00

2.0 Emissions Summary

PAR1469_20180126_construction - South Coast AQMD Air District, Winter

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	1.0000e-005	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000	0.0000	2.3000e-004

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	1.0000e-005	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000	0.0000	2.3000e-004

PAR1469_20180126_construction - South Coast AQMD Air District, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	4/2/2018	4/6/2018	5	5	APCD installation

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Aerial Lifts	12	4.00	63	0.31
Building Construction	Air Compressors	12	4.00	78	0.48
Building Construction	Cranes	0	4.00	231	0.29
Building Construction	Forklifts	12	4.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Welders	12	4.00	46	0.45

Trips and VMT

PAR1469_20180126_construction - South Coast AQMD Air District, Winter

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	48	120.00	24.00	0.00	14.70	6.90	20.00	LD_Mix	MHDT	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	6.3604	39.8495	39.8001	0.0584		2.7575	2.7575		2.6878	2.6878		5,432.8440	5,432.8440	1.0555		5,459.2324
Total	6.3604	39.8495	39.8001	0.0584		2.7575	2.7575		2.6878	2.6878		5,432.8440	5,432.8440	1.0555		5,459.2324

PAR1469_20180126_construction - South Coast AQMD Air District, Winter

3.2 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1028	1.6661	0.8155	4.2100e-003	0.1622	0.0317	0.1939	0.0487	0.0303	0.0790		437.2053	437.2053	9.3600e-003		437.4392
Worker	0.7030	0.5079	5.4491	0.0138	1.3413	0.0107	1.3520	0.3557	9.8600e-003	0.3656		1,368.8150	1,368.8150	0.0467		1,369.9828
Total	0.8059	2.1739	6.2646	0.0180	1.5035	0.0424	1.5459	0.4044	0.0402	0.4446		1,806.0203	1,806.0203	0.0561		1,807.4220

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	6.3604	39.8495	39.8001	0.0584		2.7575	2.7575		2.6878	2.6878	0.0000	5,432.8439	5,432.8439	1.0555		5,459.2324
Total	6.3604	39.8495	39.8001	0.0584		2.7575	2.7575		2.6878	2.6878	0.0000	5,432.8439	5,432.8439	1.0555		5,459.2324

PAR1469_20180126_construction - South Coast AQMD Air District, Winter

3.2 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1028	1.6661	0.8155	4.2100e-003	0.1622	0.0317	0.1939	0.0487	0.0303	0.0790		437.2053	437.2053	9.3600e-003		437.4392
Worker	0.7030	0.5079	5.4491	0.0138	1.3413	0.0107	1.3520	0.3557	9.8600e-003	0.3656		1,368.8150	1,368.8150	0.0467		1,369.9828
Total	0.8059	2.1739	6.2646	0.0180	1.5035	0.0424	1.5459	0.4044	0.0402	0.4446		1,806.0203	1,806.0203	0.0561		1,807.4220

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

PAR1469_20180126_construction - South Coast AQMD Air District, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.544547	0.044708	0.198656	0.126890	0.018261	0.005879	0.019662	0.030939	0.001958	0.002113	0.004656	0.000702	0.001029

5.0 Energy Detail

Historical Energy Use: N

PAR1469_20180126_construction - South Coast AQMD Air District, Winter

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

PAR1469_20180126_construction - South Coast AQMD Air District, Winter

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

PAR1469_20180126_construction - South Coast AQMD Air District, Winter

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

7.0 Water Detail

PAR1469_20180126_construction - South Coast AQMD Air District, Winter

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

APPENDIX C

CEQA Impact Evaluations – Assumptions and Calculations

Appendix C
CEQA Construction Impact Evaluations - Assumptions and Calculations
(2018/2/14 rev)

Criteria Pollutant Emissions Summary

PAR 1469 Requirement	VOC, lb/day	NOx, lb/day	CO, lb/day	SOX, lb/day	PM10, lb/day	PM2.5, lb/day
1 tank relocation (Summer)	0.37	1.80	2.10	0.004	0.25	0.15
1 tank relocation (Winter)	0.38	1.81	2.06	0.004	0.25	0.03
Peak Day - 3 tank relocation on the same day	1.13	5.43	6.30	0.01	0.75	0.45
12 APCD Installations (Summer)	7.11	41.94	46.60	0.08	4.30	3.13
12 APCD Installations (Winter)	7.17	42.02	46.06	0.08	4.30	3.13
Peak Day - 12 APCD Installations on the same day	7.17	42.02	46.60	0.08	4.30	3.13
Daily Peak Construction Emissions	7.17	42.02	46.60	0.08	4.30	3.13
SIGNIFICANCE THRESHOLD FOR CONSTRUCTION	75.00	100.00	550.00	150.00	150.00	55.00

Note:

- The emissions are estimated using CalEEMod.
- Tank relocation is expected to occur in the first 90 days after the rule is adopted. It is conservatively assumed in the peak day, there will be 3 tank relocation work among PAR1469 affected facilities.
- APCD installation is expected to occur 1 year after the rule is adopted and therefore it has no overlap with tank relocation work. It is conservatively assumed in the peak day, there will be 12 APCD installation work among PAR1469 affected facilities.

GHG Emissions Summary

PAR 1469 Requirement	CO2, MT/yr	CH4, MT/yr	N2O, MT/yr	CO2e, MT/yr
1 tank relocation	0.76	1.10E-04	-	0.76
6 tank relocation	4.53	0.00	-	4.55
12 APCD Installations	16.47	2.52E-03	-	16.54
145 APCD Installations	199.04	0.03	-	199.80
Total Emissions During Construction	203.57	0.03	-	204.35

6.81 amortized over 30 years

Gasoline Fuel Usage Estimations

Category	EPANHTSA Fuel Consumption				gallon fuel consumed per year due to PAR 1469
	gal/1,000 ton-mile	ton	1 ton-m/g	mpg	
LDA/LDT1/LDT2				20.00	1,051
MDT				10.00	197

Reference:

National Highway Traffic Safety Administration (NHTSA) vocational vehicle standards, https://www.dieselnet.com/standards/us/fe_hd.php

EPA Fuel Economy report: <https://www.epa.gov/fueleconomy/trends-report>

California Annual Retail Fuel Outlet Report Results (CEC-A15) Spreadsheets http://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html

mmgal
Baseline - Year
2016 Estimated
Basin Fuel
Demand (mmgal/yr)
Total % Above
Baseline
1,248 0.0012 6,997 0.00002% gasoline

Diesel Fuel Usage Estimations

Equipment	gal/hr	hrs/day	# piece	gals
Aerial lift	0.96	4	145	2784
Forklifts	0.96	4	151	2899.2
Air Compressors	0.9	4	145	2610
Welders	0.331	4	151	999.62

ref: fuel usage scaled from SOx emissions in OFFROAD (CARB)

9292.82 0.0093 749 0.0012% diesel

Appendix C
CEQA Operational Impact Evaluations - Assumptions and Calculations
(2018/2/14 rev)

Emissions Summary

PAR 1469 Requirement	CO, lb/day	NOx, lb/day	PM10, lb/day	PM2.5, lb/day	VOC, lb/day	SOX, lb/day	CO2, MT/yr	CH4, MT/yr	N2O, MT/yr	CO2e, MT/yr
Increased source test vehicles (LDA)	0.39	0.03	0.07	0.72	0.01	0.00	1.30	-	-	1.30
Increased maintenance truck (MDT)	0.10	0.03	0.13	0.04	0.01	0.00	0.08	-	-	1.99
Total	0.48	0.06	0.20	0.75	0.02	0.00	1.38	-	-	3.29

All sites	
Max. # used/day	Max. # day used/yr
4	98
4	98

Note:

1. It is conservatively assumed in the peak day, there will be an additional 4 source test vehicles (LDA) and 4 maintenance truck (MDT) to all PAR 1469 affected facilities.
2. It is conservatively assumed in the peak year, there will be an additional 98 source test vehicles (LDA) and 98 maintenance truck (MDT) to all PAR 1469 affected facilities.
3. Each LDA and each MDV is assumed to travel round trip up to 40 miles.
4. The increased medium duty truck is for additional waste disposal truck, filter replacement, filter leak inspection and other maintenance work for the APCDs.

Medium-Duty Truck (MDT) - each

	CO	NOx	PM10	PM2.5	VOC	SOX	CO2	CH4	N2O	CO2e
g/mile (RUNEX, PMBW, PMTW, Fugitive)	0.26	0.08	0.37	0.10	0.02	0.00	505.00			505.00
g/vehicle (IDLEX)	0.33	0.05	0.01	0.01	0.02	0.00	139.57			139.57
lb/day, MT/day for GHG	0.02	0.01	0.03	0.01	0.00	0.00	0.02	-	-	0.02

VMT, mile/day
40.0

EF: from EMFAC2014, EPA AP-42

Light-Duty Automobiles (LDA) - each

	CO	NOx	PM10	PM2.5	VOC	SOX	CO2	CH4	N2O	CO2e
g/mile (RUNEX, PMBW, PMTW, Fugitive)	1.10	0.10	0.20	2.03	0.03	0.00	330.83			330.83
lb/day, MT/day for GHG	0.10	0.01	0.02	0.18	0.00	0.00	0.01	-	-	0.01

VMT, mile/day
40.0

EF: from EMFAC2014, EPA AP-42

ENERGY CALS

Category	EPA/NHTSA Fuel Consumption					gallon fuel consumed per year due to PAR 1469	Baseline - Year 2016 Estimated Basin Fuel Demand (mmgal/yr)	Total % Above Baseline
	gal/1,000 ton-mile	ton	1 ton-m/g	mpg				
Increased source test vehicles (LDA)				20.00		196		
Increased maintenance truck (MDT)				10.00		392		
Total						588	6,997	0.00001% gasoline

Reference:

EPA Fuel Economy report: <https://www.epa.gov/fueleconomy/trends-report>

National Highway Traffic Safety Administration (NHTSA) vocational vehicle standards, https://www.dieselnet.com/standards/us/fe_hd.php

California Annual Retail Fuel Outlet Report Results (CEC-A15) Spreadsheets http://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html

Operation- Energy and GHG

HEPA filter and blower

Blower (100 bhp)	Consumption (GW-h/yr)	Consumption in MWh/yr
	0.001788	1.788

Ref: R1420.2 EA

	CO2	CH4	N2O	CO2e
Intensity (lb/MWhr)	702.44	0.03	0.01	704.95
MT/yr for GHG	0.57	0.00	0.00	0.57
Total MT/yr for GHG	82.61	0.00	0.00	82.90

Max. # of blowers (HEPA filter and blower)	Max. Total Energy Consumption (MWh/yr)
145	259.26

Appendix C -
CEQA Construction Impact Evaluations - Assumptions and Calculations (Final EA)

Appendix C (Final EA)
CEQA Construction Impact Evaluations - Assumptions and Calculations

Criteria Pollutant Emissions Summary

PAR 1469 Requirement	VOC, lb/day	NOx, lb/day	CO, lb/day	SOX, lb/day	PM10, lb/day	PM2.5, lb/day
1 tank relocation (Summer)	0.37	1.80	2.10	0.004	0.25	0.15
1 tank relocation (Winter)	0.38	1.81	2.06	0.004	0.25	0.03
Peak Day - 3 tank relocation on the same day	1.13	5.43	6.30	0.01	0.75	0.45
12 APCD Installations (Summer)	7.11	41.94	46.60	0.08	4.30	3.13
12 APCD Installations (Winter)	7.17	42.02	46.06	0.08	4.30	3.13
Peak Day - 12 APCD Installations on the same day	7.17	42.02	46.60	0.08	4.30	3.13
Daily Peak Construction Emissions	7.17	42.02	46.60	0.08	4.30	3.13
SIGNIFICANCE THRESHOLD FOR CONSTRUCTION	75.00	100.00	550.00	150.00	150.00	55.00

Note:

- The emissions are estimated using CalEEMod.
- Tank relocation is expected to occur in the first 90 days after the rule is adopted. It is conservatively assumed in the peak day, there will be 3 tank relocation work among PAR1469 affected facilities.
- APCD installation is expected to occur 1 year after the rule is adopted and therefore it has no overlap with tank relocation work. It is conservatively assumed in the peak day, there will be 12 APCD installation work among PAR1469 affected facilities.

GHG Emissions Summary

PAR 1469 Requirement	CO2, MT/yr	CH4, MT/yr	N2O, MT/yr	CO2e, MT/yr
1 tank relocation	0.76	1.10E-04	-	0.76
6 tank relocation	4.53	0.00	-	4.55
12 APCD Installations	16.47	2.52E-03	-	16.54
132 APCD Installations	181.19	0.03	-	181.89
Total Emissions During Construction	185.72	0.03	-	186.43

6.21 amortized over 30 years

Gasoline Fuel Usage Estimations

Category	EPA/NHTSA Fuel Consumption				gallon fuel consumed per year due to PAR 1469
	gal/1,000 ton-mile	ton	1 ton-m/g	mpg	
LDA/LDT1/LDT2				20.00	1,014
MDT				10.00	190

Reference:

National Highway Traffic Safety Administration (NHTSA) vocational vehicle standards, https://www.dieselnet.com/standards/us/fe_hd.php

EPA Fuel Economy report: <https://www.epa.gov/fueleconomy/trends-report>

California Annual Retail Fuel Outlet Report Results (CEC-A15) Spreadsheets http://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html

mmgal
Baseline - Year 2016 Estimated Basin Fuel Demand (mmgal/yr) Total % Above Baseline
1,205 0.0012 6,997 0.00002% gasoline

Diesel Fuel Usage Estimations

Equipment	gal/hr	hrs/day	# piece	gals
Aerial lift	0.96	4	145	2784
Forklifts	0.96	4	151	2899.2
Air Compressors	0.9	4	145	2610
Welders	0.331	4	151	999.62

ref: fuel usage scaled from SOx emissions in OFFROAD (CARB)

9292.82 0.0093 749 0.0012% diesel

Appendix C -
CEQA Construction Impact Evaluations - Assumptions and Calculations (Final EA)

Appendix C (Final EA)
CEQA Operational Impact Evaluations - Assumptions and Calculations

Emissions Summary

PAR 1469 Requirement	CO, lb/day	NOx, lb/day	PM10, lb/day	PM2.5, lb/day	VOC, lb/day	SOX, lb/day	CO2, MT/yr	CH4, MT/yr	N2O, MT/yr	CO2e, MT/yr
Increased source test vehicles (LDA)	0.39	0.03	0.07	0.02	0.01	0.00	1.30	-	-	1.30
Increased maintenance truck (MDT)	0.10	0.03	0.13	0.04	0.01	0.00	0.08	-	-	1.99
Total	0.48	0.06	0.20	0.06	0.02	0.00	1.38	-	-	3.29

All sites	
Max. # used/day	Max. # day used/yr
4	98
4	98

Note:

1. It is conservatively assumed in the peak day, there will be an additional 4 source test vehicles (LDA) and 4 maintenance truck (MDT) to all PAR 1469 affected facilities.
2. It is conservatively assumed in the peak year, there will be an additional 98 source test vehicles (LDA) and 98 maintenance truck (MDT) to all PAR 1469 affected facilities.
3. Each LDA and each MDV is assumed to travel round trip up to 40 miles.
4. The increased medium duty truck is for additional waste disposal truck, filter replacement, filter leak inspection and other maintenance work for the APCDs.

Medium-Duty Truck (MDT) - each

	CO	NOx	PM10	PM2.5	VOC	SOX	CO2	CH4	N2O	CO2e
g/mile (RUNEX, PMBW, PMTW, Fugitive)	0.26	0.08	0.37	0.10	0.02	0.00	505.00			505.00
g/vehicle (IDLEX)	0.33	0.05	0.01	0.01	0.02	0.00	139.57			139.57
lb/day, MT/day for GHG	0.02	0.01	0.03	0.01	0.00	0.00	0.02	-	-	0.02

VMT, mile/day
40.0

EF: from EMFAC2014, EPA AP-42

Light-Duty Automobiles (LDA) - each

	CO	NOx	PM10	PM2.5	VOC	SOX	CO2	CH4	N2O	CO2e
g/mile (RUNEX, PMBW, PMTW, Fugitive)	1.10	0.10	0.20	0.06	0.03	0.00	330.83			330.83
lb/day, MT/day for GHG	0.10	0.01	0.02	0.01	0.00	0.00	0.01	-	-	0.01

VMT, mile/day
40.0

EF: from EMFAC2014, EPA AP-42

Appendix C -
CEQA Construction Impact Evaluations - Assumptions and Calculations (Final EA)

ENERGY CALS

Category	EPA/NHTSA Fuel Consumption					gallon fuel consumed per year due to PAR 1469	Baseline - Year 2016 Estimated Basin Fuel Demand (mmgal/yr)	Total % Above Baseline
	gal/1,000 ton-mile	ton	1 ton-m/g	mpg				
Increased source test vehicles (LDA)				20.00		196		
Increased maintenance truck (MDT)				10.00		392		
Total						588	6,997	0.00001% gasoline

Reference:

EPA Fuel Economy report: <https://www.epa.gov/fueleconomy/trends-report>

National Highway Traffic Safety Administration (NHTSA) vocational vehicle standards, https://www.dieselnet.com/standards/us/fe_hd.php

California Annual Retail Fuel Outlet Report Results (CEC-A15) Spreadsheets http://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html

Operation- Energy and GHG

HEPA filter and blower

Blower (100 bhp)	Consumption (GW-h/yr)	Consumption in MWh/yr
	0.001788	1.788

Ref: R1420.2 EA

	CO2	CH4	N2O	CO2e
Intensity (lb/MWhr)	702.44	0.03	0.01	704.95
MT/yr for GHG	0.57	0.00	0.00	0.57
Total MT/yr for GHG	75.20	0.00	0.00	75.47

Max. # of blowers (HEPA filter and blower)	Max. Total Energy Consumption (MWh/yr)
132	236.016

APPENDIX D

PAR 1469 List of Affected Facilities

Appendix D: PAR 1469 List of Affected Facilities

Facility Name	Facility ID	On Lists Per Government Code §65962.5 Per EnviroStor?	Address	City	Zip	Located Within Two Miles of Airport?	Nearest Sensitive Receptor	Approx. Distance to Nearest Sensitive Receptor (m)
K & L Anodizing Corp	236	No	1200 S Victory Blvd	Burbank	91502	No	Residence	≤25
Cal-Tron Plating Inc	1953	Yes	11919 Rivera Rd	Santa Fe Springs	90670	No	Hospital	>1000
Jan-Kens Enameling Co Inc	3887	No	715 E Cypress Ave	Monrovia	91016	No	Residence	101-200
El Monte Plating Co, Darrel Jensen	4119	Yes	11409 Stewart St	El Monte	91731	No	Residence	≤25
Alco Cad-Nickel Plating Corp	4346	No	1400 Long Beach Ave	Los Angeles	90021	No	Residence	51-75
Accu Chrome Plating Co Inc	5137	No	115 W 154Th St	Gardena	90248	No	Residence	501-1000
Chromal Plating Co	6616	No	1748 N Workman St	Los Angeles	90031	No	Residence	≤25
Angelus Plating Wks	6842	Yes	1713 W 134Th St	Gardena	90249	No	Residence	201-300
Anodyne Inc	7011	No	2226-223 S Susan St	Santa Ana	92704	No	School	>1000
Electrolizing Inc	7978	No	1947 Hooper Ave	Los Angeles	90011	No	Residence	26-50
Verne'S Chrome Plating Inc	8172	No	1559 W El Segundo Blvd	Gardena	90249	No	Residence	≤25
Omni Metal Finishing Inc	8408	Yes	11665 Coley River Cir	Fountain Valley	92708	No	Residence	101-200
Reuland Electric Co, H. Britton Lees	8820	No	17969 Railroad St	City Of Industry	91748	No	N/A	>1000
Cal Electroplating Inc	9120	Yes	3517 E Olympic Blvd	Los Angeles	90023	No	Residence	≤25
South West Plating Co	9489	No	1344 W Slauson Ave	Los Angeles	90044	No	Residence	26-50
Electronic Chrome Grinding Co Inc	10005	No	9128-32 Dice Rd	Santa Fe Springs	90670	No	Residence	76-100
Bronzeway Plating Corp	11174	No	3432 E 15Th St	Los Angeles	90023	No	Residence	201-300
Hixson Metal Finishing	11818	Yes	829 Production Pl	Newport Beach	92663	No	Residence	26-50
All American Manufacturing Co	11997	No	2201 E 51St St	Los Angeles	90058	No	School	501-1000
Size Control Plating Co Inc	12213	No	13349 E Temple Ave	La Puente	91746	No	School	101-200
Lmdd Enter. Inc., Dixon Hard Chrome, Db	12748	No	11645 Pendleton St	Sun Valley	91352	Yes	Daycare Center	51-75
Hartwell Corp	12841	Yes	9810 6Th St	Rancho Cucamonga	91730	Yes	Residence	201-300
Barry Ave Plating Co Inc	13618	No	2210 Barry Ave	Los Angeles	90064	No	Residence	51-75
Chromplate Company	13844	No	1127 W Hillcrest Blvd	Inglewood	90301	Yes	School	201-300
Van Nuys Plating Inc	13945	No	6109 Vesper Ave	Van Nuys	91411	No	Daycare Center	< 25
S & K Plating Inc	15021	No	2727 N Compton Ave	Compton	90222	No	Residence	26-50
Anaplex Corp	16951	No	15547 Garfield Ave	Paramount	90723	No	Residence	301-500
Steve'S Plating Corporation	17098	No	3101-111 N San Fernando Blvd	Burbank	91504	Yes	Residence	N/A
Kryler Corp	17168	No	1217 E Ash Ave	Fullerton	92831	No	Residence	301-500
A-H Plating Inc	17812	Yes	1837 N Victory Blvd	Burbank	91504	Yes	Residence	201-300
Techplate Engineering Co	18118	No	1571 S Sunkist St	Anaheim	92806	No	Residence	301-500
Orange County Plating Co Inc	18414	Yes	940-70 N Parker St	Orange	92867	No	Residence	301-500
Christensen Plating Wks Inc	18460	No	2455 E 52Nd St	Vernon	90058	No	School	501-1000
Stutzman Plating Co	18845	No	5045 Exposition Blvd	Los Angeles	90016	No	Residence	110-150
Bowman Plating Co Inc	18989	No	2631 E 126Th St	Compton	90222	No	Residence	51-75
Pemaco Metal Processing Corp	19234	No	2125 Lemon St	Alhambra	91803	No	Residence	101-200
Metal Surfaces Inc	20280	No	6048-60 Shull St	Bell Gardens	90201	No	Residence	51-75
Aircraft X-Ray Labs Inc	21321	No	5216 Pacific Blvd	Huntington Park	90255	No	Residence	26-50
Coast Plating Inc I	21593	Yes	128 W 154Th St	Gardena	90248	No	Residence	501-1000
Domar Precision Inc	23594	No	5250 E Southern Ave	South Gate	90280	No	Residence	≤25
Pennoyer-Dodge Co	24129	No	6634 San Fernando Rd	Glendale	91201	No	Residence	≤25
Serv Plating Co Inc	24240	No	1855 E 62Nd St	Los Angeles	90001	No	Residence	26-50

Appendix D -
PAR 1469 List of Affected Facilities

Aaa Plating & Inspection Inc	25087	Yes	424 Dixon St	Compton	90222	No	Residence	≤25
Universal Metal Plating & Polishing	39156	No	1526 W 1St St	Azusa	91702	No	School	>1000
Hawker Pacific Aerospace	40829	No	11240 Sherman Way	Sun Valley	91352	Yes	School	101-200
Lubeco Inc	41229	Yes	6859 Downey Ave	Long Beach	90805	No	Residence	76-100
Brite Plating Co Inc	42645	No	1313 Mirasol St	Los Angeles	90023	No	Residence	101-200
Neutron Plating Inc	42712	Yes	2993 E Blue Star St	Anaheim	92806	No	Residence	501-1000
Brothers Plating	44584	No	334 S Motor Ave	Azusa	91702	No	School	>1000
E.M.E. Inc/Electro Machine & Engineering	45938	No	431 E Oaks St	Compton	90222	No	Residence	51-75
Fine Quality Metal Finishing	47329	No	1640 Daisy Ave.	Long Beach	90813	No	Residence	90
All Metals Processing Of Orange Co Inc	47835	No	8401 Standustrial Ave	Stanton	90680	No	Residence	≤25
Yolandas Plating	52142	No	3419 Union Pacific Ave	Los Angeles	90023	No	Residence	101-200
Quaker City Plating & Silversmith Ltd	52525	No	11729 E Washington Blvd	Whittier	90606	No	Convalescent Home	76-100
Carter Plating Inc	53447	No	1842 N Keystone St	Burbank	91504	Yes	Residence	201-300
Artistic Silver Plating	55661	No	2344 Orange Ave	Signal Hill	90806	Yes	Residence	26-50
Maxima Enterprises, Inc.	62731	No	23920 S Vermont	Harbor City	90710	No	Residence	76-100
Crown Chrome Plating Inc	70220	No	14660 Arminta St	Van Nuys	91402	No	Residence	201-300
Aerodynamics Plating Co Inc	74131	No	13620 S St Andrews Pl	Gardena	90815	No	Residence	101-200
Ponam Ltd, Inc	78083	No	6618 San Fernando Rd	Glendale	91201	No	Residence	≤25
Palm Springs Plating	80799	No	345 Del Sol Rd	Palm Springs	92262	Yes	Residence	101-200
Dnr Industries, Inc.	82730	No	1558- S Anaheim Blvd	Anaheim	92805	No	Residence	301-500
Roto-Die Company Inc	92753	No	712 N Valley St	Anaheim	92801	Yes	Residence	101-200
Decore Plating	98554	Yes	434 W 164Th St	Carson	90248	No	Residence	≤25
Moog, Inc (Hard. Ano)	102334	No	20263 S Western Ave	Torrance	90501	No	N/A	>1000
Hightower Plating & Manufacturing Co	103703	No	2090 N Glassell Blvd	Orange	92865	No	Residence	501-1000
Valley-Todeco, Inc	106838	No	12975 Bradley Ave	Sylmar	91342	No	Residence	501-1000
Markland Manufacturing Inc	107149	No	1111 E Mcfadden Ave	Santa Ana	92705	No	Residence	51-75
Cpbg, Inc	107644	No	3911 E Miraloma Ave	Anaheim	92806	No	Residence	201-300
Mjb Chrome Plating & Polishing	108315	No	236 S Riverside Ave	Rialto	92376	No	Residence	101-200
Valley Plating Works Inc	109562	Yes	5900 E Sheila St	Commerce	90040	No	Residence	201-300
Chrometech Inc	111005	No	2309 W 2Nd St & 2310 Cape Code	Santa Ana	92703	No	Residence	201-300
Coast Plating Inc 2	112968	No	417 W 164 Th St	Carson	90248	No	Residence	26-50
Alloy Processing	117435	No	1900 W Walnut	Compton	90220	No	Residence	400
Product Engineering Corporation	117804	No	2645 Maricopa St	Torrance	90503	No	Residence	101-200
Bowman Field, Inc, Chrome Nickel Platin	118602	No	2820 E Martin L King Jr Blvd	Lynwood	90262	No	Residence	26-50
Dynamic Plating	120704	Yes	952 W 9Th St	Upland	91786	No	Residence	201-300
Barken'S Hardchrome, Inc	121215	Yes	239 E Greenleaf Blvd	Compton	90220	No	Residence	≤25
Metal Finishing Marketers Inc	122365	No	1401 Mirasol St	Los Angeles	90023	No	Residence	101-200
Supreme Plating & Coating, L De La Rosa	122432	No	330 E Beach Ave	Inglewood	90302	No	Residence	≤25
Superior Plating And Bumpers	124325	No	1044 E 2 Nd St	Pomona	91763	No	Residence	≤25
Santec, Inc	125806	No	3501 Challenger St	Torrance	90503	No	Residence	N/A
Allen Industrial & Machine	129216		P. O. Box 776	Banning	92220		Residence	101-200
Multichrome/Microplate Co., Inc	129249	No	1013 W Hillcrest Blvd	Inglewood	90301	Yes	Daycare Center	301-500
McDonnell Douglas/Boeing Company	131232	No	15400 Graham Ave	Huntington Beach	92647	No	Residence	501-1000
Whiting Enterprises, Inc	131266	No	10140 Romandel Ave	Santa Fe Springs	90670	No	N/A	>1000
Rtr Industries Llc/Grant Piston Ring Co	132074	No	1360 Jefferson St	Anaheim	92807	No	Residence	301-500
Lm Chrome Corp	132333	No	654 E Young St	Santa Ana	92704	Yes	Residence	>1000
Hydroform Usa	133930	No	2848 E. 208Th St.	Carson	90810	No		301-500

Appendix D -
PAR 1469 List of Affected Facilities

Morrell'S Electro Plating, Inc	136913	No	432 E Euclid Ave	Compton	90222	No	Residence	>100
La Habra Plating Company	140017	No	900 S Cypress St	La Habra	90631	No	Residence	51-75
Ducommun Aerostructures Inc	140811	No	801 Royal Oak Dr	Monrovia	91016	No	Residence	101-200
Electrode Tech Inc, Reid Metal Finishing	143630	Yes	3110 W Harvard St	Santa Ana	92704	No	School	101-200
C&M Gold Plating, Adalberto Coldivar C	144272	No	948 W Industrial St	Azusa	91702	No	N/A	>1000
Andres Technical Plating	144438	No	1055 Ortega Way	Placentia	92870	No	School	101-200
Beo-Mag Plating Inc	146448	No	3315 W Harvard St	Santa Ana	92704	No	School	301-500
Aviation Repair Solutions Inc	147364	No	1480 Canal Ave	Long Beach	90813	No	Residence	501-1000
Fullerton Custom Works Inc	148373	No	1163 E Elm St	Fullerton	92831	No	Residence	301-500
Magma Finishing Corp.	148451	No	2294 N Batavia St D	Orange	92865	No		
Rebilt Metalizing Co	150363	No	2229 E 38Th St	Vernon	90058	No	Hospital	501-1000
South Bay Chrome	152888	No	2041 S Grand Ave	Santa Ana	92705	No	School	>1000
Tool & Jig Plating Company, A. Williams	153762	No	7635 S. Baldwin Place	Whittier	90602	No	Residence	N/A
A & Z Grinding, Inc	154758	No	1543 Nadeau St	Los Angeles	90001	No	Residence	≤25
Gardena Specialized Processing Inc	158699	No	16520 S Figueroa St	Gardena	90248	No	Residence	26-50
Ceo-To-Go/Ride Wright Wheels	166355	No	3080 E. La Jolla St	Anaheim	92806	No		301-500
Pacific Chrome Services	173247	No	603 E. Alton Ave.	Santa Ana	92705	No		501-1000
Triumph-Embee	173913	No	2136-68 S Hathaway St	Santa Ana	92705	No	Residence	101-200
Shimadzu Precision Instruments, Inc.	177256	No	3645 N. Lakewood Blvd.	Long Beach	90808	Yes		
Platinum Surface Coating	177440	No	1179 N. Fountain Way	Anaheim	92806	No		201-300
Allfast Fastening Sys Inc	178908	No	15200 Don Julian Rd	City Of Industry	91745	No	School	501-1000
Nasmyth Tmf, Inc.	179008	No	3401 Pacific Ave	Burbank	91505	Yes	School	26-50
Chromadora	180575	Yes	2515 S. Birch St.	Santa Ana	92707	No		301-500
V&M Aerospace Llc	180918	Yes	14024 S Avalon Blvd	Los Angeles	90061	No	Residence	201-300
Sunvair, Inc.	181234	No	29145 The Old Road	Valencia	91355	No		
Triumph Processing Inc	800267	No	2588-2605 Industry Way	Lynwood	90262	No	Daycare Center	101-200

Total = 115 facilities

NAICS codes for PAR 1469 affected facilities

Industry	NAICS Code	# of Facilities
Fabricated Metal Manufacturing	332	93
Metal Crown, Closure, and Other Metal Stamping (except Automotive)	332119	1
Saw Blade and Handtool Manufacturing	332216	1
Machine Shops	332710	3
Bolt, Nut, Screw, Rivet, and Washer Manufacturing	332722	2
Metal Coating, Engraving (except Jewelry and Silverware), and Allied Services to Manufacturers	332812	2
Electroplating, Plating, Polishing, Anodizing, and Coloring	332813	82
Plumbing Fixture Fitting and Trim Manufacturing	332913	2
Other Manufacutring	333-337	12
Other Industrial Machinery Manufacturing	333249	1
Special Die and Tool, Die Set, Jig, and Fixture Manufacturing	333514	1
Cutting Tool and Machine Tool Accessory Manufacturing	333515	1
Other Measuring and Controlling Device Manufacturing	334519	2
Motor and Generator Manufacturing	335312	1
Motor Vehicle Gasoline Engine and Engine Parts Manufacturing	336310	1
Other Motor Vehicle Parts Manufacturing	336390	1
Aircraft Manufacturing	336411	1
Other Aircraft Parts and Auxiliary Equipment Manufacturing	336413	2
Showcase, Partition, Shelving, and Locker Manufacturing	337215	1
Wholesale and Retail Trade	42, 44	2
Transportation Equipment and Supplies (except Motor Vehicle) Merchant Wholesalers	423860	1
Motorcycle, ATV, and All Other Motor Vehicle Dealers	441228	1
Professional, Scientific, and Technical and Other Services	54, 56	5
All Other Professional, Scientific, and Technical Services	541990	1
All Other Support Services	561990	4
Repair and Maintenance	811	3
Automotive Body, Paint, and Interior Repair and Maintenance	811121	1
Other Electronic and Precision Equipment Repair and Maintenance	811219	1
Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	811310	1
Total		115

APPENDIX E

PAR 1469 Comment Letters Received on the Draft EA and Responses to Comments

Comment Letter #1

From: [Sam Wang](#)
To: [Neil Fujiwara](#); [Eugene Kang](#); [Robert Gottschalk](#); [Barbara Radlein](#); [Daphne Hsu](#); [Shah Dabirian](#)
Cc: [Susan Nakamura](#); [Jillian Wong](#); [Michael Krause](#)
Subject: FW: Comments from CHEMEON Surface Technology for CEQA Public Review re: PAR 1469 Hexavalent Chromium Emissions
Date: Friday, March 16, 2018 12:11:39 PM
Attachments: [12239-CHEM-18-Seal-Ad-Resize-for-Client-ho1.pdf](#)
[CHEMEON TCP-HF NP as an Anodic Seal Study-email.pdf](#)
[Naval Power and Force Protection Article CHEMEON SCAOMD Hex Chrome Emissions July 17.pdf](#)

FYI, CHEMEON's written comments for PAR1469

From: Ted Ventresca [<mailto:tventresca@chemeon.com>]
Sent: Thursday, March 15, 2018 6:24 PM
To:
Subject: Comments from CHEMEON Surface Technology for CEQA Public Review re: PAR 1469 Hexavalent Chromium Emissions

Good Afternoon Mr. Wang,

As per the February 15th notice provided by Ms. Radlein, the following comments are submitted to the CEQA within the 32 public review period by CHEMEON Surface Technology:

Viable MIL-SPEC alternatives to replace hexavalent chromium (a.k.a. sodium dichromate/dilute chrome) exist, such as CHEMEON TCP-HF (Hexavalent Free) and TCP-NP (No Prep) that wholly remove the substances being regulated in PAR 1469 (dichromate seals in particular). There is ample 3rd part evidence that these chemistries can be used in lieu of hexavalent chromium, thus reducing the health risks as well as the financial burden of increased regulation and the potential of associated penalties for lack of compliance to PAR 1469.

CHEMEON has just released the attached report (CHEMEON TCP-HF and CHEMEON TCP-NP as an Anodic Seal.pdf) which provides in-depth detail and third party validation surrounding CHEMEON TCP-HF (Hexavalent Free) and TCP-NP (No-Prep) as an Anodic Seal.

The report validates and reconfirms that CHEMEON TCP-HF and NP are a safe, non carcinogenic and cost/energy saving anodic seal solutions while eliminating carcinogenic Cr(VI) emissions, potential fines and plant/shop closures.

These findings were presented at the Florida Finishing Association Conference in early February and the presentation received quite positive response/interest.

We anticipate that these findings, coupled with the technical expertise provided by CHEMEON will:

1. Aid a process shop in obtaining a variance from a Prime Contractor or OEM to allow CHEMEON TCP-HF or CHEMEON TCP-NP as a direct replacement for specified or currently used sodium dichromate seal chemistry.

and/or

2. Provide the Prime Contractor or OEM specification custodians and Quality Control stakeholders the data and validation necessary to change their-existing specifications to allow CHEMEON TCP-HF or CHEMON TCP-NP on the part being processed, as an anodic seal.
3. Allow for CEQA/SCAQMD recognition and possible recommendation of CHEMEON as a safe and proven alternative to the existing practice and use of hexavalent chrome (Cr(VI), (sodium dichromate /dilute chrome.)

Key aspects of the report are as follows:

- Third Party validation that CHEMEON TCP-HF (Hexavalent Free) and NP (No Prep) meet and exceed MIL SPEC performance as a room temperature anodic seal
- TCP-HF and TCP-NP applied as anodic seal demonstrated corrosion performance that greatly exceeds the specification requirements.
- After sealing with TCP-HF and TCP-NP, the anodize coating passed paint adhesion for both Type II and Type IIB on 2024 and 7075 alloys.
- Corrosion NSS (Neutral Salt Spray) testing revealed that both forms of TCP prevented corrosion on Type II anodize extremely well: no pits were seen after 2,000 hours of testing.
- The TCP seals on thinner Type IIB anodize show some pits visible after 1,648 hours of testing. However, this corrosion did not advance into salt spray failure during the 2,000 hours of neutral salt spray testing.
- Even with thin anodized coatings, TCP seals provide corrosion protection which far surpasses the 336 hour requirement.

We have also provided one sheet overview of the attributes of CHEMEON TCP-HF as an Anodic Seal. In addition, the recent Naval Power and Force Projection Magazine Article is attached (pdf) that details the “top priority” status California and SCAQMD has given to the removal/reduction of hexavalent chromium emissions and the proven safe solution that CHEMEON provides.

If you would like to discuss this report and its finding further, or learn how CHEMEON can aid prime contractors and process shops in their efforts to replace hexavalent chrome, please feel free to contact me. I plan to attend the Friday March 16th meeting in Diamond Bar and look forward to meeting at that time.

Respectfully,

Ted Ventresca

President & Chief Operating Officer
Direct: 775.301.5733 | tvventresca@chemeon.com

Response to Comment Letter #1 - CHEMEON

Thank you for your letter. This email does not appear to raise any CEQA issues relative to the analysis in Draft EA or the PAR 1469 rule language. Therefore, no further response is required.

Comment Letter #2



March 20, 2018

NCL-2018-011

Sam Wang
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Subject: Proposed Amended Rule 1469 – Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing Operations

Dear Mr. Wang:

The County of Orange has reviewed the Draft Environmental Assessment to the Proposed Amended Rule 1469 and has no comments at this time. We would like to be advised of any further developments on the project. Please continue to keep us on the distribution list for future notifications related to the project.

If you have any questions, please contact Ashley Brodtkin in OC Development Services at (714) 667-8854.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Richard Vuong', is written over a circular stamp.

Richard Vuong, Manager, Planning Division
OC Public Works Service Area/OC Development Services
300 North Flower Street
Santa Ana, California 92702-4048
Richard.Vuong@ocpw.ocgov.com

300 N. Flower Street, Santa Ana, CA 92703
P.O. Box 4048, Santa Ana, CA 92702-4048

www.ocpublicworks.com
714.667.8800 | Info@OCPW.ocgov.com

Response to Comment Letter #2 – Orange County Public Works

Thank you for your email. Your comments do not appear to raise any CEQA issues relative to the analysis in Draft EA or the PAR 1469 rule language. Therefore, no further response is required.

Proposed Amended Rule 1469

Hexavalent Chromium Emissions from Chromium Electroplating and Chromic Acid Anodizing



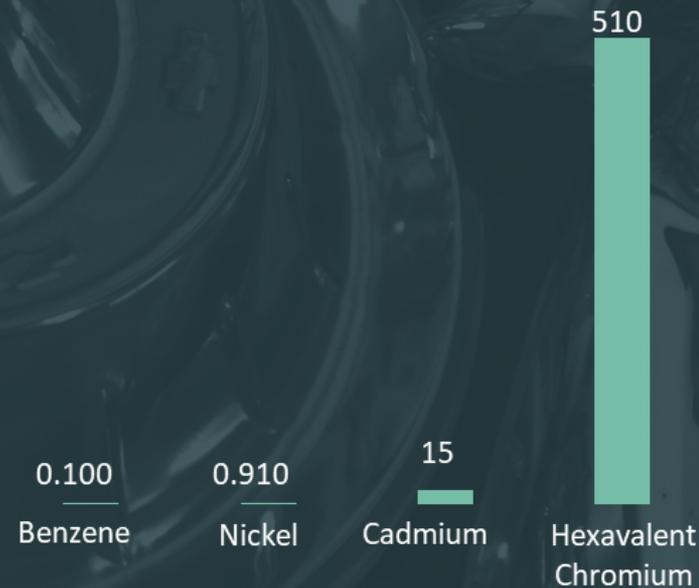
Governing Board Meeting

November 2, 2018

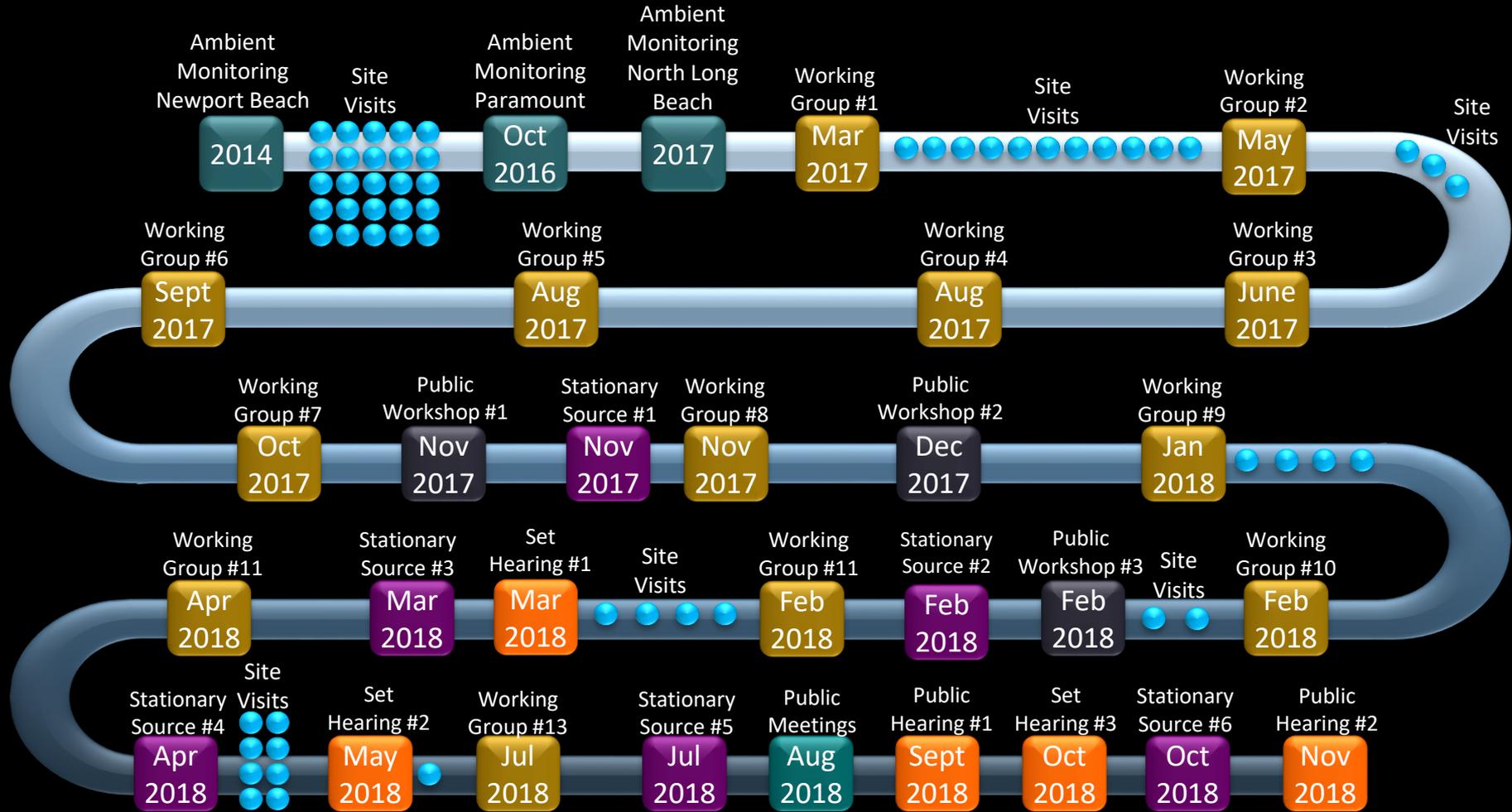
Background

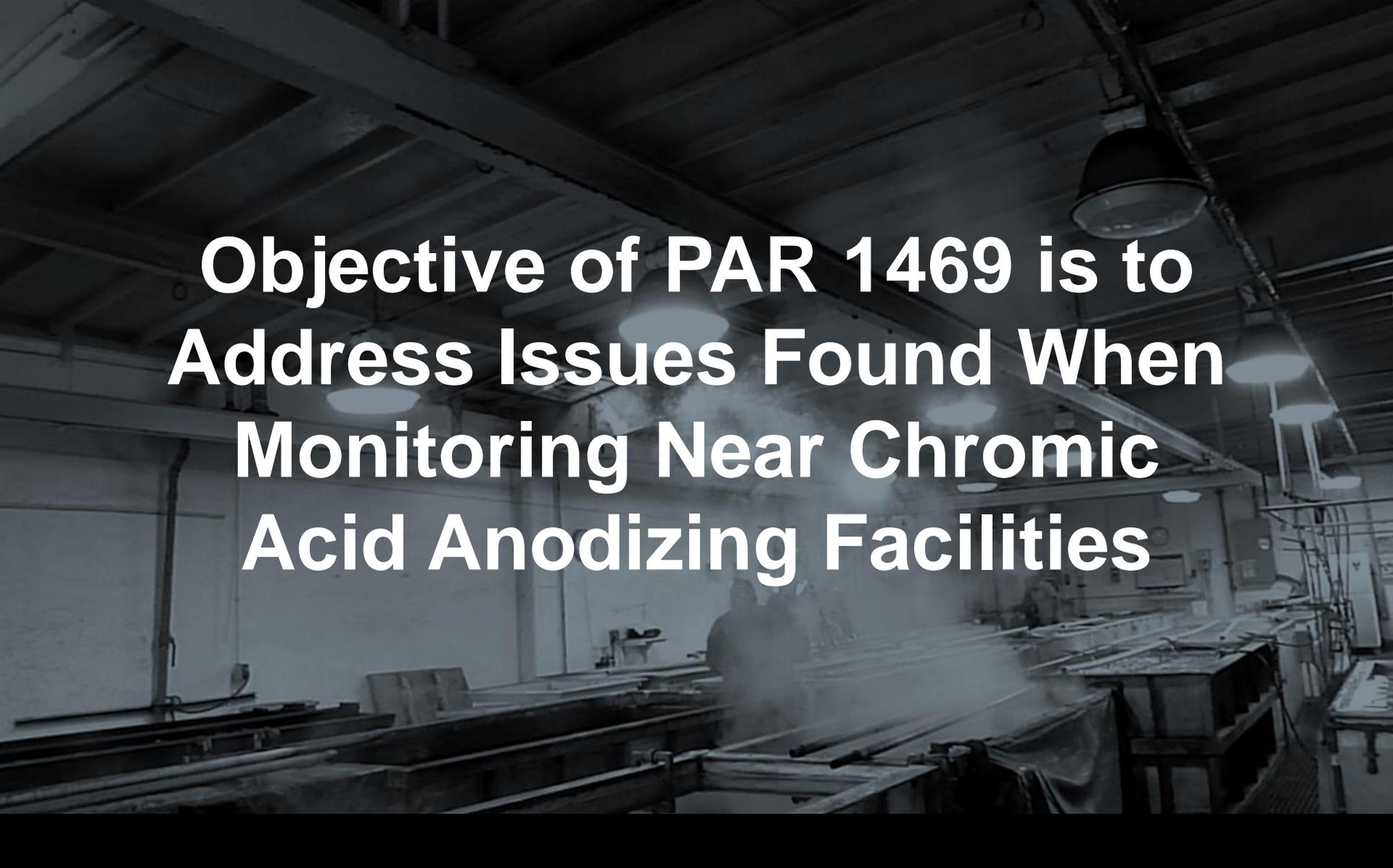
- Rule 1469 was adopted in 1988
- Rule 1469 regulates chromium electroplating and chromic acid anodizing tanks
- Rule 1469 implements
 - CARB Air Toxics Control Measure (ATCM)
 - U.S. EPA National Emission Standards for Hazardous Air Pollutants (NESHAP)
- Hexavalent chromium is a known human carcinogen
 - One of the most potent toxic air contaminants - orders of magnitude higher than other compounds

Inhalation Cancer Potency (mg/kg-day)⁻¹



Extensive Rulemaking Process



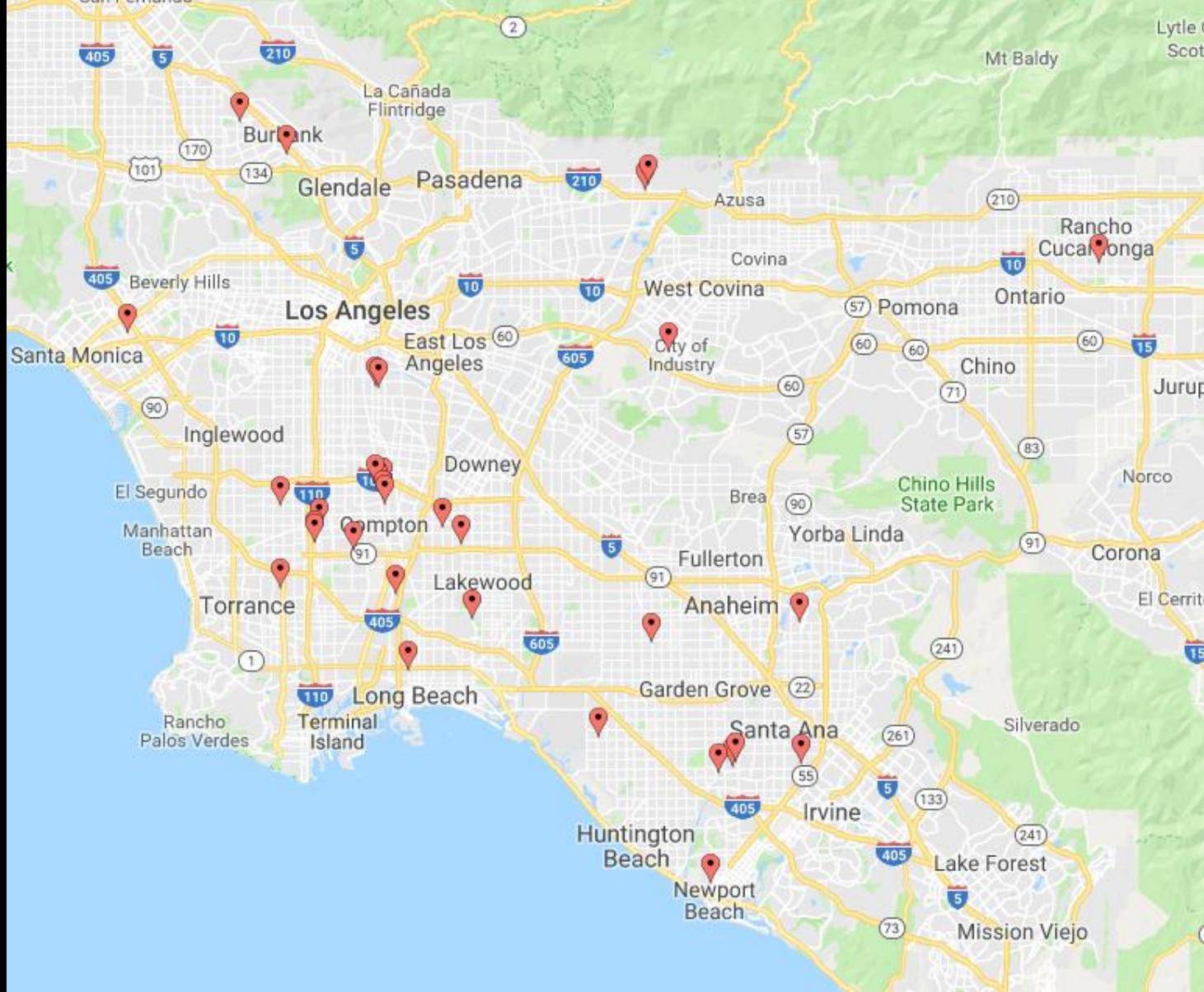


**Objective of PAR 1469 is to
Address Issues Found When
Monitoring Near Chronic
Acid Anodizing Facilities**

A photograph of an industrial factory interior. The ceiling is high with exposed metal beams and several large, industrial-style pendant lights. A thick plume of white smoke or steam rises from the work area in the center. In the background, several workers in dark clothing are visible near long workbenches or conveyor belts. The overall atmosphere is hazy due to the smoke.

Air Pollution Controls Needed

About 30
chromic acid
anodizing
facilities have
unregulated
Tier III Tanks
that need air
pollution
controls



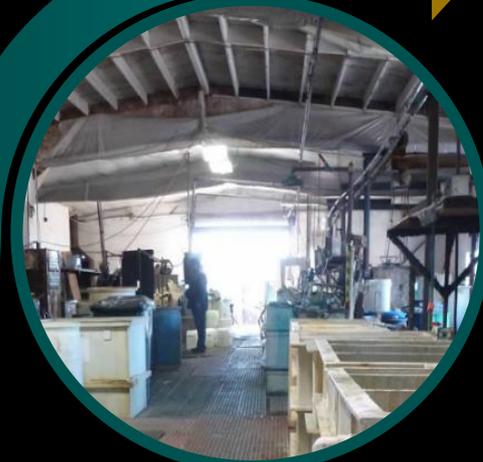
PAR 1469 is Designed to Address These Issues



High level of hexavalent chromium at ambient monitors near 3 chromic acid anodizing facilities



Identified unregulated tanks with hexavalent chromium emissions **300% above** proposed emission rate (0.2 mg/hour)



Building cross-drafts (openings on opposite sides of building) contributed to high ambient levels of hexavalent chromium

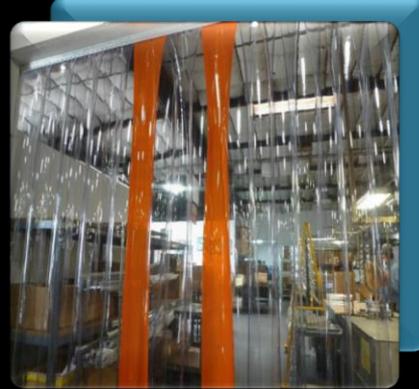
PAR
1469

PAR 1469 Core Provisions

Pollution Controls for Unregulated Hexavalent Chromium Tanks



New Building Enclosure Requirements



New Periodic Source Testing and Enhanced Parameter Monitoring



Enhanced Housekeeping and Best Management Practices



Emission Control Requirements for Tier I, II, and III Tanks

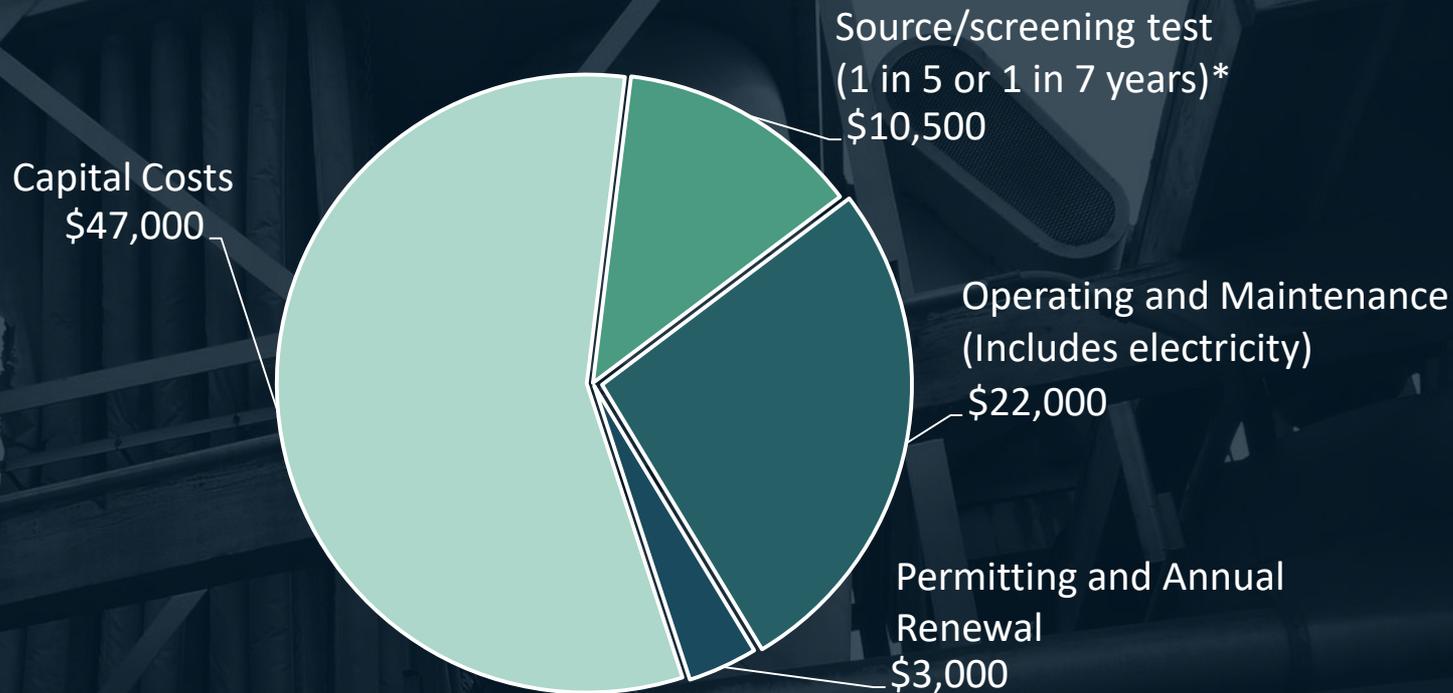


About half of the Tier III tanks* are expected to meet Tier II requirements by:

- Lowering tank temperature
- Reducing hexavalent chromium concentration in the bath
- Other stripping techniques such as chemical stripping
- Emissions testing demonstrating below Tier III threshold

*Estimate 46 out of 103 tanks identified in the Socioeconomic Impact Assessment can meet Tier II tank provisions

Annualized Costs for Air Pollution Controls for Chromic Acid Anodizing Facilities



Total Annualized Cost: \$82,500
Average Annual Revenue is \$14 million**

* Assumes cost in 1 year

** Excludes outlier facility with annual revenue of \$167 million

Stationary Source Committee

April 2018

- 13 facilities* commented - Overall concern was compliance costs and job impacts
- Staff reached out to each facility to better understand specific issues
- Staff met or had a phone call with 11 of the 13 facilities to discuss their concerns**
- Summary of Specific Issues
 - Source testing frequency
 - Building enclosure provisions
 - Compressed air cleaning requirement
 - Clarifications

* 28 people, some facilities had multiple commenters

** 2 facilities either declined or could not meet with staff



PAR 1469 Revisions Since July



Reduced source testing frequency from 3 years to 5 or 7 years*



Reduced distance to a roof vent and removed powered roof vent provision



Provisions for small, low-use tanks – Meets Tier III standard with pollution controls



Modified definition of stack for building enclosures



Maintained weekly housekeeping provisions, instead of daily



Increased allowable openings for building enclosure from 3 to 3.5%



Allow outer tank wall to work as a barrier for compressed air drying



Allow use of large equipment or structure to eliminate cross-draft

* Based on annual amp-hours

Core Provisions Protected

Emission Standards for Unregulated Tanks

- Small tank, low-use provision – meets Tier III standard with controls

Building Enclosure

- Distance to roof vent
- Definition of stack
- 3.5% allowable openings
- Structures for cross-draft



Source Testing and Parameter Monitoring

- Source testing every 5 or 7 years, depending on annual amp-hours

Housekeeping and Best Management Practices

- Freeboard in permits
- Weekly housekeeping
- Barriers for air drying

Industry Comments at September 7th Public Hearing

- Three facilities commented that PAR 1469 would impact the future of their business and job impacts
- Rules staff visited all three facilities in April
 - July revisions to PAR 1469 specifically addressed their issues
- Cost to revenue for these three facilities is less than 1 percent

Facility	Annual Revenue ¹	SCAQMD Annual Cost ²	SCAQMD Cost to Revenue Ratio
1	\$24,000,000	\$3,200	0.01%
2	\$7,500,000	\$24,000	0.32%
3	\$11,500,000	\$97,000	0.83%

¹ Revenue data from Dun and Bradstreet

² High Cost Scenario in Socioeconomic Impact Assessment, based on available data from facility survey data

Community Concerns

Rule 1469

PAR 1469

Ambient Monitoring Requirements

None

Address in
PR 1480

Building Enclosure Requirements

None

Enclosure
Requirements

Phase Out of Hexavalent
Chromium

None

Incentives

Source Test Frequency

Initial
No Periodic

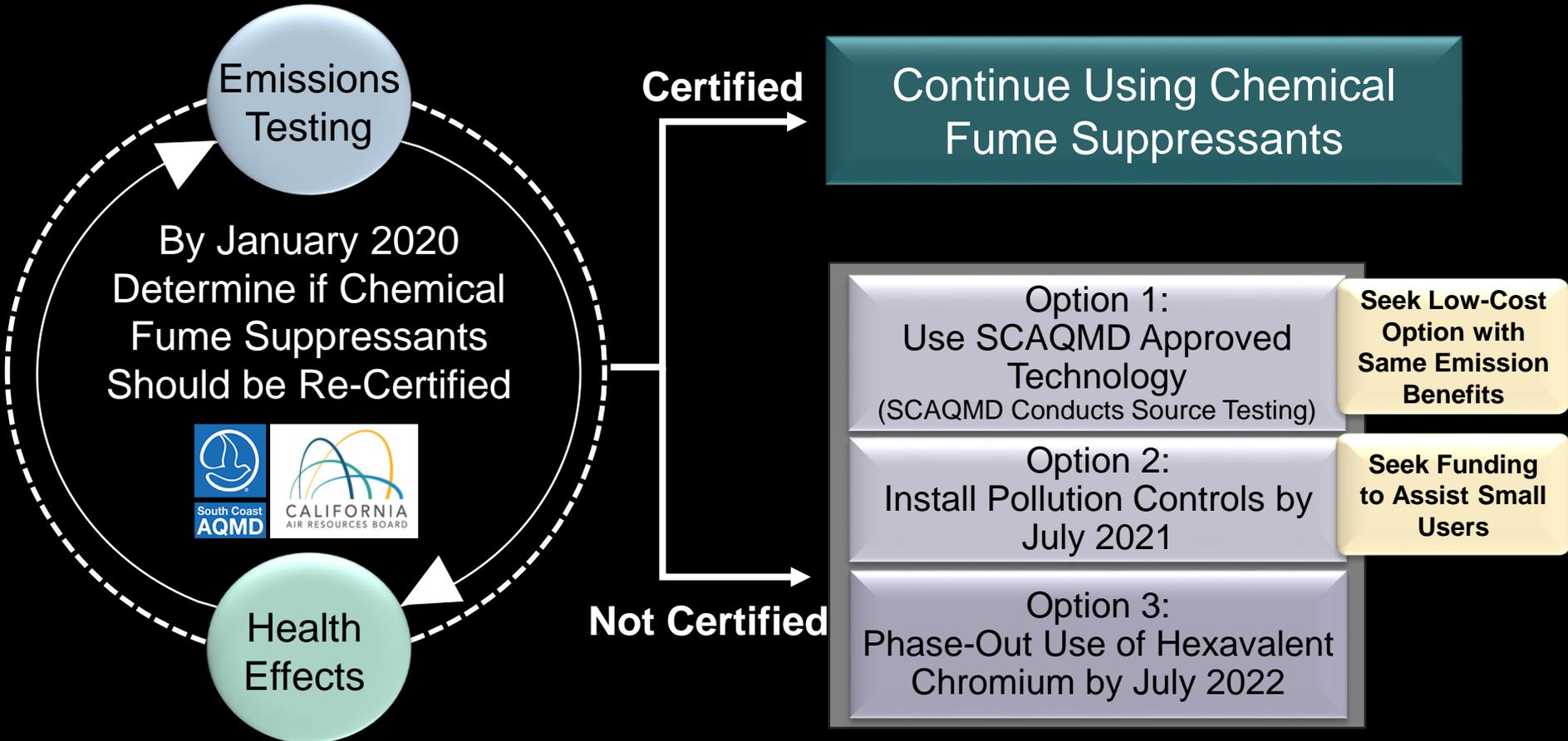
60 Months
84 Months

Use of PFAS Chemical Fume
Suppressants

Allowed

Schedule with
Possible Ban

Re-Evaluation of Fume Suppressants



A dark, blue-tinted photograph of a residential street. In the foreground, there is a black metal fence with vertical bars. Behind the fence, several houses are visible, including a prominent two-story house with a dark roof. The overall scene is dimly lit, suggesting dusk or dawn.

PAR 1469 provides greater health protection for communities by requiring...

PAR 1469 provides greater health protection for communities by requiring...



Pollution Controls for Unregulated Tanks

- Install pollution controls on high emitting Tier III tanks
- Incentives to phase-out hexavalent chromium



Source Testing and Parameter Monitoring

- Greater assurance pollution controls properly operating



Building Enclosure Provisions

- Provisions for openings 1,000 feet of sensitive receptor or school
- Minimizes exposure to fugitive emissions



Schedule for PFAS Fume Suppressants

- Schedule for re-certification and possible ban of PFAS fume suppressants

Recommendation

- Approve the Environmental Assessment
- Adopt Proposed Amended Rule 1469



BOARD MEETING DATE: November 2, 2018

AGENDA NO. 30

PROPOSAL: Determine that Updated 1-Hour Ozone Standard Attainment Demonstration Is Exempt from CEQA and Approve Updated 1-Hour Ozone Standard Attainment Demonstration

SYNOPSIS: Staff has updated the attainment demonstration of the federal 1979 1-hour ozone standard that was presented in the 2016 AQMP. The attainment demonstration has been updated to reflect a revised emission inventory, revised air quality modeling, and an updated attainment strategy. The emissions inventory in the updated attainment demonstration is now consistent with the final emissions inventory in the 2016 AQMP that was used for the 8-hour ozone and PM2.5 standards attainment demonstrations. The attainment strategy relies only on SCAQMD's proposed control measures in the 2016 AQMP, and does not include emission reductions from CARB's State Implementation Plan strategies including CARB's further deployment of advanced technology measures. No new control measures are being proposed, and all control measures in the 2016 AQMP remain in place for the 8-hour ozone standards. This action is to: 1) Determine that the updated 1-hour ozone standard attainment demonstration is exempt from the requirements of the California Environmental Quality Act; and 2) Approve the updated 1-hour ozone standard attainment demonstration.

COMMITTEE: Mobile Source, October 19, 2018, Reviewed

RECOMMENDED ACTIONS:

Adopt the attached Resolution:

1. Determining that the updated 1-hour ozone standard attainment demonstration for the South Coast Air Basin is exempt from the requirements of the California Environmental Quality Act; and
2. Approving the updated 1-hour ozone standard attainment demonstration for the South Coast Air Basin.

Wayne Natri
Executive Officer

Background

The South Coast Air Basin is currently in non-attainment of the federal 1979 1-hour ozone standard. The 2016 AQMP¹, adopted in March 2017, included control strategies that demonstrated attainment of the 1-hour ozone standard in 2022 as well as other federal ambient air quality standards exceeded in the South Coast Air Basin, including the 8-hour ozone and PM2.5 standards.

The 1-hour ozone standard attainment demonstration included in the 2016 AQMP relied on emission reductions from both SCAQMD stationary and mobile source control measures as well as mobile source measures from CARB's State Implementation Plan (SIP) developed primarily for meeting the 1997 and 2008 8-hour ozone standards in 2023 and 2031, respectively. SCAQMD control measures are based on either traditional regulatory or incentive-based strategies while CARB's SIP strategy includes both defined regulatory/incentive measures as well as measures identified as "Further Deployment of Cleaner Technologies" allowed under Clean Air Act (CAA) Section 182(e)(5). This update is needed because the 1-hour ozone standard attainment demonstration included in the final 2016 AQMP was based on an emissions inventory that was slightly different than the final inventory used in the 8-hour ozone and PM2.5 attainment demonstrations. This update also addresses the fact that based on this proposed update, there is not a need for 182(e)(5) or "black box" measures for the 1-hour ozone standard.

Proposal

Staff is requesting Board approval for the updated 1979 1-hour ozone standard attainment demonstration, which is a revision to the 1-hour ozone standard attainment demonstration included in the 2016 AQMP. The revised attainment demonstration includes the following updates:

1. The emissions inventory is updated to be consistent with the final emissions inventory used for the attainment demonstrations of the 8-hour ozone and PM2.5 standards included in the 2016 AQMP;
2. The updated attainment strategy relies exclusively on SCAQMD's mobile and stationary control measures based on the expectation that anticipated progress in emission reductions targeted toward the attainment of the 1997 8-hour ozone standard by 2023 will ensure the attainment of the 1-hour ozone standard by 2022. As such, emission reductions from CARB's SIP strategies including both defined measures and undefined measures (182(e)(5)) are not needed in this updated attainment demonstration; and

¹ SCAQMD, 2017, Final 2016 Air Quality Management Plan. Available at: <https://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/final-2016-aqmp>

3. The updated air quality modeling analysis successfully demonstrates and reaffirms attainment of the 1-hour ozone standard by 2022.

Highlights of the Updated Attainment Demonstration

Key issues addressed and major findings in this update include:

- 1) **Updated Baseline Emissions Inventory** – During the 2016 AQMP process, several versions of the emissions inventory were developed to reflect the most updated data available. The emissions inventory used in the attainment demonstration for the 1-hour ozone standard included in the final 2016 AQMP was slightly different than the final 2016 AQMP emissions inventory that was used for the 8-hour and PM2.5 standards attainment demonstrations. The 1-hour attainment demonstration, however, was not updated based on the final AQMP emissions inventory because of time constraints. The final 2016 AQMP emissions inventory contained updates in the locomotives emissions category, which lowered the NOx inventory by approximately 7.5 tons per day (TPD) and the VOC inventory by 0.4 TPD in 2022. The updated 1-hour ozone standard attainment demonstration relies on the final 2016 AQMP inventory consistent with other attainment demonstrations and emissions inventory included in 2016 AQMP Chapter 3 and Appendix III.
- 2) **Updated Attainment Strategy for 1-hour Ozone Standard** – The attainment strategy for the 1-hour ozone standard in the 2016 AQMP relied on SCAQMD’s proposed stationary and mobile source measures as well as CARB’s SIP strategy, which included both defined (regulatory or incentive) measures and undefined 182(e)(5) measures that are based on further deployment of cleaner mobile source technologies. The updated attainment demonstration of the 1-hour ozone standard relies exclusively on the anticipated implementation of the SCAQMD’s defined measures targeting the attainment of the 1997 8-hour ozone standard by 2023. For these measures, it was assumed that 86% of the 2023 emission reduction commitments will reasonably be achieved in 2022. The updated attainment strategy does not rely on emission reductions from CARB’s SIP strategy including the 182(e)(5) measures. Non-reliance on 182(e)(5) measures also eliminates the need for developing related contingency measures by 2019, three years prior to the 2022 attainment date.
- 3) **Updated Air Quality Modeling** – The updated air quality modeling analysis successfully demonstrates attainment of the 1-hour ozone standard in 2022. Based on the updated attainment strategy, the future design value for 1-hour ozone concentration in 2022 is projected to be 123 ppb, which is below the 125 ppb level required by the CAA. Several sensitivity runs were also conducted to provide weight of evidence for the updated 1-hour ozone standard attainment demonstration, as outlined in the Draft Updated 1-Hour Ozone Standard Attainment Demonstration document (Attachment B).

Public Process

A 30-day notice was published on October 3, 2018. In addition, the updated 1-hour ozone standard attainment demonstration was presented at a Public Workshop on September 20, 2018, and to the Mobile Source Committee on October 19, 2018.

California Environmental Quality Act

Pursuant to the California Environmental Quality Act (CEQA) and SCAQMD Rule 110, the SCAQMD, as lead agency for the proposed project, has reviewed the proposed project pursuant to: 1) CEQA Guidelines Section 15002(k) – General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA; and 2) CEQA Guidelines Section 15061 – Review for Exemption, procedures for determining if a project is exempt from CEQA. Because the update to the 1-hour ozone standard attainment demonstration is not proposing to add new control measures or delete any existing control measures from the 2016 AQMP, but merely presents updated analyses and other changes that do not have the potential to cause a direct or indirect adverse impact on the environment, SCAQMD staff has determined that it can be seen with certainty that there is no possibility that the proposed project may have a significant adverse effect on the environment. Thus, the project is considered to be exempt under the requirements from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) - Activities Covered by General Rule. Furthermore, the proposed attainment demonstration updates are considered categorically exempt because they are considered actions to protect or enhance the environment pursuant to CEQA Guidelines Section 15308 – Actions by Regulatory Agencies for Protection of the Environment. A Notice of Exemption has been prepared pursuant to CEQA Guidelines Section 15062 – Notice of Exemption. If the project is approved, the Notice of Exemption will be filed with the county clerks of Los Angeles, Orange, Riverside and San Bernardino counties.

Socioeconomic Analysis

No socioeconomic impact assessment is required because the proposed update is not a rule and does not add or delete control measures from the previously adopted 2016 AQMP, and therefore does not “significantly affect air quality or emissions limitations.” (Health & Safety Code Section 40440.8(a)). In addition, there will be no socioeconomic impact because the proposal does not change the control measures that will be implemented.

Resource Impacts

No additional resource impacts are anticipated due to this updated 1-hour ozone standard attainment demonstration.

Attachments

- A. Resolution
- B. Updated 1-hour Ozone Standard Attainment Demonstration
- C. Notice of Exemption

ATTACHMENT A

RESOLUTION 18-_____

A Resolution of the South Coast Air Quality Management District (SCAQMD) Governing Board determining that the updated 1-hour ozone standard attainment demonstration for the South Coast Air Basin is exempt from the requirements of the California Environmental Quality Act (CEQA).

A Resolution of the SCAQMD Governing Board adopting the updated 1-hour ozone standard attainment demonstration for the South Coast Air Basin.

WHEREAS, the SCAQMD Governing Board finds and determines that the updated 1-hour ozone standard attainment demonstration for the South Coast Air Basin is considered a “project” pursuant to CEQA per CEQA Guidelines Section 15002(k) – General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA; and

WHEREAS, the SCAQMD Governing Board finds and determines that after conducting a review of the proposed project in accordance with CEQA Guidelines Section 15002(k) - General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA, and CEQA Guidelines Section 15061 - Review for Exemption, procedures for determining if a project is exempt from CEQA, that the updated 1-hour ozone standard attainment demonstration for the South Coast Air Basin is determined to be exempt from CEQA; and

WHEREAS, the SCAQMD Governing Board finds and determines that it can be seen with certainty that there is no possibility that the proposed project may have any significant adverse effects on the environment, and is therefore, exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Activities Covered by General Rule; and

WHEREAS, the SCAQMD Governing Board finds and determines that the proposed project is also categorically exempt from CEQA requirements pursuant to CEQA Guidelines Section 15308 – Actions by Regulatory Agencies for Protection of the Environment, because the proposed project is designed to further protect or enhance the environment; and

WHEREAS, the SCAQMD staff has prepared a Notice of Exemption for the proposed project, that is completed in compliance with CEQA Guidelines Section 15062 – Notice of Exemption; and

WHEREAS, the proposed project and supporting documentation, including but not limited to, the Notice of Exemption, were presented to the SCAQMD Governing Board and the SCAQMD Governing Board has reviewed and considered this information, and has taken and considered staff testimony and public comment prior to approving the project; and

WHEREAS, the 2016 Air Quality Management Plan (AQMP) was designed to address the ozone and PM2.5 SIP requirements of the federal Clean Air Act; and

WHEREAS, the 2016 AQMP was approved by the SCAQMD Governing Board in March 2017, then subsequently submitted to the California Air Resources Board (CARB) and the U.S. Environmental Protection Agency (U.S. EPA) for inclusion into the SIP; and

WHEREAS, the purpose of this update is to demonstrate the attainment of the 1-hour ozone standard for the South Coast Air Basin in 2022 based on the emissions inventory consistent with the final emissions inventory used for the attainment demonstrations for the 8-hour ozone and PM2.5 standards included in the 2016 AQMP; and

WHEREAS, the updated attainment demonstration relies only on SCAQMD measures based on the expectation that anticipated progress in emission reductions targeted toward attainment of the 1997 8-hour ozone standard by 2023 will ensure the attainment of the 1-hour ozone standard by 2022; and

WHEREAS, the updated modeling analysis shows that emission reductions from CARB's SIP strategies, including both defined measures and undefined measures (182(e)(5) measures), are not needed in the updated 1-hour attainment demonstration; and

WHEREAS, the updated attainment demonstration eliminates the need to submit 182(e)(5) contingency measures for the 1-hour ozone standard attainment demonstration; and

WHEREAS, the SCAQMD staff concludes that the project is exempt from CEQA because the update is not proposing to add any new control measures or delete any existing control measures from the 2016 AQMP but merely presents updated analyses and other changes that do not have the potential to cause a direct or indirect adverse impact on the environment; and

WHEREAS, the SCAQMD Governing Board has determined that no socioeconomic assessment is required under Health & Safety Code section 40440.8(a), and further that no socioeconomic impact will result from the update; and

WHEREAS, the public hearing has been properly noticed by providing a 30-day notice in the newspapers in accordance with U.S. EPA CFR Part 40 Section 51.102(d); and

WHEREAS, the SCAQMD Governing Board has held a public hearing to consider approval of the update in accordance with all provisions of law; and

WHEREAS, the SCAQMD specifies the manager of the update as the custodian of the documents or other materials which constitute the record of proceedings upon which the approval is based, which are located at the South Coast Air Quality Management District, 21865 Copley Drive, Diamond Bar, California.

NOW, THEREFORE, BE IT RESOLVED, that the SCAQMD Governing Board does hereby determine, pursuant to the authority granted by law, that the proposed project is exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Activities Covered by General Rule, and CEQA Guidelines Section 15308 – Actions by Regulatory Agencies for Protection of the Environment. This information was presented to the SCAQMD Governing Board, whose members reviewed, considered and approved the information therein prior to acting on the proposed project; and

BE IT FURTHER RESOLVED, that the SCAQMD Governing Board does hereby approve, pursuant to the authority granted by law, the updated 1-hour ozone standard attainment demonstration for the South Coast Air Basin, Attachment B to the Board Letter, and incorporated herein by this reference.

BE IT FURTHER RESOLVED, that the SCAQMD Executive Officer is hereby directed to forward a copy of this Resolution and the Updated 1-hour ozone standard attainment demonstration for the South Coast Air Basin to CARB, and to request that these documents be forwarded to the U.S. EPA for approval as part of the California SIP. In addition, the SCAQMD Executive Officer is directed to forward any other information requested by the U.S. EPA for informational purposes.

DATE: _____

CLERK OF THE BOARDS

ATTACHMENT B



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Updated Federal 1979 1-Hour Ozone Standard Attainment Demonstration

November 2018

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WAYNE NASTRI

DRAFT

**UPDATED 1-HOUR OZONE STANDARD ATTAINMENT
DEMONSTRATION**

EXECUTIVE SUMMARY

INTRODUCTION

UPDATED ATTAINMENT DEMONSTRATION

APPENDIX

**A: CONTROL MEASURES USED FOR THE 1979 1-HOUR OZONE
STANDARD ATTAINMENT DEMONSTRATION**

~~USED FOR 1-HOUR ATTAINMENT DEMONSTRATION~~

B: CEPA SOURCE LEVEL EMISSIONS REDUCTION SUMMARY

Executive Summary

This document provides an update to the attainment demonstration for the federal 1979 1-hour ozone standard that was included in the 2016 Air Quality Management Plan (AQMP).

The 1-hour ozone standard attainment demonstration included in the 2016 AQMP relied on emission reductions from both SCAQMD stationary and mobile source control measures as well as mobile source measures from CARB's State Implementation Plan (SIP) developed primarily for meeting the 8-hour ozone standards in 2023 and 2031. SCAQMD control measures are based on either traditional regulatory or incentive-based strategies while CARB's SIP strategy includes both defined regulatory/incentive measures as well as measures identified as "Further Deployment of Cleaner Technologies" allowed under Clean Air Act Section 182(e)(5). This update is needed because the 1-hour ozone attainment demonstration included in the final 2016 AQMP was based on an emissions inventory that was slightly different than the final inventory used in the 8-hour ozone and PM2.5 attainment demonstrations.

The updated 1-hour ozone standard attainment demonstration addressed in this document consists of several revisions. First, the emissions inventory is updated to be consistent with the final emissions inventory used for the attainment demonstrations for the 8-hour ozone and PM2.5 standards included in the 2016 AQMP. Second, the air quality modeling is updated to reflect the revised emissions inventory. Third, the updated modeling analysis shows that emission reductions from CARB's SIP strategies including both defined measures and undefined measures (182(e)(5) measures) are not needed for the attainment demonstration. As such, the updated attainment demonstration relies only on SCAQMD measures based on the expectation that anticipated progress in emission reductions targeted toward attainment of the 1997 8-hour ozone standard by 2023 will ensure the attainment of the 1-hour ozone standard by 2022. The updated 1-hour ozone attainment demonstration eliminates the need to submit 182(e)(5) contingency measures for the 1-hour ozone attainment demonstration included in the 2012 AQMP, the latest U.S. EPA approved AQMP.

In summary, the updated analysis successfully demonstrates and reaffirms attainment of the 1-hour ozone standard by 2022.

Introduction

The South Coast Air Basin is currently in non-attainment of the federal 1979 1-hour ozone standard. The 2016 Air Quality Management Plan (AQMP)¹, adopted in March 2017, included control strategies that demonstrated attainment with the 1-hour ozone standard in 2022 as well as other federal ambient air quality standards in the South Coast Air Basin. These other standards included the 2008 8-hour ozone standard (75 ppb), the 1997 8-hour ozone standard (80 ppb), the 2012 annual PM_{2.5} standard (12 µg/m³), and the 2006 24-hour PM_{2.5} standard (35 µg/m³).

Attainment of the 1-hour ozone standard in the South Coast Air Basin was demonstrated primarily based on control strategies developed for the 8-hour ozone standards, relying on a fraction of the emission reductions associated with these strategies. The smaller amount of emission reductions needed for attainment is attributed to several factors. First, the 1-hour ozone standard is less stringent than the 8-hour ozone standards, requiring a significantly smaller amount of emission reductions. Second, unlike the 8-hour ozone standards, whose attainment relies on strategies that are heavily focused on NO_x reductions, the 1-hour ozone standard can be attained by implementing both NO_x and VOC strategies, including NO_x strategies that result in concurrent VOC reductions. Finally, since the 1-hour ozone concentrations in 2022 are projected to be very close to the 1979 standard without any additional emission controls beyond existing regulations, only modest NO_x and/or VOC emission reductions would be necessary to attain the 1-hour ozone standard by 2022. In summary, anticipated progress toward attainment of the 8-hour standard in 2023 would ensure attainment of the 1-hour standard by 2022.

The 1-hour ozone attainment demonstration included in the 2016 AQMP relied on emission reductions from both SCAQMD stationary and mobile source control measures as well as mobile source measures from CARB's State SIP strategy, which were developed primarily for meeting the 8-hour ozone standards in 2023 and 2031. SCAQMD control measures are based on either traditional regulatory or incentive-based strategies while CARB's SIP strategy includes both defined regulatory/incentive measures as well as measures identified as "Further Deployment of Cleaner Technologies" measures that do not yet have fully-defined implementation strategies (i.e., proposed under Section 182(e)(5)).

During the AQMP process, several versions of the emissions inventory were developed depending on the availability of the most updated data. The modeling for the 1-hour attainment demonstration in the 2016 AQMP was conducted based on the emissions inventory that became available toward the end of the AQMP process, but a final version was developed soon after which was used for the attainment demonstration of the 8-hour ozone and PM_{2.5} standards.

¹ SCAQMD, 2017, Final 2016 Air Quality Management Plan. Available at: <https://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/final-2016-aqmp>

However, the 1-hour attainment demonstration was not updated to reflect the final emissions inventory in the 2016 AQMP because of timing constraints.

This document provides an updated 1-hour ozone attainment demonstration based on the final inventory included in the 2016 AQMP and the updated air quality modeling analysis based on the final inventory. The updated analysis shows that the 1-hour ozone standard will be attained in 2022 based on implementation of SCAQMD control measures without any emission reductions from CARB's SIP strategies, including the 182(e)(5) measures. This updated 1-hour ozone attainment demonstration represents an analysis consistent with the 8-hour ozone and PM2.5 attainment demonstrations based on the use of the final emissions inventory in the 2016 AQMP.

A detailed attainment demonstration including updated emissions inventory, emission reductions itemized by control measure, numerical modeling results, spatial distribution of base year and future year design values, and a weight of evidence analysis is presented in this document. A description of control strategies used for the 1-hour ozone standard attainment demonstration and the Controlled Emissions Processing Algorithm (CEPA) output, which summarizes emission reductions by control measure, are included in Appendix A and B, respectively.

Updated Attainment Demonstration

1. Updated Baseline Emissions Inventory

The emissions inventory for the 2016 AQMP was developed jointly by SCAQMD and CARB. During the process of AQMP development, the emissions inventory was revised multiple times as updated data became available. The 8-hour ozone and PM2.5 attainment demonstrations included in the 2016 AQMP were based on the final emissions inventory made available to the District in November 2016. However, the 1-hour ozone standard attainment demonstration and modeling were based on an earlier emissions inventory version available in October 2016, which made the 1-hour ozone standard attainment demonstration inconsistent with the other attainment demonstrations that were based on the final emissions inventory included in the 2016 AQMP. The final November version of the emissions inventory contained updates in the locomotives emission category. Table 1 summarizes the differences between these two emissions inventories. The updated attainment demonstration in this report relies on the inventory consistent with the other attainment demonstrations and emissions analysis included in Chapter 3, Appendix III of the 2016 AQMP. As shown, the updated NOx emissions in years 2012 and 2022 were lower by about 1.6 and 7.5 tons per day, respectively.

TABLE 1

Basin Total Summer Planning NOx and VOC emissions

	Year 2012		Year 2022	
	Oct 2016 Version	Nov 2016 Version	Oct 2016 Version	Nov 2016 Version
Annual Average (tons/day)				
VOC	470.2	470.1	362.7	362.3
NOX	541.4	539.8	297.9	290.4
Summer Planning (tons/day)				
VOC	499.7	499.6	383.1	382.7
NOX	524.0	522.4	294.3	286.8

2. Updated Attainment Strategy for 1-hour Ozone Standard

The South Coast Air Basin is currently in non-attainment of the 1979 1-hour ozone standard and is required to attain the standard by December 31, 2022. This is one year prior to the 1997 8-hour ozone attainment deadline of 2023. The 2016 AQMP concludes that approximately 45% additional NOx emissions reductions beyond the projected 2023 business-as-usual condition, i.e., with no additional control measures beyond those already adopted (baseline), is needed to show attainment of the 8-hour ozone standard in 2023. Comparatively, the 1-hour ozone design value of the Basin is projected to be close to the standard in 2022, such that it requires only modest additional emission reductions beyond currently implemented and adopted regulations to demonstrate attainment. Therefore, anticipated progress toward the 2023 target is expected to ensure the attainment of the 1-hour ozone standard in 2022.

The attainment strategy for the 1-hour ozone standard in the 2016 AQMP relied on SCAQMD's proposed stationary and mobile source measures as well as CARB's SIP strategy, which included both defined (regulatory or incentive) measures and undefined 182(e)(5) measures that are based on further deployment of cleaner mobile source technologies. For SCAQMD's measures, it was assumed that 86% of the 8-hour ozone standard's reductions commitments in 2023 will be achieved in 2022 based on the anticipated rate of reductions for full implementation of these measures in 2023.

Additional reductions were attributed to CARB's measures for several mobile source categories, which included heavy-duty vehicles, locomotives, ocean going vessels and small off-road engines (SORE). While CARB's SIP strategy sets emission reduction targets for 2023 and 2031, it does not define the amount of emission reductions for intermediate years. In addition, these CARB measures (except for SORE) were identified in the SIP Strategy as "Further Deployment of Cleaner

Technologies” measures without having fully-defined implementation strategies (i.e., proposed under Section 182(e)(5)). For the CARB measures, it was assumed that 13% of CARB’s total 8-hour ozone standard’s reduction commitments in 2023 will be achieved in 2022 based on the level of remaining emission reductions needed for the 1-hour ozone attainment demonstration.

However, based on the updated attainment demonstration outlined in this document, neither reductions from CARB’s defined SIP mobile source strategies nor CARB’s 182(e)(5) measures are needed for attainment of the 1-hour ozone standard in 2022. Hence, attainment of the 1-hour ozone standard can rely solely on the implementation of the SCAQMD’s measures in the 2016 AQMP. Table 2 lists SCAQMD’s control measures and associated emission reductions commitments included in the updated 1-hour ozone attainment demonstration. Table 2 is a reprint of Table 4-9 in the 2016 AQMP. The control measures included in the 1-hour ozone standard attainment demonstration are described in Chapter 4 of the 2016 AQMP with a brief summary of control measures included in Appendix A of this document for completeness.

TABLE 2

1979 1-hour Ozone (120 ppb) SIP Emission Reduction Commitment to be Achieved by 2022 through SCAQMD Stationary and Mobile Source Regulatory Programs^a
(Summer Planning Inventory, tons per day)

YEAR	VOC		NOx	
	Based on Adoption Date	Based on Implementation Date ^b	Based on Adoption Date	Based on Implementation Date ^b
2016				
2017	CTS-01 (1)		MOB-10 (1.9) MOB-11 (2.9) MOB-14 (11) 15.8	
2018	CMB-01 (1.2) CMB-03 (0.4) ECC-02 (0.07) ECC-03 (0.2) 1.9		CMB-01 (2.5) CMB-02 (1.1) CMB-03 (1.4) CMB-04 (0.8) ECC-02 (0.3) ECC-03 (1.2) 7.3	
2019	FUG-01(2) BCM-10 (1.5) 3.5			
2020		BCM-10 (1.5) CMB-03 (0.4) CTS-01 (1) 2.9		CMB-02 (1.1) CMB-03 (1.4) 2.5
2021				
2022		FUG-01 (2) ECC-02 (0.06) [^] ECC-03 (0.17) [^] CMB-01 (1.0) [^] 3.2		CMB-04 (0.8) MOB-10 (1.9) MOB-11 (2.5) [^] MOB-14 (9.5) [^] ECC-02 (0.26) [^] ECC-03 (1.03) [^] CMB-01 (2.15) [^] 18.1
TOTAL*	6.4	6.1	23	21

^a Control measures are described in the 2016 AQMP (<https://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/final-2016-aqmp>) and in Appendix A in this document.

^b Represents the final, full implementation date; typically a rule contains multiple implementation dates.

* All ozone strategy reductions are adopted by 2022. However, not all adoptions are implemented by 2022. Therefore, totals are not equal.

[^] 86 percent of control measures' 2023 reductions. SCAQMD's mobile source control measures would also achieve concurrent VOC emission reductions which would further assist in meeting the 1-hour ozone standard in 2022.

Table 3 summarizes the projected NOx and VOC emissions in 2022 with no additional regulations (baseline), reductions associated with SCAQMD measures (Table 2), a set-aside account from the 2016 AQMP (i.e. general conformity, VOC from phase-out of toxics), and the remaining emissions.

Table 3. Total NOx and VOC Emissions for 1-hour Ozone Attainment Strategy

	VOC (Tons/Day)	NOx (Tons/Day)
Baseline*	382.7	286.8
Reductions	6.1	20.6
Set Aside Account	4.5	3.1
Remaining	381.2	269.3

* Summer Planning Inventory

3. Updated Air Quality Modeling

The Weather Research Forecast (WRF) and the Community Multiscale Air Quality (CMAQ) modeling platforms, with an in-house emission processing system, was employed to demonstrate attainment of the 1-hour ozone standard. The modeling platform is identical to the one used in the 8-hour ozone and PM_{2.5} attainment demonstration included in the 2016 AQMP. Performance evaluation of the 2012 base year ozone modeling, meteorological modeling, ozone episode analysis, 1-hour ozone demonstration methodology, 1-hour ozone isopleths, ~~weight of evidence~~ and uncertainty discussions included in the 2016 AQMP remain unchanged and therefore are not repeated here. Such analysis and discussions are included in Chapter 5 and Appendix V of the 2016 AQMP.

The updated 1-hour ozone design values at the various monitoring stations are presented in Table 4. Modeling results from the 2012 AQMP are also included in this table to be consistent with the format presented in Table 5-3 of the 2016 AQMP. The 2022 predicted baseline ozone values included in the 2012 AQMP are different from the results presented in the 2016 AQMP (e.g., Pasadena site had the maximum 1-hour ozone concentration predicted for 2022 in the 2012 AQMP). This is due to multiple factors including changes in the numerical modeling platform, emissions methodology and Relative Response Factor approaches, year-to-year changes in meteorology and ozone design values as well as additional emission reductions from regulations and expedited mobile source turn-overs (through incentive funding programs) implemented after the adoption of the 2012 AQMP. More details on the updates introduced in the 2016 AQMP attainment demonstration are provided in Appendix V of the 2016 AQMP.

With the updated 1-hour ozone attainment strategy and the emission reductions identified in Table 2, the maximum 1-hour ozone ~~maximum~~ concentration in the Basin is expected to be 123 ppb at the Fontana location in 2022, which is below the ~~125~~4 ppb level required by the CAA. While the foothill areas in the San Gabriel and San Bernardino mountains including Glendora, Upland and Fontana, are still projected to have high 1-hour ozone levels in 2022 in the updated modeling analysis, Pasadena is expected to have 1-hour ozone levels that are lower than Fontana and other stations located in the foothills. This is due to the 1-hour ozone measurements at Pasadena being lower than Fontana during the five year period (2010-2014) used in the base year design value calculations. Pasadena has consistently shown lower ozone levels than Fontana in the 2015-2017 period as well. Pasadena is not included in Table 4 due to missing data from Dec 2012 to May 2013, a period when the station was shut down for upgrades.

In summary, the updated modeling analysis demonstrates that the 1979 federal 1-hour ozone standard is expected to be attained in 2022 in the South Coast Air Basin without reliance on emission reductions from CARB's SIP strategy, including the 182(e)(5) measures. This eliminates the need to develop contingency for 182(e)(5) measures by January 2019.

TABLE 4

Base-year Design Values and Model-Predicted 1-Hour Ozone Design Values (ppb)

Station	2012 5-Year Weighted Design Value	Final 2012 AQMP		2016 AQMP	
		2022 Baseline	2022 Controlled	2022 Baseline	2022 Controlled
Azusa	112	139	131	104	102
Banning	-	119	102	--	--
Burbank	-	123	111	--	--
Crestline	132	134	116	120	119
Fontana	138	128	110	125	123
Glendora	132	143	133	121	120
Lake Elsinore	108	108	90	93	92
Pasadena	-	141	134	--	--
Perris	114	111	94	108	106
Pomona	117	124	108	103	102
Redlands	133	127	109	120	119
Reseda	125	112	101	105	104
Riverside	124	116	103	109	107
San Bernardino	123	127	110	107	105
Santa Clarita	132	119	105	110	108
Upland	135	135	121	122	120

NOTE: Burbank and Banning do not have 5-year weighted 2012 base-year design values due to incomplete measurement data, and therefore, it was not possible to calculate 2022 design values at these stations. Burbank does not meet U.S. EPA data completeness requirements in 2014, Pasadena does not meet U.S. EPA data completeness requirements in 2013 and Banning does not meet U.S. EPA data completeness requirements in 2013.

4. Spatial Projections of 1-Hour Ozone Design Values

The spatial distribution of 1-hour ozone design values for the 2012 base year is shown in Figure 1. Ozone air quality projections for 2022 without (baseline) and with (controlled) implementation of all proposed control measures in the updated control strategy are presented in Figure 2 and Figure 3, respectively. The predicted ozone concentrations will be significantly reduced in future years in all parts of the Basin with continued implementation of already adopted measures as well as the SCAQMD control measures proposed in the 2016 AQMP. Future design values are predicted from modeled Relative Response Factors (RRFs) and measured base-year design values. Future design values are then interpolated using a natural neighbor interpolation to generate the interpolated fields. With the proposed control measures to reduce ozone precursor emissions, the South Coast Air Basin is expected to meet the 1979 1-hour ozone standard in 2022 (Figure 3).

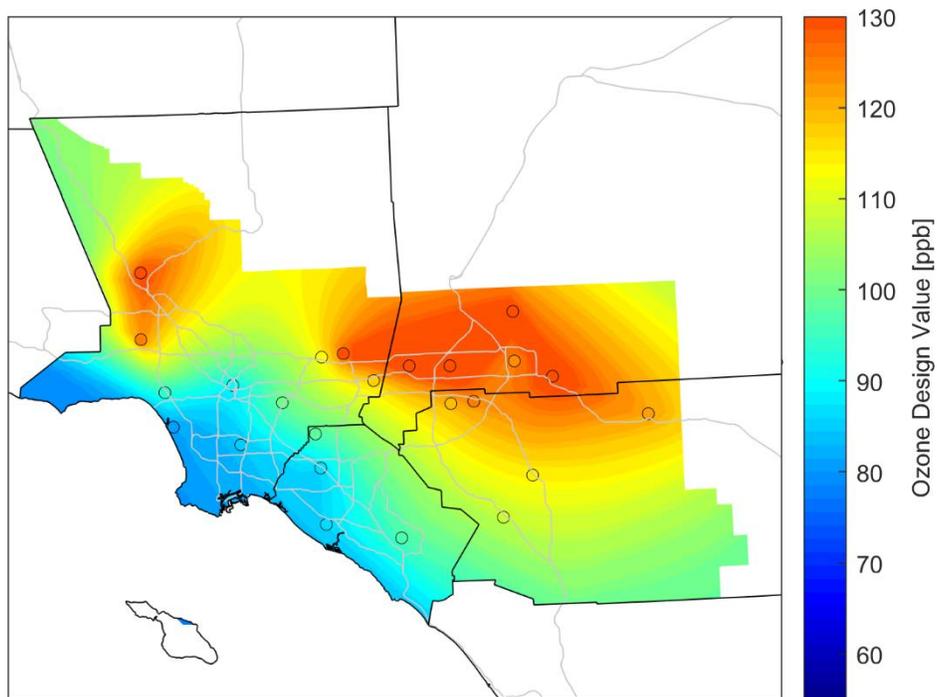


FIGURE 1
2012 OBSERVED 5-YEAR WEIGHTED 1-HOUR OZONE DESIGN VALUES (ppb)

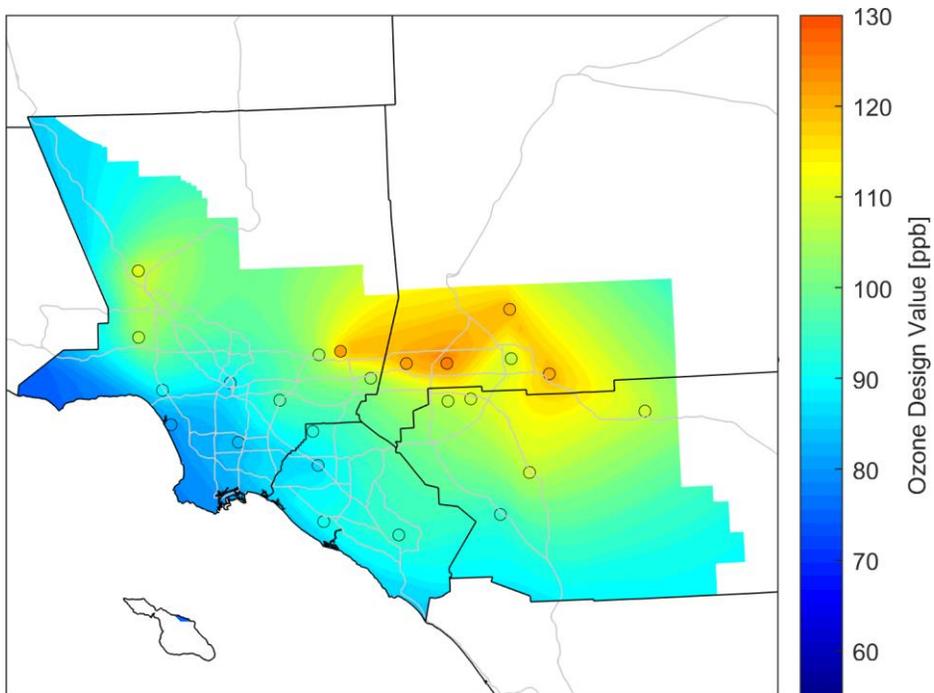


FIGURE 2
MODEL-PREDICTED 2022 BASELINE 1-HOUR OZONE CONCENTRATIONS (ppb)

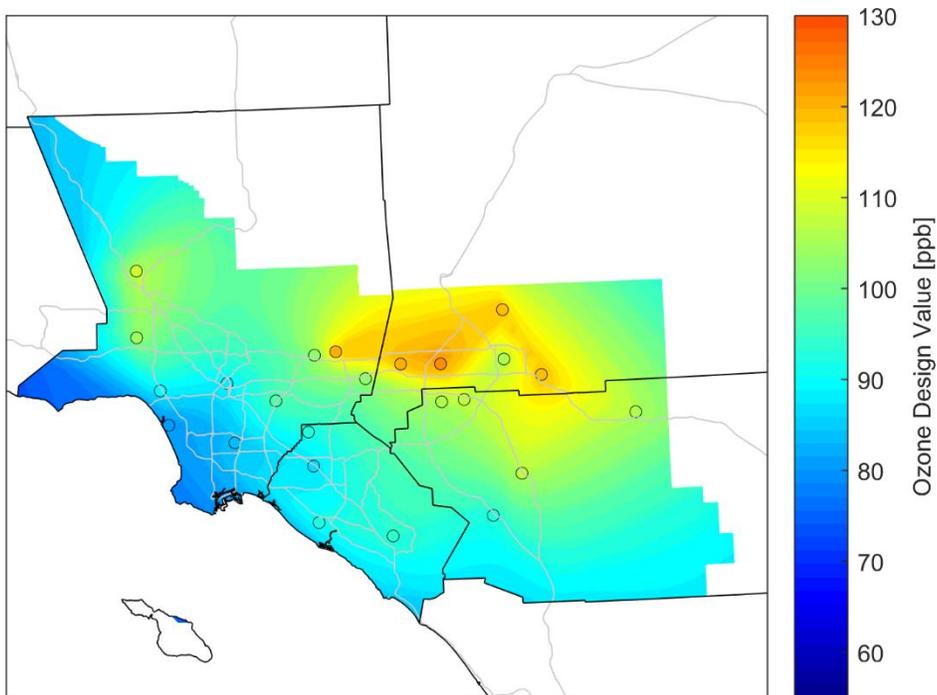


FIGURE 3
MODEL-PREDICTED 2022 CONTROLLED 1-HOUR OZONE CONCENTRATIONS (ppb)

5. Weight of Evidence

Ozone modeling guidance² strongly recommends the use of corroborating evidence to support the future year attainment demonstration. The control strategies for the 1-hour ozone standard attainment demonstration are based on emission reductions from SCAQMD control measures and do not include any reductions from CARB measures. Yet, sensitivity tests were conducted to evaluate the efficacy of various emission reduction scenarios including reductions from selected CARB's SIP control measures as well as SCAQMD control measures. The results of sensitivity tests are discussed here as weight of evidence to ensure the robustness of model responses to various emissions control strategies.

Different control strategies affect spatial distribution of emission reductions differently, because of the distinct location of the sources affected by those regulations. For example, Control Measure MOB 11 (Expanded Exchange Program for Lawn and Garden Equipment) and CARB's Small Off-Road Engines (SORE) measure targets lawn and garden equipment, which uniformly affect emissions throughout the Basin, whereas control measures affecting ocean-going vessels (OGV) reduce emissions mostly in the immediate vicinity of the ports of Los Angeles and Long Beach. Therefore, the impact of emissions reduction from OGV is larger in coastal areas than inland downwind locations.

Also, in contrast to the 8-hour attainment demonstrations which depend on NO_x reductions, VOC emission reductions are as effective, or even slightly more effective than NO_x reductions in decreasing the 1-hour ozone design value. The 1-hour ozone isopleth presented in Figure V-8-12 in Appendix V of the 2016 AQMP clearly illustrates the sensitivity of 1-hour ozone to VOC emissions. The contours of the 1-hour ozone isopleths are aligned almost vertically near the upper right corner, indicating VOC reductions can yield ozone improvements as effective or even more effectively than NO_x reductions. On the contrary, the 8-hour ozone isopleths (Figure V-5-22 in Appendix V of the 2016 AQMP) show the contours almost parallel to the horizontal axis, indicating 8-hour ozone being less sensitive to VOC emission reductions under future baseline conditions. Thus, control measures promoting VOC emission reductions, like the ones targeting lawn and gardening equipment, tend to be more effective than other measures primarily affecting NO_x emissions for the 1-hour attainment demonstration.

The sensitivity tests included in the weight of evidence discussion are summarized in Table 5.

² U.S. EPA, 2014, Modeling Guidance for Demonstrating Attainment of Air Quality Goals for Ozone, PM_{2.5}, and Regional Haze, Draft. December 2014

TABLE 5

Description of Attainment Demonstration Sensitivity Scenarios

Scenario	Measures Included
Attainment Demonstration	Measures listed in Table 2
Sensitivity Case 1	Measures listed in Table 2 with the inclusion of concurrent VOC emission reductions from mobile source measures (MOB-10, MOB-11, MOB-14) and residential/commercial combustion measures (CMB-02, CMB-04)
Sensitivity Case 2	Measures listed in Table 2 + CARB's Proposed Measure for Small Off-Road Engines
Sensitivity Case 3	Control Measure MOB-14 (existing mobile source incentive projects only) + Control Measure MOB-11 (extended exchange program for lawn and garden equipment)
Sensitivity Case 4	Measures listed in Sensitivity Case 2 + CARB's control measures for Locomotives and OGV At-Berth

Table 6 shows the VOC and NO_x emission reductions and the 1-hour ozone design values resulting from the sensitivity simulations. Ozone response to the change of its precursor emissions varies depending on the level of ozone concentration, the ratio of VOC and NO_x emissions, the availability of other chemical species and meteorological conditions. For 2022, the effectiveness of ozone reduction from various scenarios varies between 0.07 and 0.08 ppb per ton of either NO_x or VOC emission reductions.

TABLE 6

Emission Reductions and Resulting Effects on 1-hour O₃ Design Values for Attainment Demonstration Sensitivity Scenarios

Scenario	Emission Reductions		Design Value	
	VOC (tpd)	NOX (tpd)	Design Value (ppb)	1-h O ₃ Reduction per ton (ppb/ton)
Attainment Demonstration	6.1	20.6	123.5	0.07
Sensitivity case 1	12.2	20.6	123.0	0.07
Sensitivity case 2	15.7	20.9	122.6	0.08
Sensitivity case 3	5.5	7.3	124.5	0.07
Sensitivity case 4	15.9	25.4	122.4	0.07

Sensitivity Case 1 includes concurrent VOC emission reductions associated with SCAQMD's mobile source measures (MOB-10, MOB-11, MOB-14) and SCAQMD's residential and commercial appliances measures rules (CMB-02, CMB-04), which would result in an additional 6.1 TPD of VOC reductions than the attainment demonstration case. The 1-hour design value from this scenario is 123.0 ppb, 0.5 ppb lower than the attainment case. While the Sensitivity Case 1 assumes the VOC reductions from all the sources subject to the SCAQMD's control measures applied to the 1-hour ozone attainment demonstration, it is not used as attainment demonstration due to potential uncertainties to estimate VOC reductions from aforementioned control measures. Still, Sensitivity Case 1 provides additional weight of evidence on the attainment of the 1-hour ozone standard in 2022.

Sensitivity Case 2 appears to be the most effective scenario, which includes additional emission reductions from CARB's proposed Small Off-Road Engine (SORE) measure. These additional reductions from the SORE measure contribute significantly to achieving a reduction in 1-hour ozone design value with the efficiency of 0.08 ppb per ton. The analysis confirms that emissions reductions from SORE are very effective in improving 1-hour ozone concentration due to the spatial spread of the emission reductions as well as substantial amount of concurrent VOC reductions. However, there are uncertainties about the actual level of reductions that will be achieved in 2022 from CARB's proposed SORE measure that will not be adopted until 2020. Therefore, this sensitivity case may not be a dependable option for the 1-hour ozone attainment demonstration, yet, it confirms the sensitivity of 1-hour ozone to VOC reductions.

Sensitivity Case 3 includes the least amount of NO_x emission reductions, based on expected reductions from existing mobile source incentive projects (i.e., projects funded already under Carl Moyer and other incentive programs) and reductions expected from lawn and garden equipment under MOB-11. The effectiveness in ozone reduction achieved in this scenario is 0.07 ppb per ton, which is the same as in the attainment demonstration case. The resulting 1-hour ozone design value for Sensitivity Case 3 is 124.5 ppb, which also complies with the 1-hour ozone standard (based on EPA's rounding and truncation notation for the 8-hour ozone design value). While allocating 86% of 2023 emission reduction targets in 2022 may seem to be an ambitious goal, this scenario indicates that the actual amount of emission reductions required to attain the 1-hour ozone standard is significantly less than the 86% target included in the attainment scenario. Therefore, even if there is a marginal shortfall in the emission reductions, the SCAQMD is still expected to attain the 1-hour standard in 2022. Therefore, the SCAQMD is still expected to attain the 1-hour standard in 2022, even if there is a marginal shortfall in the emission reductions or changes in the baseline emissions. For instance, the latest OGV emissions show higher NO_x emissions by about 13 tons per day in 2022 due to the changes in the penetration of the cleanest vessels (with Tier 3 engines). Sensitivity Case 3 indicates that, even with the additional 13 tons per day of NO_x, the remaining emissions will be similar to those in the attainment case, and, therefore the South Coast Air Basin is still projected to show attainment of the 1-hour ozone standard by 2022.

Sensitivity Case 4 includes additional emission reductions from locomotives and OGV at berth (i.e., CARB's 182(e)(5) measures) in addition to the reductions from Sensitivity Case 2. The impact of the additional NO_x reductions from locomotives and ships is similar to those of the attainment case and Sensitivity Case 3, but not as effective as the measure targeting SORE. Although this sensitivity case also results in an acceptable 1-hour attainment demonstration, it is not as reliable option because it depends on undefined 182(e)(5) measures. The modeling results and the sensitivity of 1-hour ozone to its precursor emissions reductions are consistent with the 1-hour ozone attainment demonstration included in the 2016 AQMP, confirming the robustness of the present modeling analysis.

The weight of evidence analysis presented here confirms that the attainment demonstration case (based on SCAQMD control measures) is a viable and robust attainment demonstration path.

APPENDIX A:

**CONTROL MEASURES FOR THE 1979 1-HOUR OZONE
STANDARD ATTAINMENT DEMONSTRATION**

(—REPRINTED FROM THE 2016 AQMP)

ECC-02 – CO-BENEFITS FROM EXISTING RESIDENTIAL AND COMMERCIAL BUILDING ENERGY

EFFICIENCY MEASURES: This control measure would seek to account for criteria pollutant co-benefits from the implementation of required energy efficiency mandates such as California’s Title 24 program and SB 350 (Clean Energy Pollution Reduction Act). The 2020 target for Title 24 will be to achieve zero net energy consumption from new residential buildings by utilizing new building materials and more efficient appliances. SB 350 doubles the additional achievable energy efficiency savings in electricity and natural gas energy uses in existing buildings and increases renewable energy sources as a share of a utility’s power sources from 33 to 50 percent by 2030. This control measure will take advantage of the co-benefit emission reductions from implementation of these state regulations.

ECC-03 – ADDITIONAL ENHANCEMENTS IN REDUCING EXISTING RESIDENTIAL BUILDING

ENERGY USE: This control measure would seek to provide incentives to go beyond the goals within ECC-02 and CMB-02. Incentive programs would be developed for existing residences that include weatherization, upgrading older appliances with highly efficient technologies and renewable energy sources to reduce energy use for water heating, lighting, cooking and other large residential energy sources. Incorporating newer, efficient appliance technologies, weatherization measures along with renewables such as solar thermal and solar photovoltaics can provide emission reductions within the residential sector above current SCAQMD and state regulations along with reduced energy costs. When implementing this measure the SCAQMD will collaborate with utilities, agencies, and other organizations to help leverage funding and coordinate incentives with similar existing programs. This measure will also track the requirements of the upcoming Title 24 Zero Net Energy for new residential energy building standards. SCAQMD will begin to participate in this development process to advocate for criteria and GHG emission consideration in the new standards.

CMB-01 – TRANSITION TO ZERO AND NEAR-ZERO EMISSION TECHNOLOGIES FOR STATIONARY

SOURCES: This proposed control measure would seek corresponding VOC reductions from NOx-focused measures addressing traditional combustion sources by replacement with zero and near-zero emission technologies including low NOx emitting equipment, electrification, battery storage, alternative process changes, efficiency measures, or fuel cells for CHP. Replacing older higher-emitting equipment with newer lower or zero-emitting equipment can apply to a single source or an entire facility. These sources include, but are not limited to, engines, turbines, microturbines, and boilers that generate power for electricity for distributed generation, facility power, process heating, and/or steam production. Another type of combustion source identified for equipment replacement includes ovens, kilns, and furnaces. New businesses can be required or incentivized to install and operate zero-emission equipment, control equipment, technology and processes beyond the current BACT requirements. Fuel cells are also an alternative to traditional combustion methods, resulting in a reduction of NOx emissions with the co-benefit of reducing VOCs and GHGs. Incentives may be used towards alternative process changes, such as

biogas cleanup. This would help modernize a facility towards zero and near-zero technologies. This control measure would also seek energy storage systems and smart grid control technologies that provide a flexible and dispatchable resource with zero emissions. Grid based storage systems can replace the need for new peaking generation, be coupled with renewable energy generation, and reduce the need for additional energy infrastructure. Mechanisms will be explored to incentivize businesses to choose the cleanest technologies as they replace equipment and upgrade facilities, and to provide incentives to encourage businesses to move into these zero and near-zero emission technologies sooner. Over the anticipated timeline of this Plan, as emerging technologies become more widely available and costs decline, the SCAQMD will undergo rulemaking to require zero emission equipment be installed where economically feasible, and require near-zero emissions levels in all other applications.

CMB-02 – EMISSION REDUCTIONS FROM REPLACEMENT WITH ZERO OR NEAR-ZERO NO_x APPLIANCES IN COMMERCIAL AND RESIDENTIAL APPLICATIONS: This control measure seeks annual average NO_x emission reductions from unregulated commercial space heating furnaces through regulations and incentives that will replace existing older NO_x appliances such as boilers, water heaters, and space heating furnaces and other natural gas or LPG equipment with zero emitting or lower NO_x technologies. The measure calls for a priority on maximizing emission reductions utilizing zero-emission technologies in all applications that are shown to be cost-effective and feasible. In other applications, near-zero technologies will be incentivized to meet attainment goals. In assessing the cost-effectiveness of these technologies, full life-cycle in-Basin emissions related to energy and fuel production and transmission pathways will be considered, along with GHG emissions, toxic impacts, and anticipated future changes to the energy portfolio in the Basin. This control measure will apply to manufacturers, distributors, sellers, installers and purchasers of commercial and residential appliances and equipment. The control measure has two components. The first component is to continue to implement the Rule 1111 emission limit of NO_x for residential space heaters which is 14 ng/J (20 ppm) starting in 2014. The second component is to incentivize the replacement of older boilers, water heaters and space heaters with newer and more efficient low NO_x boilers, water heaters and space heaters, and/or “green technologies” such as solar heating or heat pumps. The SCAQMD will also consider potential future regulatory actions to support replacement of older space heating furnaces, water heaters and boilers with lower emissions and zero or near zero emission technologies. The new boilers and water heaters replaced through incentives would comply with current SCAQMD rule emission limits and new space heaters would meet a specified emission limit. If required, the SCAQMD will consider amending Rules 1121 and 1111 to put in place a heat input based emission limit which will result in lower NO_x emissions for high efficiency units compared with standard efficiency units. Because of the rules’ heat output based limits, high efficiency water heaters and furnaces emit the same amount of NO_x per day as standard efficiency units. In addition, the SCAQMD will also consider developing a rule to limit NO_x emissions from those commercial and residential heating furnaces which are currently unregulated.

CMB-03 – EMISSION REDUCTIONS FROM NON-REFINERY FLARES: Flare NO_x emissions are regulated through NSR and BACT, but there are currently no source-specific rules regulating NO_x emissions from existing flares at non-refinery sources, such as organic liquid loading stations, tank farms, and oil and gas production, landfills and wastewater treatment facilities. This control measure proposes that, consistent with the all feasible control measures, all non-refinery flares meet current BACT for NO_x emissions and thermal oxidation of VOCs. The preferred method of control would involve capturing the gas that would typically be flared and converting it into an energy source (e.g., transportation fuel, fuel cells, facility power generation). If gas recovery is not cost-effective or feasible, the installation of newer flares utilizing clean enclosed burner systems implementing BACT will be considered.

CMB-04 – EMISSION REDUCTIONS FROM RESTAURANT BURNERS AND RESIDENTIAL COOKING: This control measure applies to retail restaurants and quick service establishments utilizing commercial cooking ovens, ranges and charbroilers by funding development of, promoting and incentivizing the use and installation of low-NO_x burner technologies. In addition, the SCAQMD would consider developing a manufacturer based rule to establish emission limits for cooking appliances used by restaurants and residential applications. Finally, co-benefit reductions will be sought through existing or enhanced energy efficiency programs being implemented by other entities.

FUG-01 – IMPROVED LEAK DETECTION AND REPAIR: This control measure seeks to reduce emissions from a variety of VOC emission sources including, but not limited to, oil and gas production facilities, petroleum refining and chemical products processing, storage and transfer facilities, marine terminals, and other sources, where VOC emissions occur from fugitive leaks in piping components, wastewater system components, and process and storage equipment leaks. Most of these facilities are required under SCAQMD and federal rules to maintain a leak detection and repair (LDAR) program that involves individual screening of all of their piping components and periodic inspection programs of equipment to control and minimize VOC emissions. This measure would utilize advanced remote sensing techniques (Smart LDAR), such as Fourier transform infrared spectroscopy (FTIR), Ultraviolet Differential Optical Absorption Spectroscopy (UV-DOAS), Solar Occultation Flux (SOF), and infrared cameras, that can identify, quantify, and locate VOC leaks in real time allowing for faster repair in a manner that is less time consuming and labor intensive than traditional LDAR.

This control measure would pursue two goals. The first is to upgrade a series of SCAQMD's inspection/maintenance rules (Rules 462, 1142, 1148.1, 463, 1178, 1173, and 1176) to require, at a minimum, a self-inspection program, or utilization of an optical gas imaging-assisted LDAR program where feasible. The second is to explore the use of new technologies to detect and verify VOC fugitive emissions in order to supplement existing programs, explore opportunities where Smart LDAR might substitute for existing LDAR programs, and achieve additional emission

reductions. Both goals will be pursued in a public process allowing interested stakeholders to participate in pilot projects and the rule development process.

For new detection technology this control measure will be implemented in two phases: Phase I will be a pilot LDAR program to demonstrate feasibility with the new technology and to establish implementation protocols. The completion of Phase I will result in the identification of facilities/industries currently subject to LDAR programs and identification of those where the new technology is not yet ready to be utilized. Based on the results of Phase I, fugitive VOC rules will be amended as appropriate under the subsequent phase (Phase II) to enhance their applicability and effectiveness, and to further achieve emission reductions.

CTS-01 – FURTHER EMISSION REDUCTIONS FROM COATINGS, SOLVENTS, ADHESIVES, AND SEALANTS: This control measure seeks limited VOC emission reductions by focusing on select coating, adhesive, solvent and sealant categories by further limiting the allowable VOC content in formulations or incentivizing the use of super-compliant technologies. Examples of the categories to be considered include, but are not limited to, coatings used in aerospace applications, adhesives used in a variety of sealing applications, and solvents for graffiti abatement activities. Reductions could be achieved by lowering the VOC content of a few categories within SCAQMD source-specific Rules 1106, 1106.1, 1107, 1124, 1128, 1136, 1143, 1168, and 1171 where possible, especially where the majority of products already meet lower limits. For Rule 1113, where annual quantity and emissions reporting is required under Rule 314, SIP credit for market-driven reductions could be pursued in categories where many coatings are already formulated below current VOC limits. For solvents, reductions could be achieved by promoting the use of alternative low-VOC products or non-VOC product/equipment at industrial facilities. Particular VOC reductions that lead to the increased use of chemicals that are known or suspected to be toxic should be avoided until it can be demonstrated that these replacement products do not lead to increased toxic risk for workers or the general public. The tightening of regulatory exemptions can also lead to reduced emissions across multiple use categories.

BCM-10 – EMISSION REDUCTIONS FROM GREENWASTE COMPOSTING: VOCs and ammonia, which are PM precursor gases, are emitted from composting of organic waste materials including greenwaste and foodwaste and are currently regulated by existing SCAQMD Rule 1133.3. Although Rule 1133.3 covers foodwaste composting, the level of emissions from foodwaste composting has not been fully characterized, mainly due to the lack of related emissions test data. This control measure proposes potential emission minimization through emerging organic waste processing technology and potential emission reductions through restrictions on the direct land application of chipped and ground uncomposted greenwaste and through increased diversion to anaerobic digestion. This proposed control measure includes a 15-day pathogen reduction process of chipped and ground uncomposted greenwaste with composting best

management practices (BMPs) to reduce potential VOC and ammonia emissions from land applied greenwaste.

MOB-10 – EXTENSION OF THE SOON PROVISION FOR CONSTRUCTION/INDUSTRIAL EQUIPMENT: To promote turnover (i.e., retire, replace, retrofit, or repower) of older in-use construction and industrial diesel engines, this proposed measure seeks to continue the SOON provision of the Statewide In-Use Off-Road Fleet Vehicle Regulation beyond 2023 through the 2031 timeframe. Historically, the SCAQMD Governing Board has allocated up to \$30 million per year for the program. However, more recently, the Governing Board has allocated up to \$10 million per year. This measure proposes to extend the current SOON Program beyond 2023 to 2031 with a minimum allocation of \$10 million and potentially higher levels upon the Governing Board’s approval. In order to implement the SOON program in this timeframe, funding of up to \$30 million per year would be sought to help fund the repower or replacement of older Tier 0 and Tier 1 equipment to Tier 4 or cleaner equipment, with approximately 2 tpd of NOx reductions.

MOB-11 – EXTENDED EXCHANGE PROGRAM: This measure seeks to continue the successful lawnmower and leaf blower exchange programs in order to increase the penetration of electric equipment or new low emission gasoline-powered equipment used in the region. The lawnmower exchange program has resulted in over 55,000 gasoline lawnmowers replaced with zero-emission lawnmowers and over 12,000 older, dirtier gasoline-powered commercial leaf blowers replaced with newer, cleaner leaf blowers. The SCAQMD is currently conducting a lawn and garden equipment loan program with various public entities to demonstrate the feasibility of zero-emission lawn and garden equipment in various public and commercial settings. Such demonstrations will provide valuable information to lawn and garden equipment manufacturers to produce zero-emission products for the commercial environment. A segment of the lawn and garden equipment population comprised of diesel powered equipment represents a significant fraction of the total NOx emissions associated with this category. As such, the proposed extended exchange program will focus on incentives to accelerate the replacement of older equipment with new Tier 4 or cleaner equipment or zero-emission equipment where applicable. In addition, other small off-road equipment (SORE) equipment may also be considered for exchange programs for accelerating the turnover of existing engines.

MOB-14 – EMISSION REDUCTIONS FROM INCENTIVE PROGRAMS: This measure seeks to develop a rule similar to the San Joaquin Valley Air Pollution Control District Rule 9610 to recognize emission reduction benefits associated with incentive programs. The proposed rule would recognize the emission benefits resulting from incentive funding programs such as the Carl Moyer Memorial Air Quality Standards Attainment Program and Proposition 1B such that the emission reductions can be accounted for in the SIP. As previously mentioned, the U.S. EPA indicated that there are six general elements that need to be incorporated in a proposed rule in

order for the reductions to be credited in the SIP. The six necessary elements are the minimal amount of information, documentation, or commitment needed for U.S. EPA to consider approval of emission reduction benefits associated with incentives programs. Additional elements may be identified during the implementation of this measure.

APPENDIX B:

CEPA SOURCE LEVEL EMISSIONS REDUCTION SUMMARY

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Year 2022 Emission Reductions Excluding Natural Sources by Control Measure in the South Coast Air Basin (Planning Inventory - Tons/Day)

(A) Reductions Without Overlapping/Double-Counting With Other Control Measures (1)

Measure	Name	(Reductions - Tons/Day)			
		VOC	NOx	CO	NO2
BA-01	MOB-14 (Existing Projects) - School Buses - Diesel	0.00	0.15	0.01	0.15
BA-04	MOB-14 (Existing Projects) - Freight Locomotives (Prop1B/Moyer)	0.00	1.01	0.18	1.01
BA-06	MOB-14 (Existing Projects) - Offroad Equipment - Construction/Min	0.00	1.72	2.95	1.10
BA-07	MOB-14 (Existing Projects) - Harborcraft (Fishing Vessels)	0.00	1.96	0.74	1.68
ECC-02	Co-Benefits from Energy Efficiency Measures - Res/Comm Bldg	0.06	0.26	1.87	0.45
ECC-03	Additional Enhancement of Building Energy Efficiency	0.14	1.03	4.31	1.92
CMB-01	Zero and Near-Zero Emission Technologies at Stationary Sources	1.00	2.14	3.78	2.09
CMB-02	Commercial and Multi-Residential Space & Water Heating	0.00	1.10	1.20	1.79
CMB-03	Emission Reductions From Non-Refinery Flares	0.37	1.39	1.01	1.39
CMB-04	Emission Reductions From Restaurant Burners and Residential Cooki	0.00	0.81	0.38	0.81
FUG-01	Improved Leak Detection and Repair	2.03	0.00	0.00	0.00
CTS-01	Further Reduction from Coatings, Solvents, Adhesives & Lubricants	1.01	0.00	0.00	0.00
BCM-01	Further Emission Reductions from Commercial Cooking	0.00	0.00	0.00	0.00
BCM-10	Emission Reduction from Greenwaste Composting	1.50	0.00	0.00	0.00
ARB-LDV	On-Road Light Duty Vehicles	0.00	0.00	0.00	0.00
ARB-HDV	On-Road Heavy Duty Vehicles	0.00	0.00	0.00	0.00
CP	Consumer Products	0.00	0.00	0.00	0.00
FIS-AIRC	Federal/International - Aircrafts	0.00	0.00	0.00	0.00
FIS-LOCO	Federal/International - Locomotives	0.00	0.00	0.00	0.00
MOB-10	Extension of the SOON Provision	0.00	1.91	1.18	1.30
MOB-11	Extended Exchange Program	0.00	2.48	44.71	2.13
MOB-14a	MOB-14 (Future Project Funding) - School Buses	0.00	0.17	0.01	0.18
MOB-14c	MOB-14 (Future Project Funding) - Cargo Handling Equipment	0.00	0.17	2.33	0.16
MOB-14d	MOB-14 (Future Project Funding) - Freight Locomotives - Road Haul	0.00	0.05	0.02	0.05
MOB-14e	MOB-14 (Future Project Funding) - Heavy Duty Diesel Trucks (>1400	0.00	4.24	0.78	4.35
Grand Total (Net)		6.10	20.58	65.44	20.55

Year 2022 Emission Reductions Excluding Natural Sources by Control Measure in the South Coast Air Basin (Planning Inventory - Tons/Day)

(B) Reductions With Overlapping/Double-Counting With Other Control Measures (2)³

Measure	Name	(Reductions - Tons/Day)			
		VOC	NOx	CO	NO2
BA-01	MOB-14 (Existing Projects) - School Buses - Diesel	0.00	0.15	0.01	0.15
BA-04	MOB-14 (Existing Projects) - Freight Locomotives (Prop1B/Moyer)	0.00	1.01	0.18	1.01
BA-06	MOB-14 (Existing Projects) - Offroad Equipment - Construction/Min	0.00	1.72	2.95	1.10
BA-07	MOB-14 (Existing Projects) - Harborcraft (Fishing Vessels)	0.00	1.96	0.74	1.68
ECC-02	Co-Benefits from Energy Efficiency Measures - Res/Comm Bldg	0.06	0.26	1.87	0.45
ECC-03	Additional Enhancement of Building Energy Efficiency	0.14	1.06	4.41	1.97
CMB-01	Zero and Near-Zero Emission Technologies at Stationary Sources	1.00	2.14	3.78	2.09
CMB-02	Commercial and Multi-Residential Space & Water Heating	0.00	1.24	1.37	2.04
CMB-03	Emission Reductions From Non-Refinery Flares	0.37	1.39	1.01	1.39
CMB-04	Emission Reductions From Restaurant Burners and Residential Cooki	0.00	0.88	0.41	0.88
FUG-01	Improved Leak Detection and Repair	2.03	0.00	0.00	0.00
CTS-01	Further Reduction from Coatings, Solvents, Adhesives & Lubricants	1.01	0.00	0.00	0.00
BCM-01	Further Emission Reductions from Commercial Cooking	0.00	0.00	0.00	0.00
BCM-10	Emission Reduction from Greenwaste Composting	1.50	0.00	0.00	0.00
ARB-LDV	On-Road Light Duty Vehicles	0.00	0.00	0.00	0.00
ARB-HDV	On-Road Heavy Duty Vehicles	0.00	0.00	0.00	0.00
CP	Consumer Products	0.00	0.00	0.00	0.00
FIS-AIRC	Federal/International - Aircrafts	0.00	0.00	0.00	0.00
FIS-LOCO	Federal/International - Locomotives	0.00	0.00	0.00	0.00
MOB-10	Extension of the SOON Provision	0.00	1.91	1.18	1.30
MOB-11	Extended Exchange Program	0.00	2.48	44.71	2.13
MOB-14a	MOB-14 (Future Project Funding) - School Buses	0.00	0.17	0.01	0.18
MOB-14c	MOB-14 (Future Project Funding) - Cargo Handling Equipment	0.00	0.17	2.33	0.17
MOB-14d	MOB-14 (Future Project Funding) - Freight Locomotives - Road Haul	0.00	0.05	0.02	0.05
MOB-14e	MOB-14 (Future Project Funding) - Heavy Duty Diesel Trucks (>1400	0.00	4.24	0.78	4.35
Grand Total (with potential overlapping)		6.10	20.83	65.75	20.92

³ This table is included to be consistent with the format presented in the 2016 and previous AQMPs. However, the reductions shown in this table is calculated based on target control efficiency, which was not used to assist the development of control strategy or to demonstrate attainment. The emission reductions listed in table A of the previous page represents the reductions used for attainment.

EMISSION SUMMARY FOR
(POINT, AREA, MOBILE SOURCE, AND OFF-ROAD MV)

BASELINE EMISSIONS

	VOC	NOx	CO	NO2
Point source	31.65	7.19	33.54	7.19
Area source	188.07	27.63	119.03	35.65
RECLAIM	0.00	14.90	0.00	14.90
Total Stationary	219.73	49.72	152.57	57.74
On-road	71.40	116.78	490.38	122.57
Off-road	87.61	103.42	587.59	88.45
Aircraft	3.92	16.91	40.52	16.91
TOTAL	382.66	286.83	1271.06	285.68

EMISSION REDUCTIONS

Point source	0.54	1.80	2.27	1.80
Area source	5.56	4.93	10.27	6.64
RECLAIM	0.00	0.00	0.00	0.00
Total Stationary	6.10	6.73	12.53	8.44
On-road	0.00	4.56	0.80	4.68
Off-road	0.00	9.30	52.11	7.43
Aircraft	0.00	0.00	0.00	0.00
TOTAL	6.10	20.58	65.44	20.55

REMAINING EMISSIONS

Point source	31.12	5.39	31.27	5.39
Area source	182.51	22.70	108.77	29.01
RECLAIM	0.00	14.90	0.00	14.90
Total Stationary	213.63	42.99	140.04	49.29
On-road	71.40	112.22	489.59	117.89
Off-road	87.61	94.12	535.48	81.03
Aircraft	3.92	16.91	40.52	16.91
TOTAL	376.57	266.25	1205.62	265.13
NSR/Set-Aside	4.62	3.08	0.00	3.08
Public Funding	0.00	0.00	0.00	0.00

GRAND TOTAL (T/D)	381.19	269.33	1205.62	268.21
Mobility Adjustments (3)	0.00	0.00	0.00	0.00

- (1) Emission reductions for individual measures were estimated based on the sequence of listing contained here. When the sequence changes, reductions from each measure could be affected, but the net total remain the same. The purpose of this table is to estimate total emission reductions without overlapping or double-counting between measures.
- (2) Emission reductions for individual measures were estimated in the absence of other measures. Therefore, the sequence of listing does not affect the reduction estimates. The purpose of this table is to provide emission reduction estimates for Appendix IV control measure summary tables as well as cost effectiveness analysis.
- (3) Mobility Adjustment includes TCM-01, ATT-01, ATT-02, ATT-05 and adjustments are reflected in the CEPA baseline beyond year 2000.

EMISSION SUMMARY BY AGENCY ⁴ EPA, CARB AND SCAQMD

BASELINE EMISSIONS BASE EMISSIONS	VOC	NOx	CO	NO2
EPA	17.76	76.06	204.53	75.67
CARB	242.26	163.26	914.52	154.03
SCAQMD (1)	122.63	47.51	152.01	55.97
TOTAL (2)	382.65	286.83	1271.06	285.67
EMISSION REDUCTIONS				
EPA	0.00	2.33	3.66	2.32
CARB	1.27	11.78	49.29	9.98
SCAQMD	4.82	6.48	12.48	8.24
TOTAL	6.09	20.59	65.43	20.54
REMAINING EMISSIONS				
EPA	17.76	73.73	200.87	73.35
CARB	240.99	151.48	865.23	144.05
SCAQMD (1)	117.81	41.03	139.53	47.73
TOTAL (2)	376.56	266.24	1205.63	265.13

- (1) SCAQMD figures include RECLAIM
(2) Totals do not include the line items

⁴ The agency responsibility is based on the allocation of regulatory authority, but does not reflect the CARB's 2016 SIP strategy.



South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

SUBJECT: NOTICE OF EXEMPTION FROM THE CALIFORNIA ENVIRONMENTAL QUALITY ACT

PROJECT TITLE: UPDATED 1-HOUR OZONE STANDARD ATTAINMENT DEMONSTRATION FOR THE SOUTH COAST AIR BASIN

Pursuant to the California Environmental Quality Act (CEQA) Guidelines, the South Coast Air Quality Management District (SCAQMD) is the Lead Agency and has prepared a Notice of Exemption for the project identified above. SCAQMD staff has reviewed the proposed project pursuant to: 1) CEQA Guidelines Section 15002(k) - General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA; and 2) CEQA Guidelines Section 15061 - Review for Exemption, procedures for determining if a project is exempt from CEQA.

The project provides an update to the attainment demonstration for the federal 1979 1-hour ozone standard that was included in the 2016 Air Quality Management Plan (AQMP). The emissions inventory in the updated attainment demonstration is based on the final emissions inventory in the 2016 AQMP in order to be consistent with the attainment demonstrations of the 8-hour ozone and PM 2.5 standards. The updated attainment demonstration also includes revised air quality modeling and an updated attainment strategy for meeting the 1-hour ozone standard. The updated attainment strategy relies only on SCAQMD's proposed control measures in the 2016 AQMP, based on the expectation that progress in emission reductions targeted toward attainment of the 1997 8-hour ozone standard by 2023 will ensure attainment of the 1-hour ozone standard by 2022. As such, emission reductions from the California Air Resources Board's State Implementation Plan (SIP) strategies, including federal Clean Air Act Section 182(e)(5) measures ("black box" measures), are not needed to attain the 1-hour ozone standard. The updated attainment strategy successfully demonstrates attainment of the 1-hour ozone standard by 2022.

SCAQMD staff has determined that it can be seen with certainty that there is no possibility that the proposed project may have a significant adverse effect on the environment. Therefore, the project is considered to be exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Activities Covered by General Rule. Furthermore, the proposed attainment demonstration updates are considered categorically exempt because they are considered actions to protect or enhance the environment pursuant to CEQA Guidelines Section 15308 – Actions by Regulatory Agencies for Protection of the Environment. A Notice of Exemption has been prepared pursuant to CEQA Guidelines Section 15062 – Notice of Exemption. If the project is approved, the Notice of Exemption will be filed with the county clerks of Los Angeles, Orange, Riverside and San Bernardino counties.

Any questions regarding this Notice of Exemption should be sent to Luke Eisenhardt (c/o Planning, Rule Development and Area Sources) at the above address. Mr. Eisenhardt can also be reached at (909) 396-2324. Mr. Michael Krause is also available at (909) 396-2706 to answer any questions regarding the proposed project.

Date: October 9, 2018

Signature: 
 Barbara Radlein
 Program Supervisor, CEQA Section
 Planning, Rules, and Area Sources

NOTICE OF EXEMPTION

To: County Clerks Counties of Los Angeles, Orange, Riverside and San Bernardino	From: South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, CA 91765
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Project Title: Updated 1-Hour Ozone Standard Attainment Demonstration For The South Coast Air Basin

Project Location: The location of the project is in SCAQMD's jurisdiction over the four-county South Coast Air Basin which includes all of Orange County and the non-desert portions of Los Angeles, Riverside and San Bernardino counties.

Description of Nature, Purpose, and Beneficiaries of Project: SCAQMD staff is proposing an update to the attainment demonstration for the federal 1979 1-hour ozone standard that was included in the 2016 Air Quality Management Plan (AQMP) for the South Coast Air Basin. The project would: 1) update the emissions inventory to be consistent with final emissions inventory used for the attainment demonstrations of the 8-hour ozone and PM2.5 standards in the 2016 AQMP; 2) revise the air quality modeling ; and 3) update the attainment strategy for meeting the 1-hour ozone standard by removing emission reductions from CARB's SIP strategies, including federal Clean Air Section 182(e)(5) measures ("black box" measures) since they are not needed to attain the 1-hour standard because the updated attainment demonstration relies only on SCAQMD's control measures in the 2016 AQMP, based on the expectation that progress in emission reductions targeted toward the attainment of the 1997 8-hour ozone standard by 2023 will ensure attainment of the 1-hour ozone standard by 2022. The updated attainment strategy successfully demonstrates attainment of the 1-hour ozone standard by 2022.

Public Agency Approving Project: South Coast Air Quality Management District	Agency Carrying Out Project: South Coast Air Quality Management District
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Exempt Status:

CEQA Guidelines Section 15061(b)(3) – Activities Covered by General Rule
CEQA Guidelines Section 15308 – Actions By Regulatory Agencies For Protection Of The Environment (Class 8 Categorical Exemption)

Reasons why project is exempt: SCAQMD staff has reviewed the proposed project pursuant to: 1) CEQA Guidelines Section 15002(k) - General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA; and 2) CEQA Guidelines Section 15061 - Review for Exemption, procedures for determining if a project is exempt from CEQA. Because the update to the 1-hour ozone standard attainment demonstration is not proposing to add new or delete any control measures from the 2016 AQMP, but merely presents updated analyses and other changes that do not have the potential to cause a direct or indirect adverse impact on the environment, SCAQMD staff has determined that it can be seen with certainty that there is no possibility that the proposed project may have a significant adverse effect on the environment. Therefore, the project is considered to be exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Activities Covered by General Rule. Furthermore, the proposed attainment demonstration updates are considered categorically exempt because they are considered actions to protect or enhance the environment pursuant to CEQA Guidelines Section 15308 – Actions by Regulatory Agencies for Protection of the Environment. A Notice of Exemption has been prepared pursuant to CEQA Guidelines Section 15062 – Notice of Exemption. If the project is approved, the Notice of Exemption will be filed with the county clerks of Los Angeles, Orange, Riverside and San Bernardino counties.

Date When Project Will Be Considered for Approval (subject to change):
SCAQMD Governing Board Hearing: November 2, 2018; SCAQMD Headquarters

CEQA Contact Person: Mr. Luke Eisenhardt	Phone Number: (909) 396-2324	Email: leisenhardt@aqmd.gov	Fax: (909) 396-3982
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Rule Contact Person: Mr. Michael Krause	Phone Number: (909) 396-2706	Email: mkrause@aqmd.gov	Fax: (909) 396-3324
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Date Received for Filing: _____ **Signature:** _____ *(Signed Upon Board Approval)*
Barbara Radlein
Program Supervisor, CEQA Section
Planning, Rule Development & Area Sources