
Appendix 5f:

Oil and Gas Industry

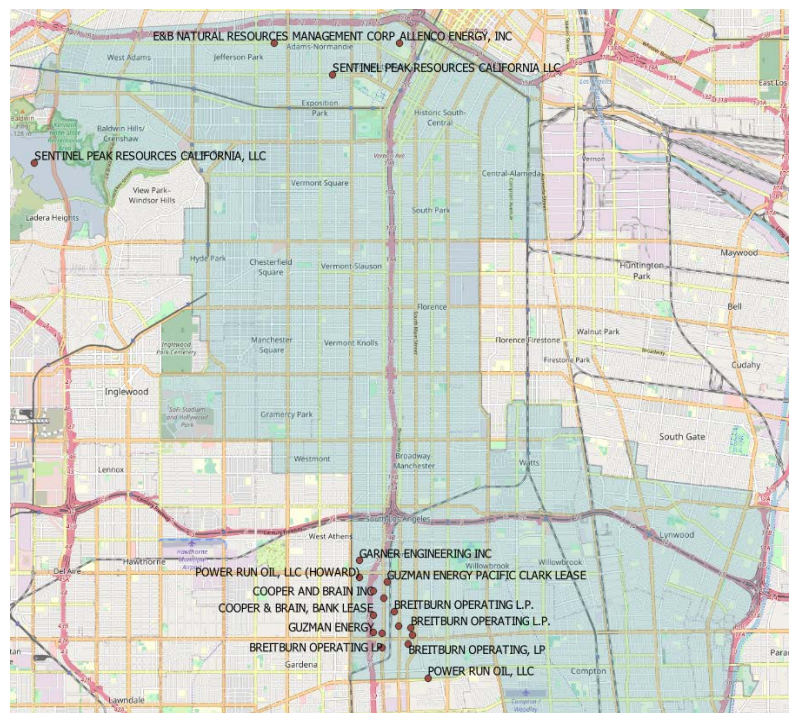
Introduction

During the Community Steering Committee (CSC) meetings, the co-leads helped lead discussions to identify air quality concerns and actions for this Community Emissions Reduction Plan (CERP). One of the concerns raised by the South Los Angeles (SLA) CSC is emissions resulting from oil and gas operations conducted at drill sites and oil wells. The CSC identified four oil and gas facilities as locations of concern due to the proximity of these facilities to nearby residences. The SLA CSC expressed concern that there is limited transparency of monitoring data and enforcement activity findings, such as Notices of Violations (NOVs). This appendix provides additional supporting information for Chapter 5f: Oil and Gas Industry, including an overview of applicable facilities, emissions, and regulatory efforts. The overview of regulatory efforts includes a summary of regulatory authority, air monitoring, enforcement, and incentive efforts to address emissions from and exposure to oil and gas operations.

Community Impacts from Oil and Gas Facilities

There are 19 oil and gas facilities with active South Coast Air Quality Management District (South Coast AQMD) permits,¹ as shown in **Figure A5f-1**. During CERP development, this category of facilities was referred to as “Mineral Processes.” These facilities have a classification within the North American Industry Classification System (NAICS)² as code 211120: Crude Petroleum Extraction and 211130: Natural Gas Extraction.³

Figure A5f-1: Map of Oil and Gas Facilities with Active South Coast AQMD Permits in SLA



¹ The total number of facilities applicable to this air quality priority was arrived at using multiple sources, such as permit type, technical specialty (TS) number, and NAICS codes. TS refers to the internal code South Coast AQMD inspectors use to determine the appropriate inspection team. Please refer to Appendix 4: Enforcement Overview and History for more information on South Coast AQMD inspection teams.

² United States Census Bureau, North American Industry Classification System, <https://www.census.gov/naics/>

³ The NAICS designation is not provided by South Coast AQMD. Rather, the NAICS designation is provided by the owner or operator within the permit application submitted to South Coast AQMD for any applicable equipment.

Emissions from Oil and Gas Industry

Emissions information for SLA oil and gas facilities is available in Chapter 2d: Emissions and Source Attribution Analysis and Appendix 2d: Source Attribution. Oil and gas production, well maintenance, and stimulation activities may release emissions such as volatile organic compounds (VOCs), some of which are toxic air contaminants (TACs), nitrogen oxides (NO_x), methane, diesel particulate matter (DPM), fugitive dust, and carbon monoxide (CO). **Figure A5f-2** provides examples of oil and gas emission sources.

Figure A5f-2: Examples of Oil and Gas Emission Sources



VOCs are chemicals containing carbon that readily evaporate. In the absence of appropriate control measures, these compounds will ultimately end up in the atmosphere. Subsequent chemical reactions of VOCs in the atmosphere can form surface level ozone pollution and particulate matter. Ozone is formed by the reaction of VOCs with NO_x in the presence of sunlight. Oil is composed primarily of hydrocarbons (VOCs) with five or more carbon atoms with an average composition of alkanes (30 percent), cycloalkanes (50 percent), aromatics (15 percent), and other (5 percent).

Some hydrocarbon components classified as VOC emissions are TACs including benzene, toluene, ethylbenzene, and xylene. People exposed to TACs at sufficient concentrations and durations may have an increased chance of getting cancer or experiencing other serious health effects. These health effects can include damage to the immune system, as well as neurological,

reproductive (e.g., reduced fertility), developmental, respiratory and other health problems.⁴ Benzene, for example, is a hydrocarbon component of VOC emissions that is known to be a human carcinogen.⁵ Based on emissions from 2019,⁶ four percent of all VOC emissions in SLA are from the major source categories of Fuel Combustion and Petroleum Production and Marketing (**Table A5f-1**).

NOx is a family of gases that are highly reactive with other pollutants to form both ground-level ozone and fine particulate matter (PM2.5). The chemical reactions that form ozone are highly complex and depend not only on NOx and VOC levels, but also on the ratio of VOC to NOx concentrations. Ground-level ozone can harm the respiratory system.

The focus of the Assembly Bill 617 (AB 617) program is to reduce TACs and criteria air pollutants, but other pollutants, such as greenhouse gases like methane, also have the potential to impact the community. Methane is the primary component of natural gas and is present during crude oil extraction. Methane is a precursor gas to tropospheric ozone and has a high global warming potential.⁷ Methane can be emitted during the production, processing, storage, and transportation of crude oil and gas.

Table A5f-1: Emissions from Oil and Gas Industry Sources in SLA in 2019⁶

Emission Source	VOC (tpy)*	NOx (tpy)*	CO (tpy)*	Benzene (tpy)*
Fuel Combustion				
Oil and Gas Production (combustion)	0.64	3.32	7.41	0.02
Petroleum Refining (combustion)	0.0	0.0	0.0	0.0
Petroleum Production and Marketing				
Oil and Gas Production	46	0.06	0.32	0.49
Petroleum Refining	1.2	0.0	0.0	0.0
Petroleum Marketing	150	0.0	0.0	0.75
Other (Petroleum Production and Marketing)	0.0	0.0	0.0	0
Total Oil and Gas Categories	197	3.4	7.7	1.3
All Other Stationary and Area Sources	6,298	3,287	682	8.6
All Mobile Sources	2,169	2,649	23,450	57
Total	5,459	3,339	25,205	67

⁴ U.S. EPA, Health and Environmental Effects of Hazardous Air Pollutants, <https://www.epa.gov/haps/health-and-environmental-effects-hazardous-air-pollutants>

⁵ South Coast AQMD, Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning, <http://www.aqmd.gov/docs/default-source/planning/air-quality-guidance/complete-guidance-document.pdf>

⁶ Source attribution information may be found in Appendix 2d.

⁷ U.S. EPA, Understanding Global Warming Potentials, <https://www.epa.gov/ghgemissions/understanding-global-warming-potentials>

*Emissions were calculated and presented in tons per day for criteria air pollutants and pounds per day for TACs in Chapter 2d and Appendix 2d.

Regulatory Efforts

Regulatory Authority

Air quality regulations to reduce air pollution from the oil and gas industry are set forth by city agencies, local air districts (e.g., South Coast AQMD), and state agencies (e.g., CARB, California Geologic Energy Management Division (CalGEM)⁸). Local land-use agencies can establish long-term goals, ordinances, and policies for land use that can also have an impact on local air pollution (e.g., Los Angeles County Draft Oil Well Ordinance⁹).

State Actions

Several state rules apply to sources of pollution from oil and gas facilities within this community (**Table A5f-2**).

⁸ The California Geologic Energy Management Division (CalGEM) was previously known as previously known as the Division of Oil, Gas, and Geothermal Resources (DOGGR).

⁹ Los Angeles County Department of Regional Planning, Draft Title 22 Oil Well Ordinance, https://planning.lacounty.gov/assets/upl/data/2020-04-13-draft_oil_well_ordinance.pdf

Table A5f-2: State Programs to Address Oil and Gas Facilities

Program	Purpose
CARB Oil and Gas Regulation ¹⁰	<ul style="list-style-type: none"> • A statewide regulation to establish greenhouse gas emission standards for crude oil and natural gas facilities
CalGEM Public Health Rule ¹¹	<ul style="list-style-type: none"> • If enacted in its current draft form, the proposed rule would require a 3,200-foot setback zone in the construction of new oil wells from sensitive receptors, such as residences, education resources, and health care facilities
CalGEM Idle Well Program ¹²	<ul style="list-style-type: none"> • A statewide regulation that requires testing and management for idle well designation, repair, or permanent sealing and closing to protect public safety and the environment from the potential threats posed by idle wells
Assembly Bill 2588 (AB 2588) – Air Toxics Hot Spots Program ^{†,13}	<ul style="list-style-type: none"> • A statewide program that addresses TACs pollution from certain facilities by: <ul style="list-style-type: none"> ○ Collecting TACs emissions information ○ Identifying facilities that have local impacts ○ Providing public information about TACs impacts from facilities • Reducing significant TACs risks from facilities

† Applies to facilities that have estimated annual emissions of four or more tons of either sulfur oxides (SO_x), VOCs, NO_x, specific organics (SPOG), or particulate matter (PM), or emissions of 100 tons per year or more of carbon monoxide (CO).

California Air Resources Board

CARB has authority over greenhouse gas emission standards for stationary sources, such as crude oil and natural gas facilities. Through CARB's Oil and Gas Regulation,¹⁰ owners or operators of oil and natural gas facilities are required to conduct quarterly leak detection and repair (LDAR) surveys by monitoring components and repairing detected leaks within a specified time frame. CARB has authority to inspect oil and gas facilities to verify compliance with the Oil and Gas Regulation, in addition to any of their other regulations that may be applicable to equipment found on site (e.g., off-road equipment, PERP equipment). South Coast AQMD has authority to implement and enforce the Oil and Gas Regulation

¹⁰ CARB, Subarticle 13: Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities, <https://ww2.arb.ca.gov/sites/default/files/2020-03/2017%20Final%20Reg%20Orders%20GHG%20Emission%20Standards.pdf>

¹¹ CalGEM, Public Health Rulemaking, <https://www.conservation.ca.gov/calgem/Pages/Public-Health.aspx>

¹² CalGEM, Idle Well Program, https://www.conservation.ca.gov/calgem/idle_well

¹³ South Coast AQMD, Air Toxics "Hot Spots" Program (AB 2588), <https://www.aqmd.gov/home/rules-compliance/compliance/toxic-hot-spots-ab-2588>

through a memorandum of agreement that gives local air districts delegated authority to enforce CARB rules.¹⁴

California Geologic Energy Management Division

CalGEM is a state agency that regulates oil and gas facilities, requires owners and operators to report the status of their wells, and has the authority to inspect oil and gas facilities. The data is available through a database of active, idle, and abandoned wells throughout the state of California.¹⁵ Based on records from CalGEM's database (updated in 2015), there are approximately 6,100 oil, gas, and geothermal wells that are active or idle in the Los Angeles, Riverside, San Bernardino, and Orange County regions. CalGEM's program includes idle, abandoned, geothermal and water injection wells, which are not registered by South Coast AQMD. Active oil wells are limited to wells that actively withdraw oil. Idle wells are those that have not been used for two years or more and have not yet been sealed and closed (abandoned).

Local Governments

Local governments have the flexibility to address air quality issues, such as those resulting from the oil and gas industry, through ordinances and land use. Land use refers to how certain areas of land are classified for development and use. Land-use data is often used for city or county planning, such as the placement of housing developments and transportation hubs. Cities, counties, and unincorporated areas regulate oil and gas operations in varying degrees through their land-use and zoning authorities to aid in protecting and minimizing their negative impacts on public health, safety, and the environment. For example, the Los Angeles County Department of Regional Planning released a draft Oil Well Ordinance in April 2020 to update permit requirements and development and operating standards for existing and new oil wells and accessory facilities in unincorporated Los Angeles County.¹⁶ South Coast AQMD makes referrals to land-use agencies, public works departments, and other responsible agencies regarding enforcement of city or county ordinances related to oil and gas industry practices.

Cities often carry out health risk assessments to determine health effects of industries and report on findings with suggestions on possible ways to improve conditions. One example can be found in a City of Los Angeles July 29, 2019 report¹⁷ which suggested that one way to improve health oversight is “[Los Angeles] County could deputize the LAFD with health officer authority for oversight and inspections of oil and gas facilities within the City. The action would be proactive

¹⁴ CARB, Memorandum of Agreement between the California Air Resources Board and the South Coast Air Quality Management District Regarding Implementation and Enforcement of Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities, <https://ww2.arb.ca.gov/sites/default/files/2020-03/South%20Coast%20MOA.pdf>

¹⁵ CalGem, Well Finder, <https://www.conservation.ca.gov/calgem/Pages/Wellfinder.aspx>

¹⁶ Los Angeles County Department of Regional Planning, Oil Well Ordinance, <https://planning.lacounty.gov/oilwell>

¹⁷ City of Los Angeles Clerk, Council File No 17-0447, Feasibility of Amending Current City Land Use Codes in Connection With Health Impacts at Oil and Gas Wells and Drill Sites, https://clkrep.lacity.org/onlinedocs/2017/17-0447_rpt_BPW_07-29-2019.pdf

for future incidents [...and] would allow for our local emergency services agency, LAFD, to have more oversight and authority in the event an emergency related to oil and gas operations.”

South Coast AQMD

The CSC has expressed concerns relating to particular oil and gas facilities, their proximity to residences, and odors and fugitive emissions from these types of facilities. Due to the geography of the region, this equipment and point sources of emissions in the oil and gas industry are often located in urban areas, and sometimes located within close proximity to residential and other sensitive receptors, as is the case in several areas within SLA. South Coast AQMD is given broad authority to regulate air pollution from "all sources, other than emissions from motor vehicles."¹⁸ The term "air pollutant" includes odors.¹⁹ Therefore, South Coast AQMD may regulate to control air pollution, including odors, from oil and gas wells. Rule 1148²⁰ establishes VOC²¹ emission limits for steam drive wells. Steam drive wells combine oil production and steam injection wells to extract oil. In some cases, these operations are connected to a vapor control system. Both uncontrolled and controlled steam drive wells are limited to 4.5 pounds per day of reactive organic gases (ROG)²² emissions. Rule 1148.1²³ establishes VOC and toxic emission limits from wellheads, well cellars, and handling equipment. The regulation includes a requirement that facilities submit an Odor Mitigation Plan if an odor nuisance occurs on two or more days, or if there are three confirmed odor events within a six-month period. Rule 1148.2²⁴ establishes informational requirements for oil and gas wells. Rule 1148.2 requires notification when conducting well drilling, well completion, or well reworks. Operators must notify South Coast AQMD at least 48 hours prior to the start of drilling. Chemical ingredients used in drilling are also required to be reported. In addition to the Rule 1148 series, applicable South Coast AQMD rules

¹⁸ California Health and Safety Code, Section 40000

¹⁹ California Health and Safety Code, Section 39013

²⁰ South Coast AQMD, Rule 1148 – Thermally Enhanced Oil Recovery Wells, <http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1148.pdf>

²¹ South Coast AQMD Rule 102 – Definition of Terms, defines VOCs as “any volatile compound of carbon, excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and exempt compounds.” <http://www.aqmd.gov/docs/default-source/rule-book/reg-i/rule-102-definition-of-terms.pdf>

²² South Coast AQMD Rule 1148 defines ROGs as “any gaseous chemical compound which contains the element carbon; excluding carbon monoxide, carbon dioxide, carbonic acid, carbonates and metallic carbides; and excluding methane, 1,1,1-trichloroethane, methylene chloride, trifluoromethane and chlorinated-fluorinated hydrocarbons.”

²³ South Coast AQMD, Rule 1148.1 – Oil and Gas Production Wells, <http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1148-1.pdf>

²⁴ South Coast AQMD, Rule 1148.2 – Notification and Reporting Requirements for Oil and Gas Wells and Chemical Suppliers, <http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1148-2.pdf>

for the oil and gas industry include, but are not limited to, Rule 463,²⁵ Rule 1118.1,²⁶ Rule 1173,²⁷ and Rule 1176.²⁸

²⁵ South Coast AQMD, Rule 463 – Organic Liquid Storage, <http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-463.pdf>

²⁶ South Coast AQMD, Rule 1118.1 – Control of Emissions from Non-Refinery Flares, <https://www.aqmd.gov/docs/default-source/rule-book/reg-xi/R1118-1.pdf>

²⁷ South Coast AQMD, Rule 1173 – Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants, <http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1173.pdf>

²⁸ South Coast AQMD, Rule 1176 – VOC Emissions from Wastewater Systems, <http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1176.pdf>

Figure A5f-3, Table A5f-3, and Table A5f-4 provide an overview of South Coast AQMD rules that may be applicable to oil and gas facilities.

Additionally, South Coast AQMD's Rule 402²⁹ and Rule 203³⁰ are general rules that can be applied to the oil and gas industry. Rule 402 prohibits the release of air contaminants in such quantities that causes nuisance to a considerable number of persons or to the public.

²⁹ South Coast AQMD, Rule 402 – Nuisance, <http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-402.pdf>

³⁰ South Coast AQMD, Rule 203 – Permit to Operate, <http://www.aqmd.gov/docs/default-source/rule-book/reg-ii/rule-203.pdf>

Figure A5f-3: Overview of Oil and Gas Well Regulations

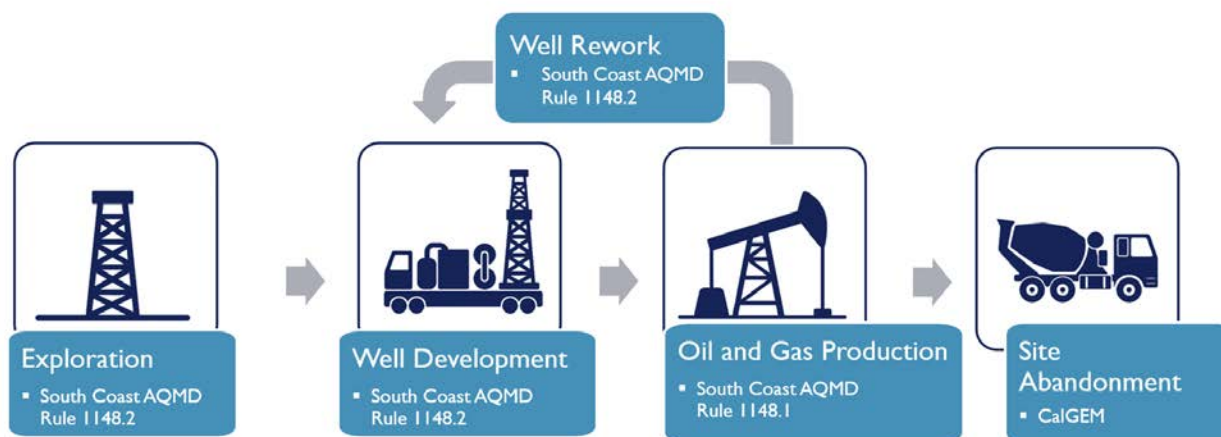


Table A5f-3: South Coast AQMD Rules to Address the Oil and Gas Industry

Rule	Source Category	Air Pollutant	Purpose	Applicability	General Provisions
463 ²⁵	Stationary above-ground tanks	VOCs	<ul style="list-style-type: none"> Reduce emissions of VOC from the storage of organic liquids in stationary above-ground tanks 	<ul style="list-style-type: none"> Above-ground stationary tanks with capacity of 19,815 gallons or greater used for storage of organic liquids Above-ground tank with a capacity between 251 gallons and 19,815 gallons used for storage of gasoline 	<ul style="list-style-type: none"> Tank roof requirements Performance requirements Inspection requirements Maintenance requirements Reporting and recordkeeping requirements
1118.1 ²⁶	Non-refinery flares	NOx, VOCs	<ul style="list-style-type: none"> Reduce NOx and VOC emissions from flaring produced gas, digester gas, landfill gas, and other combustible gases or vapors Encourage alternatives to flaring 	<ul style="list-style-type: none"> Owners and operators of flares that require a South Coast AQMD permit at non-refinery facilities, such as oil and gas production facilities, wastewater treatment facilities, landfill, and organic liquid handling facilities 	<ul style="list-style-type: none"> NOx, VOC, and CO emissions limits Flare throughput reduction or flare or flare station replacement or modification Source testing Annual capacity threshold compliance Monitoring, recordkeeping, and reporting
1148 ²⁰	Thermally enhanced oil recovery wells	ROGs	<ul style="list-style-type: none"> Establish ROG limits for the operation of steam drive wells 	<ul style="list-style-type: none"> Operators of any new steam drive well, non-steam drive wells converted to steam drive wells Existing oil production wells operated as a steam drive well 	<ul style="list-style-type: none"> ROG emission limits for wells with and without vapor control systems Annual compliance testing of vapor control systems

Rule	Source Category	Air Pollutant	Purpose	Applicability	General Provisions
1148.1 ²³	Oil and gas production wells	VOCs, TACs, Total Organic Compounds (TOCs)	<ul style="list-style-type: none"> •Reduce VOC emissions from the operation and maintenance of wellheads, well cellars, and the handling of produced gas at oil and gas production facilities •Assist in reducing regional ozone levels and to prevent public nuisance and possible detriment to public health caused by exposure to such emissions 	<ul style="list-style-type: none"> • Onshore oil producing wells, well cellars, and produced gas handling operation and maintenance activities at onshore facilities where petroleum and processed gas are produced, gathered, separated, processed, and stored 	<ul style="list-style-type: none"> •TOC concentration limits •Operational and maintenance standards (e.g., preventative measures regarding spilling organic liquid) •Odor mitigation plan •Operator inspection •Specific cause analyses required for confirmed odor or oil deposition events at facilities within 1,500 feet of a sensitive receptor •Implementation of an approved Odor Mitigation Plan for facilities with continuing odor issues
1148.2 ²⁴	Oil and gas wells and chemical suppliers		<ul style="list-style-type: none"> •Gather air quality-related information on oil and gas well drilling, well completion, and well reworks 	<ul style="list-style-type: none"> •Any operator of an onshore oil or gas well that is conducting oil or gas well drilling, well completion, or well reworks 	<ul style="list-style-type: none"> •Notification requirements •Reporting requirements
1173 ²⁷	Atmospheric process pressure relief devices (PRDs)	VOCs	<ul style="list-style-type: none"> •Control VOC leaks from components and releases from PRDs 	<ul style="list-style-type: none"> •Components at refineries, chemical plants, lubricating oil and grease re-refiners, marine terminals, oil and gas production fields, natural gas processing plants and pipeline transfer stations 	<ul style="list-style-type: none"> •Operator identification, inspection, and maintenance requirements •Leak standards •Recordkeeping and reporting requirements •Atmospheric process PRD requirements •Test methods
1176 ²⁸	Wastewater systems	VOCs	<ul style="list-style-type: none"> •Limit VOC emissions from wastewater systems 	<ul style="list-style-type: none"> • Wastewater systems and associated control equipment located at petroleum refineries, on-shore oil production fields, off-shore oil production platforms, chemical plants, and industrial facilities 	<ul style="list-style-type: none"> •Identification requirements for petroleum refineries and facilities other than petroleum refineries •Operation and control requirements •Inspection, monitoring, and maintenance requirements •Recordkeeping, reporting, and verification of records requirements •Test methods

Table A5f-4: Relevant Rules for Oil and Gas Facilities in Development or Amendment Process*

Rule	Source Category	Air Pollutant	Purpose
463 ³³	Stationary above-ground tanks	VOCs	<ul style="list-style-type: none"> •To address the current test method and improve the effectiveness, enforceability, and clarity of the rule •To ensure consistency with Rule 1178³¹
1148.1 ³³	Oil and gas production wells	VOCs, TACs, TOCs	<ul style="list-style-type: none"> •To further reduce emissions from operations, implement early leak detection, odor minimization plans, and enhanced emissions and chemical reporting from oil and drilling sites
1148.2 ³³	Oil and gas wells and chemical suppliers		<ul style="list-style-type: none"> •To evaluate the applicability of well activities, improve notifications of well working activities, and address other issues
1180.1 ³³	Non-petroleum refineries and facilities	Criteria air pollutants, VOCs, metals, and other compounds	<ul style="list-style-type: none"> •To establish fenceline and community monitoring requirements for non-petroleum refineries and facilities that are not currently included in Rule 1180³²

*On the rule and control measure forecast or under the rule development process as of May 2022³³

Of the 19 oil and gas facilities identified above, there are 16 facilities with multiple wells on site that are inspected annually under South Coast AQMD's existing regulatory programs. There may be additional oil and gas facilities within the SLA community boundary that are applicable to this air quality priority but may not require South Coast AQMD permits. Such facilities include abandoned wells and sites with small, miscellaneous equipment. These facilities may be subject to other governmental agency ordinances or laws, such as the City of Los Angeles or the County of Los Angeles.

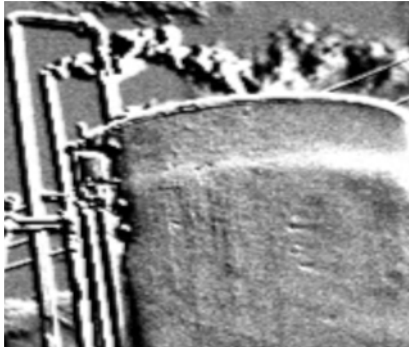
Fugitive emissions may result when leaks occur at equipment components such as valves, flanges, and pump seals. Therefore, South Coast AQMD regulations include requirements to minimize fugitive emissions from oil and gas facilities. Some rules, such as Rule 1148.1, will undergo review to determine if additional opportunities are available to update Best Available Control Technology and Best Available Retrofit Control Technology (BACT and BARCT, respectively) for control of emissions from oil and gas production equipment. As preventive measures to reduce fugitive emissions, applicable oil and gas rules may also include requirements for leak detection and repair (LDAR). Based on data from ambient monitors, leaks may be identified more quickly minimizing fugitive emissions and reducing the potential impacts to the surrounding areas.

³¹ South Coast AQMD, Rule 1178 – Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities, <http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1178.pdf>

³² South Coast AQMD, Rule 1180 – Refinery Fenceline and Community Air Monitoring, <http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/r1180.pdf>

³³ South Coast AQMD includes a Rule and Control Measure Forecast as a standing agenda item at each Governing Board meeting. The May 2022 Rule and Control Measure Forecast is available at: <http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2022/2022-may6-019.pdf>

Figure A5f-4: Petroleum Storage Tank Leak Visualized by FLIR Camera



Air Monitoring

South Coast AQMD

Oil and gas operations are associated with emissions of VOCs, including BTEX (benzene, toluene, ethylbenzene, xylenes), particulate matter, NO_x, and other pollutants, which have the potential to impact nearby communities. The monitoring strategy to study and characterize emissions related to this air quality priority consists of measurements using a mobile platform capable of monitoring a number of different gases commonly emitted by oil and gas operations, including BTEX, total alkanes, and methane. Initial mobile measurement surveys will be conducted near the drilling sites within the

community and in areas of concern identified by the CSC as potentially impacted by oil and gas operations. Measurements made during these surveys will be used both to characterize air pollutants concentrations in these areas and to identify any localized enhancements that could be indicative of leaks. These surveys are frequently conducted in coordination with South Coast AQMD inspectors, who use Forward Looking InfraRed (FLIR) cameras (**Figure A5f-4**) and Toxic Vapor Analyzers (TVAs) to confirm and determine the location of leaks. Findings from these surveys will also be used to determine if additional measurements are needed. In addition to initial mobile measurement surveys, South Coast AQMD will also work with the CSC and collaborate with other agencies to determine whether air monitoring should be conducted under certain conditions or during certain well activities. South Coast AQMD staff will also work with the CSC to identify ways to support citizen scientists engaged in air monitoring in their communities. This effort will include a pilot study working with community members to use a handheld VOC monitor to make measurements near oil and gas sites at times when increased activity, odors, or other concerns are noted.

California Air Resources Board

CARB is implementing the Study of Neighborhood Air near Petroleum Sources (SNAPS) program to better understand potential impacts of criteria pollutants and TACs in neighborhoods near oil and gas activities. The program includes limited-term (one-year), intensive air quality measurements with a particular focus on oil production facilities.³⁴ CARB selected Baldwin Hills and communities surrounding the Inglewood Oil Field for monitoring under the SNAPS program. Mobile monitoring will complement stationary air quality monitoring at this site. The SNAPS program had a delayed deployment at this location due to the pandemic, but CARB staff plan to begin air monitoring near the Inglewood Oil Field in early 2022.

³⁴ CARB, Study of Neighborhood Air near Petroleum Sources (SNAPS), <https://ww2.arb.ca.gov/our-work/programs/study-neighborhood-air-near-petroleum-sources>

Compliance and Enforcement

Enforcement information for SLA oil and gas facilities is available in Chapter 4: Enforcement Overview and History and Appendix 4: Enforcement Overview and History.

South Coast AQMD inspectors regularly conduct enforcement activities at oil and gas facilities within SLA. These activities fall into two categories:

- Those initiated by South Coast AQMD, such as routine facility inspections or targeted rule inspections.
- Those prompted by outside parties, such as, complaint investigations, facility notifications, and agency referrals.

While there are many reasons to conduct an inspection, air pollution concerns received directly from community members through public complaints are a very important source of information. All complaints received are assigned to an inspector for investigation. The complaint telephone line is handled by a live attendant during business hours (Monday – Friday) or by a standby system during non-business hours. Complainant information is kept confidential, and while anonymous complaints are accepted, providing contact information is crucial for the inspector to be able to gather any relevant information to conduct an effective investigation. **To report complaints, community members can call 1-800-CUT-SMOG (1-800-288-7664) or file an online complaint at <https://www.aqmd.gov/home/air-quality/complaints>.**

Inspections are generally unannounced so that the inspector can observe a facility conducting normal operations. Inspections are conducted to evaluate the overall compliance status of the facility or to focus on specific aspects of an operation or specific rule or regulation.

If a facility is determined to be out of compliance with air pollution rules or regulations or permit conditions, inspectors will take necessary enforcement action to address the non-compliant activity. There are two types of enforcement actions:

1. A Notice to Comply (NC) may be issued for minor violations found during an inspection or to request additional information.
2. A Notice of Violation (NOV) may be issued for violations of rules or permit conditions. NOVs usually result in a penalty.

If a facility cannot immediately comply with air pollution laws, it may seek a variance from a rule requirement or permit condition by filing a petition and appearing before the South Coast AQMD Hearing Board.³⁵ In cases of ongoing noncompliance, a petition for an Order for Abatement may be brought against the facility, which will seek to require the company to take specific actions or cease operating in violation of South Coast AQMD rules or regulations. These processes serve to ensure that a facility returns to compliance expeditiously while minimizing air quality impacts.

³⁵ Please refer to Appendix 4 for more information regarding the South Coast AQMD Hearing Board.

Since oil and gas facilities have been identified as a community priority, AB 617 CERP actions include enhanced enforcement efforts intended to address SLA community concerns directly, taking community input into account where appropriate. Enhanced enforcement efforts include the actions identified in Chapter 5f: Oil and Gas Industry.

Incentives

For information related to incentives, please refer to Appendix 5a: South Coast AQMD Regulatory Program and Ongoing Efforts.