BOARD MEETING DATE: July 10, 2015 AGENDA NO. 38

PROPOSAL: Amend Rule 1148.1 – Oil and Gas Production Wells

SYNOPSIS: The proposed amendment seeks to provide enforceable mechanisms to reduce odor nuisance potential from emissions associated with oil and gas production facility operations and also updates rule language to promote clarity, consistency and enforceability. The proposed amendment: requires use of odor mitigation best practices; requires facilities located within 1,500 feet of a sensitive receptor to conduct and submit a specific cause analysis for any confirmed odor event; and requires facilities with continuing odor issues to develop and implement an approved Odor Mitigation Plan.

COMMITTEE: Stationary Source, February 20, and April 17, 2015, Reviewed

RECOMMENDED ACTIONS:
Adopt the attached resolution:
1. Certifying the Final Environmental Assessment for Proposed Amended Rule 1148.1 - Oil and Gas Production Wells; and
2. Amending Rule 1148.1 – Oil and Gas Production Wells.

Barry R. Wallerstein, D.Env.
Executive Officer

PF:JW:NB:DO:DM

Background
Rule 1148.1 – Oil and Gas Production Wells was adopted on March 5, 2004 to reduce volatile organic compound (VOC) emissions from well cellars as well as from sources of untreated process gas located at oil and gas production facilities. The rule included requirements for a visual inspection and maintenance program and for controlling untreated produced gas and to prevent venting to atmosphere. An increased awareness of oil and gas production wells due to community concerns over potential

environmental impacts from well stimulation techniques such as hydraulic fracturing and acidizing has resulted in a goal to minimize impacts to nearby residents and sensitive receptors from ongoing operations. In addition, between the years 2010 and 2014, operations at Allenco Energy Inc., an oil and gas production facility located adjacent to several sensitive receptors, had become the subject of close to 300 complaints, over 150 inspections and eighteen Notices of Violation (NOV), including six NOVs for Rule 402 – Nuisance due to odors. This further heightened awareness from the local community and other interested stakeholders, raising interest in pursuing environmental justice measures to both more rapidly respond to and prevent future situations from evolving at similarly located operations.

Proposed amendments to Rule 1148.1 address the operation and maintenance aspects of an oil and gas production facility, rather than the pre-production or stimulation aspects covered under the requirements of Rule 1148.2 - Notification and Reporting Requirements for Oil and Gas Wells and Chemical Suppliers. Currently production wells, primarily due to low emission potential, are registered under Rule 222 - Filing Requirements For Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation II and do not require full permits. However, if these same wells have associated equipment (i.e. separation tanks, wastewater separators), the facility requires a comprehensive analysis under Rule 203 - Permit to Operate, and is subject to Regulation XIII requirements, as applicable.

Proposal

The proposed amendment seeks to provide enforceable mechanisms to reduce odor nuisance potential from emissions associated with oil and gas production facility operations and also updates rule language to promote clarity, consistency and enforceability. The following summarizes key requirements of the proposed amendment:

- Update definition of a Sensitive Receptor for consistency with Rule 1148.2 - Notification and Reporting Requirements for Oil and Gas Wells and Chemical Suppliers and other SCAQMD rules, and include cross-references to other SCAQMD rules and definitions applicable to oil and gas production facilities to provide additional clarity.
- Require facilities to implement the following best odor mitigation practices: post instructions, in English and Spanish, for reporting odor complaints, including the name and contact number for the facility as well as the SCAQMD 1-800-CUT-SMOG complaint hotline number; utilize a rubber grommet designed for drill piping, production tubing or sucker rods to remove excess or free flowing fluid from piping, tubing or rods that are removed during maintenance or replacement activity; and remove accumulated organic liquid from a well cellar as soon as possible but no later than by the end of the day following receipt of three or more complaints verified by SCAQMD personnel within the same day.

- Require facilities with central processing areas that are located within 1,500 feet of a sensitive receptor to operate and maintain a monitoring system that will alarm or notify operators at a central location and to conduct a Specific Cause Analysis and submit a report within 30 days following receipt of written notification of a Confirmed Odor Event or a Confirmed Oil Deposition Event. The required Specific Cause Analysis report includes identification of the equipment or activity associated with the confirmed event and mitigation and corrective actions, including a requirement to conduct additional monthly leak inspections when the specific cause is identified as a leak.
- Require any facility that has received notification of three (3) or more confirmed odor events within a six month period or that has received a notice of violation for Rule 402 – Nuisance for odors must prepare and submit for approval an Odor Mitigation Plan that identifies all potential sources of odor and incorporates additional odor mitigation best practices, including corrective actions identified in any previously submitted Specific Cause Analysis report. Additional best practice considerations include, but are not limited to: continual odor surveillance during rework, repair or maintenance activities, use of enclosures or equivalent while storing any removed drill piping, production tubing, or sucker rods; and shorter repair times following detection of any component leaks.

Lastly, staff has committed to evaluating the use of the SCAQMD web page and other communication mechanisms, including integrated use of Geographic Information Systems, to post and disseminate information to the public related to complaints and related activities at oil and gas production facilities. Staff will also continue to evaluate additional emerging control and monitoring technologies applicable to the industry.

Key Issues

Staff has received perspectives from both the regulated industry and the affected communities associated with odor nuisance potential from the operation and maintenance of oil and gas production facilities. While the regulated industry maintains that these facilities have historically represented low emissions and associated odor nuisance potential – at least no more than other regulated entities, the affected communities, especially those located in close proximity, have voiced concerns over not only the odor-related events that have occurred and their associated health impacts, but also the observed level of response and degree of preventative action taken by both the facilities and the SCAQMD in response to complaints. The proposed amendment is meant to create additional enforcement mechanisms, short of a notice of violation, to provide facilities the opportunity to formally investigate and correct odor and related events before they become public nuisances. In addition, the proposed amendment provides additional communication opportunities to provide assurance to the affected community that preventative and corrective measures are in place.

Public Process

Over the past seven months, staff has worked with several community interest groups as well as the California Independent Petroleum Association through a series of three working group meetings held in separate locations within the communities of Los Angeles and Montebello and in close proximity to the urban-based oil and gas production facilities in the areas. Additional independent discussions were conducted with interested stakeholders. A public workshop was held on April 16, 2015 and a public consultation meeting was conducted on May 28, 2015. Staff has incorporated overall feedback into the proposed amendment.

California Environmental Quality Act (CEQA)

Pursuant to California Environmental Quality Act Guidelines §15252 and §15162 and SCAQMD Rule 110, the SCAQMD has prepared an Environmental Assessment (EA) for Proposed Amended Rule 1148.1. The environmental analysis in the Draft EA concluded that Proposed Amended Rule 1148.1 would not generate any significant adverse environmental impacts. The Draft EA was released for a 30-day public review and comment period from April 29, 2015 to May 28, 2015. Subsequent to release of the Draft EA, modifications were made to the proposed project and some of the revisions were made in response to verbal and written comments on the project's effects. 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, nor 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 §15073.5 and §15088.5. Therefore, the Draft EA is now a Final EA and is included as an attachment to this Board package. Prior to making a decision on the proposed amendments to Rule 1148.1, the SCAQMD Board must review and certify the Final EA as providing adequate information on the potential adverse environmental impacts of the proposed project.

Socioeconomic Analysis

The proposed amendment reflects best practices that have been widely implemented in the industry. Any additional measure would only be triggered for those facilities that are either not adhering to the industry standards or have historically demonstrated limited operational or management oversight. After considering the individual cost of each Odor Mitigation Plan improvement for potentially affected facilities, the annual cost fell within the range of $113,238 to $121,494. This estimate assumes 24 facilities may need to install monitoring systems and 3 facilities will likely need to adopt Odor Mitigation Plans. It has been a standard SCAQMD socioeconomic analysis practice that, when the annual compliance cost is less than one million current U.S. dollars, the Regional Economic Impact Model (REMI) is not used to simulate jobs and

macroeconomic impacts. This is because the impact would most likely be very small and would fall within the noise of the model. REMI results constitute a major component of the SCAQMD's socioeconomic analysis. Therefore, when annual compliance cost is less than one million dollars and REMI is not used, the socioeconomic report can be brief and included in the staff report, unless otherwise determined on a case-by-case basis.

Implementation and Resource Impact
Existing SCAQMD resources will be sufficient to implement the proposed amendments with minimal impact on the budget.

Attachments
A. Summary of Proposed Amendments
B. Rule Development Process
C. Key Contacts
D. Resolution
E. Rule Language
F. Staff Report
G. Final Environmental Assessment

ATTACHMENT A
SUMMARY OF PROPOSED AMENDMENTS
Proposed Amended Rule 1148.1 – Oil and Gas Production Wells

- ***Require Use of Odor Mitigation Best Practices***
  Require facilities to implement the following best practices: post instructions, in English and Spanish, for reporting odor complaints, including the name and contact number for the facility as well as the SCAQMD 1-800-CUT-SMOG complaint hotline number; utilize a rubber grommet designed for drill piping, production tubing, or sucker rods to remove excess or free flowing fluid from piping, tubing or rods that are removed during maintenance or replacement activity; remove accumulated organic liquid from a well cellar as soon as possible but no later than by the end of the day following receipt of three or more complaints verified by SCAQMD personnel within the same day. Require facilities with central processing areas located within 1,500 feet of a sensitive receptor to operate and maintain a monitoring system that will alarm or notify operators at a central location.

- ***Require Facilities Located within 1,500 Feet of a Sensitive Receptor to Conduct and Submit a Specific Cause Analysis for Any Confirmed Odor or Oil Deposition Event***
  Require facilities located within 1,500 feet of a sensitive receptor to conduct a Specific Cause Analysis and submit a report within 30 days following receipt of written notification of a Confirmed Odor Event or Confirmed Oil Deposition Event. The required Specific Cause Analysis report includes identification of the equipment or activity associated with the confirmed event and mitigation and corrective actions, including a requirement to conduct monthly leak inspections when the specific cause is identified as a leak.

- ***Require Facilities with Continuing Odor Issues to Develop and Implement an Approved Odor Mitigation Plan***
  Require any facility that has received notification of three (3) or more confirmed odor events within a six month period or that has received a notice of violation for Rule 402 – Nuisance for odors to prepare and submit for approval an Odor Mitigation Plan (OMP) that identifies all potential sources of odor and incorporates additional odor mitigation best practices, including corrective actions identifies in any previously submitted specific cause analysis report. Additional best practice considerations include, but are not limited to: continual odor surveillance during rework, repair or maintenance activities, use of enclosures or equivalent while storing removed drill piping, production tubing or sucker rods; and shorter repair times following detection of any component leaks.

- ***Update Rule Language to Promote Clarity, Consistency and Enforceability***
  Update definition of a Sensitive Receptor for consistency with Rule 1148.2 - Notification and Reporting Requirements for Oil and Gas Wells and Chemical Suppliers and other SCAQMD rules, and make clarifications and editorial corrections to Rule 1148.1 to enhance clarity and enforceability of the rule.

ATTACHMENT B
RULE DEVELOPMENT PROCESS
Proposed Amended Rule 1148.1 – Oil and Gas Production Wells

Beginning of Rule Development Process
June 2014

↓

Working Group Meetings
November 13, 2014 – 24th Street Elementary, Los Angeles
January 15, 2015 – Denker Recreation Center, Los Angeles
March 26, 2015 – Montebello City Council Chambers

↓

Stationary Source Committee Meeting
February 20, 2015

↓

Public Workshop
April 16, 2015

↓

Stationary Source Committee Meeting
April 17, 2015

↓

Set Hearing
May 1, 2015

↓

Public Consultation Meeting
May 28, 2015

↓

Public Hearing
July 10, 2015

13 months spent in rule development

ATTACHMENT C
KEY CONTACTS
Proposed Amended Rule 1148.1 - Oil and Gas Production Wells

Affected Facilities

- Allenco Energy
- Amtek Oil
- Angus Petroleum
- Breitburn Operating LP
- E&B Natural Resources
- Freeport - McMoran
- Hillcrest Beverly Oil
- Holly Lane Oil
- Linn Energy
- Oxy Oil Long Beach
- Pacific Coast Energy Co.
- Signal Hill Petroleum
- Termo Oil and Energy
- Warren E&P

Other Affected Associations or Entities

- California Independent Petroleum Association
- Tether Law
- Western States Petroleum Association

Other Interested Parties

- Citizens Coalition for a Safe Community
- Communities for a Better Environment (CBE)
- Community Health Council
- Esperanza Housing Development
- Natural Resources Defense Council
- Redeemer Community Partnership
- Sierra Club
- Stand Together Against Neighborhood Drilling, Los Angeles (STAND, L.A.)

ATTACHMENT D
RESOLUTION NO. 15-_____
Proposed Amended Rule 1148.1 - Oil and Gas Production Wells

A Resolution of the South Coast Air Quality Management District (SCAQMD) Governing Board certifying the Final Environmental Assessment for Proposed Amended Rule 1148.1 - Oil and Gas Production Wells.

A Resolution of the SCAQMD Governing Board amending Rule 1148.1 - Oil and Gas Production Wells.

WHEREAS, the SCAQMD Governing Board finds and determines that the proposed amendments to Rule 1148.1 - Oil and Gas Production Wells are considered a "project" pursuant to the California Environmental Quality Act (CEQA); and

WHEREAS, the SCAQMD has had its regulatory program certified pursuant to Public Resources Code §21080.5 and has conducted a CEQA review pursuant to such program (SCAQMD Rule 110); and

WHEREAS, SCAQMD staff has prepared a Draft Environmental Assessment (EA) pursuant to its certified regulatory program and CEQA Guidelines §15252, setting forth the potential environmental consequences of Proposed Amended Rule 1148.1; and

WHEREAS, the Draft EA was circulated for a 30-day public review from April 29, 2015 to May 28, 2015; and

WHEREAS, subsequent to release of the Draft EA, modifications were made to the proposed project in response to verbal and written comments received relative to the project's effects. None of the individual comments identified any potentially significant adverse impacts from the proposed project. Further, none of the modifications constitute significant new information or a substantial increase in the severity of an environmental impact, nor provide new information of substantial importance relative to the draft document. In addition, revisions to the proposed project in response to comments would not create new, avoidable significant effects. The Draft EA has been revised such that it is now a Final EA; and

WHEREAS, Findings pursuant to Public Resources Code §21081.6 and CEQA Guidelines §15091 and a Statement of Overriding Considerations pursuant to CEQA Guidelines §15093 were not prepared because the analysis of the proposed project shows that Proposed Amended Rule 1148.1 would not have a significant adverse effect on the environment, and thus, are not required; and

WHEREAS, it is necessary that the adequacy of the Final EA be determined by the SCAQMD Governing Board prior to its certification; and

WHEREAS, pursuant to CEQA Guidelines §15252 (a)(2)(B), since no significant adverse impacts were identified, no alternatives or mitigation measures are required and thus, a Mitigation Monitoring Plan pursuant to Public Resources Code §21081.6 and CEQA Guidelines §15097, has not been prepared; and

WHEREAS, the SCAQMD Governing Board voting on Proposed Amended Rule 1148.1, has reviewed and considered the Final EA prior to its certification; and

WHEREAS, the SCAQMD Governing Board finds and determines, taking into consideration the factors in Section (d)(4)(D) of the Governing Board Procedures, that the modifications which have been made to Proposed Amended Rule 1148.1 since notice of public hearing was published do not significantly change the meaning of the proposed amended rule within the meaning of the Health and Safety Code §40726 and would not constitute significant new information requiring recirculation of the Draft EA pursuant to CEQA Guidelines §15073.5 and §15088.5; and

WHEREAS, the SCAQMD Governing Board has determined that a need exists to amend Rule 1148.1 - Oil and Gas Production Wells, to clarify requirements and provide additional enforceable mechanisms to prevent public nuisance from emissions of volatile organic compounds, toxic air contaminants and total organic compounds; and

WHEREAS, the SCAQMD Governing Board obtains its authority to adopt, amend or repeal rules and regulations from California Health and Safety Code §§ 39002, 40000, 40001, 40702, 40725 through 40728, 41508, and 41700; and

WHEREAS, the SCAQMD Governing Board has determined that Rule 1148.1 - Oil and Gas Production Wells, as proposed to be amended, 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 1148.1 - Oil and Gas Production Wells, as proposed to be amended, is in harmony with, and not in conflict with or contradictory to, existing federal or state statutes, court decisions, or state or federal regulations; and

WHEREAS, the SCAQMD Governing Board has determined that Proposed Amended Rule 1148.1 - Oil and Gas Production Wells, as proposed to be amended, does not impose the same requirements as any existing state or federal regulations and the proposed amendments are 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 Proposed Amended Rule 1148.1 - Oil and Gas Production Wells references the following statutes which the SCAQMD hereby implements, interprets or makes specific: Health and Safety Code §§ 40001 (rules to achieve ambient air quality standards), 40440 (b) (Best Available Retrofit Control Technology), and (c) (rules which are also cost-effective and efficient), 40702 (rules to execute duties required by law) and 41700 (public nuisance); and

WHEREAS, the SCAQMD Governing Board has determined that a Socioeconomic Impact Assessment is not required, pursuant to Health and Safety Code § 40440.8 or § 40728.5, because the Proposed Amended Rule 1148.1 - Oil and Gas Production Wells will not have a significant impact on air quality or emissions limitations; and

WHEREAS, a public hearing has been properly noticed in accordance with the 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; and

WHEREAS, the SCAQMD Governing Board specifies the manager of Proposed Amended Rule 1148.1 - Oil and Gas Production Wells as the custodian of the documents or other materials which constitute the record of proceedings upon which the adoption of this proposed amendment is based, which are located at the South Coast Air Quality Management District, 21865 Copley Drive, Diamond Bar, California; and

WHEREAS, the SCAQMD Governing Board finds and determines, taking into consideration the factors in section (d)(4)(D) of the Governing Board Procedures (to be codified as Section 30.5(4)(D) of the Administrative Code), that the modifications adopted which have been made to Proposed Amended Rule 1148.1 - Oil and Gas Production Wells since notice of public hearing was published do not significantly change the meaning of the proposed amended rule within the meaning of Health and Safety Code Section 40726; and

WHEREAS, the SCAQMD Governing Board has determined that Proposed Amended Rule 1148.1 - Oil and Gas Production Wells, should be adopted for the reasons contained in the Final Staff Report; and

WHEREAS, the proposed amendments to Rule 1148.1 - Oil and Gas Production Wells, will not be submitted for inclusion into State Implementation Plans.

NOW, THEREFORE, BE IT RESOLVED, that the SCAQMD Governing Board does hereby certify that the Final EA for Proposed Amended Rule 1148.1 was completed in compliance with CEQA and SCAQMD Rule 110 provisions; and finds that the Final EA was presented to the Governing Board, whose members reviewed, considered and approved the information therein prior to acting on Proposed Amended Rule 1148.1; and

BE IT FURTHER RESOLVED, that because no significant adverse environmental impacts were identified as a result of implementing Proposed Amended Rule 1148.1, Findings pursuant to Public Resources Code §21081.6 and CEQA Guidelines §15091, a Statement of Overriding Considerations pursuant to CEQA Guidelines §15093, and a Mitigation Monitoring Plan pursuant to Public Resources Code §21081.6 and CEQA Guidelines §15097 are not required; and

BE IT FURTHER RESOLVED, that the SCAQMD Governing Board directs staff to evaluate the use of the SCAQMD web page and other communication mechanisms, including integrated use of Geographic Information Systems, to post and disseminate information to the public related to complaint related activities at oil and gas production facilities. In no later than six months, staff shall provide a status report to the Stationary Source Committee, reporting findings and recommendations for the development and implementation of an SCAQMD communication program to better inform the community on complaint related activities at oil and gas production facilities; and

BE IT FURTHER RESOLVED, that the SCAQMD Governing Board directs staff to include, through the operation of the SCAQMD Air Quality Sensor Performance Evaluation Center (AQ-SPEC) or other programs, an air quality monitoring demonstration pilot study involving emerging technologies at oil and gas production facility operations. In no later than one year, staff shall provide a status report to the Stationary Source Committee, reporting findings and recommendations for the use of emerging monitoring technologies at oil and gas production facilities; and

BE IT FURTHER RESOLVED, that the SCAQMD Governing Board directs staff to conduct a comprehensive review of Best Available Control Technology (BACT) and Best Available Retrofit Control Technology (BARCT) applicable to Oil and Gas Production Facilities. No later than six months, staff shall provide a status report to the Stationary Source Committee, reporting findings and recommendations for the need, if any, for additional emission controls or regulatory efforts; and

BE IT FURTHER RESOLVED, that the SCAQMD Governing Board does hereby adopt the proposed amendments to Rule 1148.1 - Oil and Gas Production Wells, pursuant to the authority granted by law as set forth in the attached and incorporated herein by reference.

DATE: _____ _____

CLERK OF THE BOARDS

ATTACHMENT E

(Adopted March 5, 2004)(Proposed Amended July 10, 2015)

PROPOSED AMENDED RULE 1148.1. OIL AND GAS PRODUCTION WELLS

(a) Purpose

The purpose of this rule is to reduce emissions of volatile organic compounds (VOCs), toxic air contaminants (TAC) emissions and Total Organic Compounds (TOC) from the operation and maintenance of wellheads, ~~the~~ well cellars, and the handling of produced gas at oil and gas production facilities to assist in reducing regional ozone levels and to prevent public nuisance and possible detriment to public health caused by exposure to such emissions.

(b) Applicability

This rule applies to 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. These facilities are also subject to additional rule requirements, including, but not limited to: the storage of organic liquids is subject to Rule 463 – Organic Liquid Storage; wastewater systems, including sumps and wastewater separators are subject to Rule 1176 – VOC Emissions from Wastewater Systems; and leaks from components are subject to Rule 1173 – Control of Volatile Organic Compounds~~s~~ Leaks and Releases from Components at Petroleum Facilities and Chemical Plants. Natural gas distribution, transmission and associated storage operations are not subject to the requirements of this rule.

(c) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) ABANDONED WELL is a well that has been certified by the California Department of Conservation, Division of Oil, Gas and Geothermal Resources as permanently closed and non-operational.

(2) CENTRAL PROCESSING AREA is any location within an oil and gas production facility where pressurized phase separation or treatment of produced well fluids, including any produced oil, water or gas, occurs. A location that includes only oil producing wells and associated equipment not involved in pressurized phase separation or treatment, is not considered to be a central processing area.

(~~2~~3) COMPONENT is any valve, fitting, pump, compressor, pressure relief device, diaphragm, hatch, sight-glass, or meter in VOC service. Components are further classified as:

(A) MAJOR COMPONENT is any 4-inch or larger valve, any 5-hp or larger pump, any compressor, and any 4-inch or larger pressure relief device.

(B) MINOR COMPONENT is any component which is not a major component.

(~~3~~4) CONFIRMED ODOR EVENT is an occurrence of odor resulting in three or more complaints by different individuals from different addresses, and the source of the odor is verified by District personnel.

(5) CONFIRMED OIL DEPOSITION EVENT is an occurrence of property damage due to the airborne release of oil or oil mist from an oil and gas production facility, as verified by District personnel.

(~~2~~4~~6~~) FACILITY is any equipment or group of equipment or other VOC-, TOC- or TAC-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). Such above-described groups, if noncontiguous, but connected only by land carrying a pipeline, shall not be considered one facility.

(~~5~~7) HEAVY LIQUID is any liquid with 10 percent or less VOC by volume evaporated at 150ºC (302ºF), determined according to test methods specified in paragraph (~~h~~i)(3) or (~~h~~i)(4).

(~~6~~8) LEAK is the dripping of either heavy or light liquid; or the detection of a concentration of TOC above background, determined according to the test method in paragraph (~~h~~i)(1).

(~~7~~9) LIGHT LIQUID is any liquid with more than 10 percent VOC by volume evaporated at 150ºC (302ºF), determined according to the test method specified in paragraph (~~h~~i)(3).

(~~8~~10) ODOR is the perception experienced by a person when one or more chemical substances in the air come into contact with the human olfactory nerves.

(~~3~~9~~11~~) OIL PRODUCING WELL is a well which produces crude oil.

(1~~0~~12) ORGANIC LIQUID is any liquid containing VOC.

(~~4~~11~~1~~13) PRODUCED GAS is organic compounds that are both gaseous at standard temperature and pressure and are associated with the production, gathering, separation or processing of crude oil.

(12~~1~~14) RESPONSIBLE PARTY for a corporation is a corporate officer. A responsible party for a partnership or sole proprietorship is the general partner or proprietor, respectively.

(~~5~~13~~1~~15) SENSITIVE RECEPTOR ~~is a school (~~means any residence including private homes, condominiums, apartments, and living quarters; education resources such as preschools and kindergarten through grade twelve (k-12) schools;~~,~~ licensed daycare centers;~~,~~ and health care facilities such as hospitals~~,~~ or ~~convalescent home~~retirement and nursing homes. A sensitive receptor includes long term care hospitals, hospices, prisons, and dormitories or similar live-in housing.

(~~1~~416) SPECIFIC CAUSE ANALYSIS is a process used by an owner or operator of a facility subject to this rule to investigate the cause of a confirmed odor event or confirmed oil deposition event, identify corrective measures and prevent recurrence of a similar event.

(~~6~~15~~1~~17) STUFFING BOX is a packing gland, chamber or "box" used to hold packing material compressed around a moving pump rod to reduce the escape of gas or liquid.

(~~7~~16~~1~~18) TOTAL ORGANIC COMPOUNDS (TOC) is the concentration of gaseous organic compounds determined according to the test method in paragraph (~~g~~hi)(1).

(17~~1~~19) TOXIC AIR CONTAMINANT (TAC) is an air contaminant that has been identified as a hazardous air pollutant pursuant to Section 7412 of Title 42 of the United States Code; or has been identified as a TAC by the Air Resources Board pursuant to Health and Safety Code Section 39655 through 39662~~,~~; or which may cause or contribute to an increase in mortality or an increase in serious illness, or potential hazard to human health.

(~~8~~18~~1~~20) VOLATILE ORGANIC COMPOUND is as defined in Rule 102 – Definition of Terms.

(~~1~~921) WASTEWATER is a water stream or other liquid waste stream generated in a manner which may contain petroleum liquid, emulsified oil, VOC, or other hydrocarbons.

(2~~0~~22) WATER INJECTION WELL is a bored, drilled, or driven shaft, or a dug hole that is deeper than it is wide, or an improved sinkhole, or a subsurface fluid distribution system used to inject fluid consisting primarily of water into a reservoir typically to create fluid lift of product or maintain reservoir pressure.

(~~9~~2~~1~~23) WELL CELLAR is a lined or unlined containment surrounding one or more oil wells, allowing access to the wellhead components for servicing and/or installation of blowout prevention equipment.

(~~10~~2224) WELLHEAD is an assembly of valves mounted to the casing head of an oil well through which a well is produced. The wellhead is connected to an oil production line and in some cases to a gas casing line.

(d) Requirements

(1) The operator of an oil and gas production facility shall not allow a concentration of a TOC in the well cellar greater than 500 ppmv, according to the test method in paragraph (~~h~~i)(1). ~~in the well cellar.~~

(2) ~~Effective July 1, 2004, the~~The operator of an oil and gas production facility shall not allow any valve to be opened at the wellhead unless a portable container is used to catch and contain organic liquid that would otherwise drop into the well cellar or onto the ground. Such container shall be kept closed to the atmosphere when it contains organic liquid and is not in use.

(3) If a well cellar is verified by District personnel as the source of odors associated with three or more complaints by different individuals from different addresses in a single day, the operator of an oil and gas production facility shall pump out or remove organic liquid accumulated in the well cellar as soon as possible but no later than by the end of the day.

(~~3~~4) The operator of an oil and gas production facility shall not allow organic liquid to be stored in a well cellar, except as provided by paragraph (d)(~~4~~5). During any period~~s~~ of equipment maintenance, drilling, well plugging, abandonment operations, or well workover, the operator shall pump out or remove organic liquid that accumulates in the well cellar no later than two (2) days after the maintenance, drilling, well plugging, abandonment or workover activity at the well is completed.

(~~4~~5) The operator may only store organic liquid in a portable enclosed storage vessel ~~provided~~ if the vessel is equipped with air pollution control equipment to reduce the TOC emissions to less than 250 ~~ppm~~ppmv outlet concentration according to the test method in paragraph (~~g~~h~~i~~)(1), except use of air pollution control equipment is not required ~~where safety requirements established in a written company safety manual or policy deem it impractical~~ during ~~maintenance, plugging, abandonment, well workover or drilling operations.~~activities determined to meet the exemption criteria of paragraph (~~i~~j)(2). The operator shall conduct a TOC measurement according to the test method in paragraph (~~g~~h~~i~~)(1) at the time of filling, and weekly thereafter to ensure that the air pollution control system achieves the emission standard of 250 ppmv.

(~~4~~5~~6~~) The operator of an oil and gas production facility shall pump out ~~the~~ any organic liquid accumulated in the well cellar immediately before a well is steamed or after a wellhead is steam cleaned.

(~~5~~6~~7~~) The operator of an oil and gas production facility shall pump out or remove organic liquid accumulated in the well cellar ~~within five (5) calendar days, or by close of the following business day if the well cellar is located within 100 meters of a sensitive receptor~~ when the TOC concentration in the well cellar is greater than 250 ~~ppm~~ppmv as determined by the test method in paragraph (~~g~~h~~i~~)(1)~~.~~ within five (5) calendar days following the determination, or if the well cellar is located within 1,500 feet of a sensitive receptor, by close of the following business day. In lieu of the method in paragraph (~~g~~h~~i~~)(1), an operator may measure the depth of accumulated organic liquid and pump-out the liquid when the depth exceeds two (2) inches. The organic liquid depth may be measured using a "copper coat" gauge or any other measuring instrument determined to be acceptable by the Executive Officer.

(~~6~~7~~8~~) ~~Effective January 1, 2006, the~~The operator of an oil and gas production facility shall not allow natural gas or produced gas to be vented into the atmosphere. The emissions of produced gas shall be collected and controlled using one of the following:

(A) A system handling gas for fuel, sale, or underground injection; or

(B) A device, approved by the Executive Officer, with a VOC vapor removal efficiency demonstrated to be at least 95% by weight per test method of paragraph (~~g~~h~~i~~)(2) or by demonstrating an outlet

VOC concentration of 50 ~~ppm~~ppmv according to the test method in paragraph (~~gh~~i)(1) or by an equivalent demonstration identified in an approved permit issued on or after March 5, 2004, pursuant to Rule 203 – Permit to Operate. If the control device uses supplemental natural gas to control VOC, it shall be equipped with a device that automatically shuts off the flow of natural gas in the event of a flame-out or pilot failure.

(~~7~~8~~8~~9) Except as Rule 1173 – Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants applies to components of produced gas handling equipment located within 100 meters of a sensitive receptor, the operator shall repair any gaseous leaks of 250 ppmv TOC or greater by the close of the business day following the leak discovery or take actions to prevent the release of TOC emissions to the atmosphere until repairs have been completed.

(~~8~~9~~9~~10) ~~Effective March 5, 2004, unless~~Unless approved in writing by the Executive Officer, CARB, and USEPA as having no significant emissions impacts, no person shall:

(A) Remove or otherwise render ineffective a well cellar at an oil and gas production well except for purposes of well abandonment to be certified by the California Department of Conservation, Division of Oil, Gas and Geothermal Resources; or

(B) Drill a new oil and gas production well unless a well cellar is installed for secondary containment of fluids.

(1~~0~~11) Effective *(30 days after adoption)* the operator of an oil and gas production facility shall utilize a rubber grommet designed for drill piping, production tubing or sucker rods to remove excess or free flowing fluid from piping, tubing or rods that ~~is~~ are removed during any maintenance or ~~drill~~ piping, tubing or rod replacement activity that involves the use of a workover rig.

(1~~1~~12) Effective *(180 days after adoption)* the operator of an oil and gas production facility shall, for any central processing area located within 1,500 feet of a sensitive receptor, operate and maintain a monitoring system that alarms or notifies operators of key process conditions, such as operating pressure, liquid level or on/off operating status, or a monitoring system that is required in accordance with applicable local fire regulations, in order to ensure proper facility operation. The monitoring system ~~will~~

shall alarm ~~and~~ or notify operators at a central location, ~~or~~ control center~~.~~, or other common area. The owner or operator shall identify and document the monitored process parameters or monitoring system required by applicable local fire regulations and shall make such documentation available for inspection upon request. ~~The monitoring system will incorporate any emissions or process monitoring and associated alarm thresholds identified in any approved SCAQMD operating permit or Odor Mitigation Plan approved in accordance with the provisions of paragraph (f)(2).~~

(12~~1~~13) Effective *(30 days after adoption)* the operator of an oil and gas production facility shall post instructions for reporting odor complaints. The posted instructions shall be provided in a conspicuous manner and under such conditions as to make it likely to be read or seen and understood by an ordinary individual during both normal operating and non-operating hours. The instructions shall include the following minimum information in English and Spanish:

(A) Name of the facility;

(B) Facility call number; and,

(C) Instructions to call the South Coast Air Quality Management District complaint hotline at the toll free number 1-800-CUT-SMOG or equivalent information approved in writing by the Executive Officer.

(e) Operator Inspection Requirements

(1) ~~Effective July 1, 2004, the~~The operator of an oil and gas production facility shall visually inspect:

(A) Any stuffing box not located in or above a well cellar daily;

(B) Any stuffing box located in or above a well cellar weekly; or

(C) Any stuffing box or produced gas handling and control equipment located ~~100 meters~~1,500 feet or less from a sensitive receptor daily. Receptor distance shall be determined as the distance measured from the stuffing box or produced gas handling and control equipment to the property line of the nearest sensitive receptor.

(2) Notwithstanding the requirements of subparagraphs (e)(1)(A) and (e)(1)(B), the operator shall perform monthly visual inspections of any

stuffing box fitted with a stuffing box adapter, any closed crude oil collection container, and any well shut off switch that will shut down the well when the container is full.

(3) ~~Effective, July 1, 2004, except~~Except for well cellars listed under subdivision (~~h~~i), the operator shall quarterly, perform an inspection of all well cellars according to the test method in paragraph (~~gh~~i)(1).

(4) Within two (2) days of discovery of organic liquid leakage observed from the inspections pursuant to subparagraph (e)(1)(A), (e)(1)(B), or paragraph (e)(~~1)(A) or (e)(1)(B)~~2), and within eight (8) hours pursuant to ~~paragraphs~~subparagraph (e)(1)(C), the operator shall conduct an inspection of the stuffing box and well cellar according to the test method in paragraph (~~gh~~i)(1) or measure the organic liquid depth using a "copper coat" gauge or any other measuring instrument determined to be acceptable by the Executive Officer.

(5) Notwithstanding the provisions of Rule 1173 – Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants, the operator of an oil and gas production facility shall conduct a monthly TOC measurement on any component that has been identified as causing or likely to have caused the confirmed odor event~~a potential odor nuisance source~~ through a submitted specific cause analysis report submitted in accordance with the provisions of subdivision (f). The TOC measurement shall be conducted monthly according to the test method in paragraph (i)(1) following submittal of the specific cause analysis report, until the measurement fails to exceed the leak rates identified in subparagraphs (e)(5)(A) and (e)(5)(B) for six consecutive months. The operator shall repair, replace or remove from service the component in accordance with the requirements of subparagraphs (e)(5)(A) and (e)(5)(B).

(A) Any heavy liquid component leak of more than three drops per minute and greater than 100 ppmv shall be repaired, replaced or removed from service in one (1) calendar day.

(B) Any light liquid/gas/vapor/component leak greater than 500 ppmv but no more than 10,000 ppmv shall be repaired, replaced or removed from service in one (1) calendar day.

~~(f) Odor Mitigation Requirements~~

(~~1~~f) Specific Cause Analysis and Report

Effective *(date of adoption)* the owner or operator of any oil and gas production facility with any sensitive receptor within 1,500 feet of any well located on the facility property shall conduct a Specific Cause Analysis for each confirmed odor event and for each confirmed oil deposition event. The Specific Cause Analysis shall describe the steps taken to identify the source and cause of the odor or confirmed oil deposition event, and any mitigation and corrective actions taken or identified. The owner or operator shall, within 30 calendar days following receipt of written notification of a confirmed odor event or confirmed oil deposition event from the Executive Officer, submit the Specific Cause Analysis report to the Executive Officer, certified by the Responsible Party that all information submitted is true and correct.

(~~A~~1) The submitted Specific Cause Analysis report shall include the following:

(~~i~~A) Identification of the equipment or activity causing or likely to have caused the confirmed odor event or confirmed oil deposition event, including any equipment or activity identified in the written notification of a confirmed odor event or confirmed oil deposition event by the Executive Officer.

(~~ii~~B) Any SCAQMD regulatory requirement associated with the equipment or activity causing or likely to have caused the confirmed odor event or confirmed oil deposition event, including but not limited to, any permit condition and any other SCAQMD rule, including this rule.

(~~iii~~C) Identification of any Standard Operating Procedure, emergency or leak prevention plan, including any spill prevention plan, preventative maintenance scheduling or procedure associated with the source of the confirmed odor event or confirmed oil deposition event and any corrective action identified as part of the review and update pursuant to ~~sub~~paragraph (f)~~(1)~~(~~B~~)(2) and schedule for completion of the corrective action.

(~~B~~2) The owner or operator shall review and update the following as part of the Specific Cause Analysis:

(~~i~~A) Any Standard Operating Procedures associated with normal production operations and the leak history of inspections

associated with the source of the confirmed odor event or confirmed oil deposition event.

(~~ii~~B) Any emergency or leak prevention plans, including any spill prevention plans associated with the source of the confirmed odor event or confirmed oil deposition event.

(~~iii~~C) Any preventative maintenance scheduling or procedures associated with the source of the confirmed odor event or confirmed oil deposition event.

(~~2~~g) Odor Mitigation Plan

Effective *(date of adoption)*~~,~~ the owner or operator of any oil and gas production facility shall submit for approval an Odor Mitigation Plan, or an update to an existing Odor Mitigation Plan, to the Executive Officer within 90 calendar days following receipt of written notification from the Executive Officer.

(~~A~~1) Requirement for a Plan Submittal

The Executive Officer shall notify the owner or operator of any oil and gas production facility with any sensitive receptor within 1,500 feet of any well located on the facility property of the requirement for an Odor Mitigation Plan if any of the following thresholds are met or exceeded:

(~~i~~A) Receipt of a Notice of Violation for Rule 402 – Nuisance, as a result of odors; or

(~~ii~~B) Three (3) confirmed odor events within the previous six (6) consecutive calendar months.

(~~iii~~C) Subsequent to approval of an Odor Mitigation Plan:

(~~I~~i) Receipt of a Notice or Violation for Rule 402 – Nuisance, as a result of odors; or

(~~II~~ii) Three (3) confirmed odor events within the most recent six (6) consecutive calendar months following the date of approval of a previous Odor Mitigation Plan.

(~~B~~2) Odor Mitigation Plan Elements

An approved Odor Mitigation Plan must include and address the following activities and equipment:

(~~i~~A) Oil and gas production and wastewater generation, including both normal and spill or release management control operations, with corresponding identification of potential or actual sources of emissions, odors, frequency of operator inspection and history of leaks.

(~~ii~~B) Activity involving drilling, well completion or rework, repair~~,~~ or maintenance of a well, which notes the sources of emissions, odors, odor mitigation measures for responding to odors and odor complaints, and procedures used for odor monitoring at the site and fence line.

(~~iii~~C) Identification of emission points and emission or leak monitoring used for all wastewater tanks, holding, knockout, and oil/water separation vessels, including any pressure relief devices or vacuum devices attached to the vessels, with provisions for recording of releases from such devices.

(~~iv~~D) Any equipment or activity identified as part of any previous Specific Cause Analysis.

(~~C~~3) Odor Monitoring and Mitigation Requirements

An approved Odor Mitigation Plan must include the following odor monitoring and mitigation provisions:

(~~i~~A) The owner or operator shall conduct continual odor surveillance downwind at the perimeter of the property ~~at all times~~ during drilling, well completion, or rework, repair~~,~~ or maintenance of any well, including water injection wells. Observations shall be recorded hourly. Equivalent odor monitoring equipment may be used in lieu of odor surveillance, subject to approval by the Executive Officer.

(~~ii~~B) If odors are detected from odor surveillance or odor monitoring at the perimeter of the facility, pursuant to ~~clause (f)(2)(C)(i)~~ subparagraph (g)(3)(A) and confirmed from drilling, well completion, or rework, repair~~,~~ or maintenance of any well, the associated activity will discontinue until the source or cause of odors ~~are~~is determined and mitigated in accordance with measures previously approved unless the source or cause of the detected odors is determined to not be associated with the activity under surveillance.

(~~iii~~C) The oil and gas production facility shall store any removed drill piping, production tubing ~~and drill~~ or sucker rods in a manner that minimizes emissions from crosswinds ~~through use of a covering,~~ by storing within an enclosed area~~,~~ or other equivalent method.

(~~iv~~D) Notwithstanding the provisions of Rule 1173 - Control of Volatile Organic Compound~~s~~ Leaks and Releases from Components at Petroleum Facilities and Chemical Plants, the operator of any oil and gas production facility shall repair, replace or remove from service any leaking component located within 1,500 feet of a sensitive receptor in accordance with the requirements of ~~subparagraphs~~ clauses ~~(f)(2)(C)(iv)(I)~~ (g)(3)(D)(i) and ~~(f)(2)(C)(iv)(II)~~ (g)(3)(D)(ii). For each calendar quarter, the operator may extend the repair period, as indicated below, for a total number of leaking components not to exceed 0.05 percent of the number of components inspected during the previous quarter, by type, rounded upward to the nearest integer where required.

(~~I~~i) Any heavy liquid component leak of more than three drops per minute and greater than 100 ppmv shall be repaired, replaced or removed from service in one (1) calendar day with an extended repair period of three (3) calendar days.

(~~II~~ii) Any light liquid/gas/vapor component leak greater than 500 ppmv but no more than 10,000 ppmv shall be repaired, replaced or removed from service in one (1) calendar day with an extended repair period of three (3) calendar days.

(~~v~~E) Any corrective action identified in a Specific Cause Analysis report previously submitted by the facility.

(F) The owner or operator shall evaluate the cause or likely cause of any confirmed odor event as identified in any Specific Cause Analysis report previously submitted by the facility and identify either improvements to existing monitoring systems required pursuant to paragraph (d)(12) or parameters for a new monitoring system installation. The owner or operator shall establish an installation and implementation schedule for any monitoring system improvements or new installations, subject to Executive Officer approval.

If any provision of ~~sub~~paragraph ~~(f)(2)(C)~~ (g)(3) is not included in the Odor Mitigation Plan, an evaluation and documentation must be provided in the Odor Mitigation Plan that states the reason why such provision is not feasible or would not be effective in addressing the specific cause of the confirmed odor events or notice(s) of violation that resulted in the

requirement for plan submittal, subject to approval by the Executive Officer.

(~~D~~4) The owner and operator of an oil and gas production facility shall comply with all provisions of an approved Odor Mitigation Plan, except as provided by paragraph (~~i~~j)(2). Violation of any of the terms of the plan is a violation of this rule.

(~~f~~gh) Recordkeeping Requirements

(1) The operator shall maintain all records that document the purchase and installation of the stuffing box adapter(s) to demonstrate compliance with paragraph (e)(~~2~~4) at the facility or facility headquarters and such records shall be made available to the Executive Officer upon request.

(2) The operator shall maintain all records of inspection, measurements, repair, cleaning and pump-outs required by this rule, and of any activities performed under the exemption provided by (~~i~~j)(2), in a form approved by the Executive Officer at the facility or facility headquarters for a period of three years or a period of five years for a Title V facility and such records shall be made available to the Executive Officer upon request.

(3) The operator shall maintain production records and other applicable information and documents, including any referenced established written company safety manual or policy, sufficient to demonstrate eligibility for any exemption claimed pursuant to subdivision (~~h~~i) and make them available to the Executive Officer upon request.

(4) The operator shall maintain all records and other applicable documents required as part of an Odor Mitigation Plan approved in accordance with ~~paragraph (f)(2)~~ subdivision (g) in a form approved by the Executive Officer at the facility or facility headquarters for a period of three years or a period of five years for a Title V facility and such records and applicable documents shall be made available to the Executive Officer upon request.

(~~g~~h~~i~~) Test Methods

The following test methods and procedures shall be used to determine compliance with this rule. Other test methods determined to be equivalent after review by the staffs of the District, the Air Resources Board, and the U.S. EPA, and approved in writing by the District Executive Officer may also be used.

(1) Measurement of TOC or VOC concentrations shall be conducted according to the United States Environmental Protection Agency (USEPA) Reference Method 21 using an appropriate analyzer calibrated with methane. The analyzer shall be calibrated before inspection each day prior to use. For the purpose of demonstrating compliance with the TOC concentration requirements in paragraphs (d)(1) and (d)(~~5~~67), measurement of the TOC concentrations shall be conducted at a distance of no more than three (3) inches above the organic liquid surface in the well cellar.

(2) Determination of Efficiency of Emission Control Systems

The control equipment efficiency of an emission control system, on a mass emissions basis, and the VOC concentrations in the exhaust gases, measured and calculated as carbon, shall be determined by USEPA Test Methods 25, 25A, or District Method 25.1 - Determination of Total Gaseous Non-Methane Organic Emissions as Carbon or District Method 25.3 Determination of Low Concentration Non-Methane Non-Ethane Organic Compound Emissions from Clean Fueled Combustion Sources, as applicable. US EPA Test Method 18~~,~~ or ARB Method 422 shall be used to determine emissions of exempt compounds.

(3) The VOC content shall be determined according to ASTM Method D 1945 for gases, SCAQMD Method 304-91 for liquids. The percent VOC of a liquid evaporated at 150ºC (302ºF) shall be determined according to ASTM Method D 86.

(4) The flash point of heavy liquids shall be determined according to ASTM Method D 93.

(~~3~~5) Laboratory Approval

Sampling, analysis, and reporting shall be conducted by a laboratory that has been approved under the District Laboratory Approval Program (LAP) for the cited District reference test methods, where LAP approval is available. For District reference test methods for which no LAP program is available, the LAP approval requirement shall become effective one year after the date that the LAP program becomes available for that District reference test method.

~~(4) Equivalent Test Methods~~

~~A person may use other methods to determine compliance with this rule provided it is demonstrated to be equivalent and approved in writing by~~

~~the Executive Officers of the District, the California Air Resources Board, and the Regional Administrator of the USEPA, or their designees.~~

(~~h~~ij) Exemptions

(1) This rule shall not apply to well cellars associated exclusively with:

(A) Oil and gas production wells that have been idle and out of operation for more than six months, as indicated by production records, with no liquid leaks or accumulation of crude oil in the well cellar ~~as indicated by production records~~. All provisions of this rule shall apply upon commencement of operation of the idle well.

(B) Wells that have been certified as an abandoned well by the California Department of Conservation, Division of Oil, Gas and Geothermal Resources.

(C) Water, gas or steam injection wells.

(2) The provisions of paragraphs (d)(3), (d)(~~5~~45), ~~*(d)(6),*~~ (d)(7), ~~and~~ (d)(~~7~~8), (d)(9) and ~~subparagraph (f)(2)(C)~~ paragraph (g)(3) shall not apply to any well ~~or~~, produced gas handling system, or portable enclosed storage vessel and associated air pollution control equipment undergoing maintenance and repair, well drilling ~~and~~, or well abandonment operations, ~~provided~~if the owner or operator can demonstrate to the Executive Officer that: performing the maintenance and repair, drilling, or abandonment operation to meet paragraph (d)(3)(d)(~~4~~5), ~~*(d)(6),*~~ (d)(7), ~~or~~ (d)(8), (d)(9), or paragraph (g)(3), as applicable, would cause the facility to operate in a manner that violates state or federal regulations, applicable industry safety standards, or a written company safety manual or policy that was developed to comply with applicable industry safety standards; and that the maintenance and repair, drilling, or abandonment operation is conducted in a manner that minimizes, as much as possible under the circumstances, emissions to the atmosphere~~, and is consistent with the written company safety manual or policy~~.

(3) The provisions of paragraph (d)(1), (d)(2) and (d)(~~5~~67) shall not apply to any well cellar used in emergencies at oil production facilities, if clean-up procedures are implemented within 24 hours after each emergency occurrence and completed within ten (10) calendar days.

(4) The provisions of paragraph (d)(~~6~~7~~8~~) of this rule shall not apply to oil and gas production wells in operation as of March 5, 2004, that produce no more than one (1) barrel per day of oil or 200 standard cubic feet per day of produced gas per facility, provided that such production wells are not located within 100 meters of a sensitive receptor, and provided the production can be demonstrated from annual production records. Demonstration of produced gas production shall be based on metered measurement of the gas.

ATTACHMENT F

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final Staff Report

Proposed Amended Rule 1148.1 – Oil and Gas Production Wells

July 2015

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EXECUTIVE SUMMARY

Rule 1148.1 – Oil and Gas Production Wells was adopted on March 5, 2004 to reduce volatile organic compound (VOC) emissions from well cellars as well as from sources of untreated process gas located at oil and gas production facilities. The rule includes requirements for visual inspection and maintenance programs and for controlling untreated produced gas. An increased awareness of oil and gas production wells due to community concerns over potential environmental impacts from well stimulation techniques such as hydraulic fracturing has resulted in a goal to minimize impacts to nearby residents and sensitive receptors from ongoing operations ~~that do not include drilling~~. In addition, between the years 2010 and 2014, operations at Allenco Energy Inc., an oil and gas production facility located adjacent to several sensitive receptors, had become the subject of close to 300 complaints, over 150 inspections and eighteen Notices of Violation (NOV), including six NOVs for Rule 402 – Nuisance due to odors. This further heightened awareness from the local community and other interested stakeholders, raising interest in pursuing environmental justice measures to both more rapidly respond to and prevent future situations from evolving at similarly located operations. The proposed amendment seeks to include additional prevention measures and other best practices in an effort to reduce the potential for odor nuisance and exposures from oil and gas production facilities, especially those within 1,500 feet of a sensitive receptor. Further, the proposed amendment seeks to make administrative changes to the rule by removing obsolete rule language and making minor revisions.

~~The proposed amendment incorporates some of the information gathered through the reporting mechanisms provided by Rule 1148.2 – Notification and Reporting Requirements for Oil and Gas Wells and Chemical Suppliers adopted, April 5, 2013~~. The South Coast Air Quality Management District (SCAQMD) intends to further refine and analyze ~~the~~ data obtained from implementation of Rule 1148.2 - Notification and Reporting Requirements for Oil and Gas Wells and Chemical Suppliers as part of a subsequent effort to report findings and recommendations for the need, if any, for emission controls or regulatory efforts related to well drilling, well completion, and well rework.

As a separate, but concurrent effort, proposed amendments to Rule 1148.1 address the ~~production~~ operation and maintenance aspects of an ~~operating~~ oil and gas ~~well~~production facility, rather than the pre-production or stimulation aspects covered under the requirements of Rule 1148.2.

Currently production wells, primarily due to low emission potential, are currently registered under Rule 222 - Filing Requirements For Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation II and do not require full permits. However, if these same wells have associated equipment (i.e. separation tanks, wastewater separators), the facility requires a comprehensive analysis under Rule 203 - Permit to Operate, and subject to Regulation XIII requirements, as applicable.

There is no anticipated significant cost increases associated with the proposed amendment because the amended rule focuses on improving work practices and establishing odor mitigation procedures as a contingency, rather than on additional engineering controls. Any additional cost impact associated with implementation of improved work practices, specific cause analyses and odor mitigation procedures are expected to be administrative and nominal.

BACKGROUND

Introduction

The process of moving oil and gas from underground reservoirs to above ground storage is described as a "pipeline process" since oil and gas in its natural state uses natural pressure or mechanical forces to move the oil and gas through miles of pipeline to the wellhead and is then transported by more piping to storage. In the life of an oil well, there are phases which dictate the type of equipment to be used and the work practices and maintenance procedures that will be implemented. These operations have been historically regulated and permitted by the California Division of Oil, Gas and Geothermal Resources (DOGGR). The phases include: exploration, well development, production and well abandonment. Rule 1148.1 applies principally to the production phase, whereas Rule 1148.2 applies to the exploration, well development and well rework phases. DOGGR continues to regulate site abandonment activities.

Figure 1 below outlines the overall oil and gas well lifecycle and the associated regulatory applicability with respect to activities covered under Rule 1148.1 and Rule 1148.2:

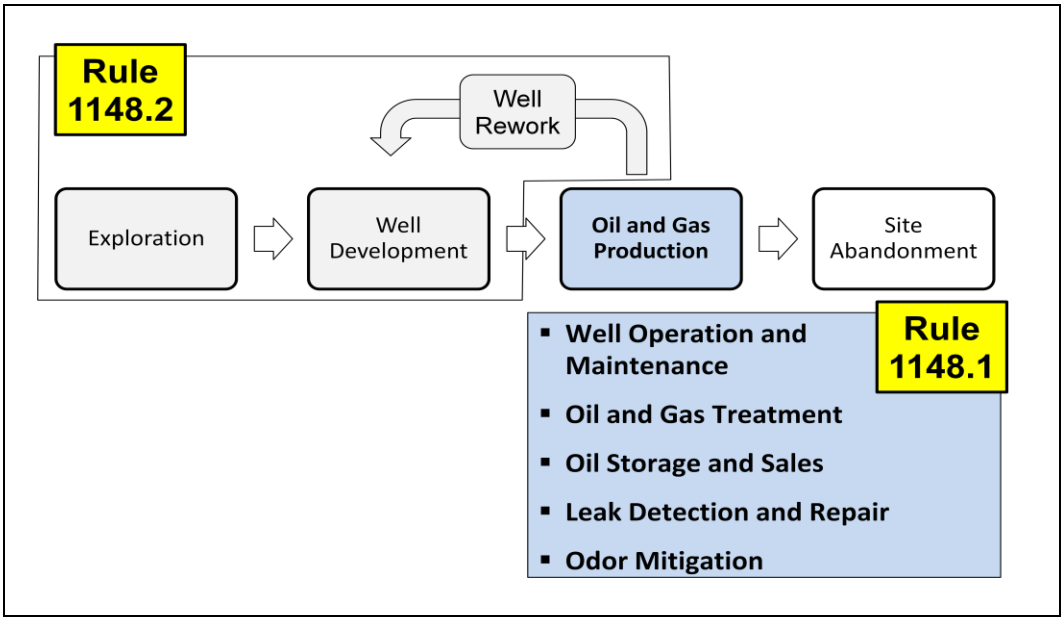


Figure 1. Typical oil and gas production facility processes and SCAQMD rule applicability

Exploration

Exploratory wells are drilled into underground formations in hopes of locating a new source of fossil fuel. This type of well represents a risk for the company conducting the drilling, not only for the high cost, but also due to the uncertainty in the quantity of oil or natural gas it might contain. The well may turn out to be a profitable new source of fossil fuel, or it may contain quantities of fuel that are not profitable to extract. In the latter case, the well may be plugged and abandoned.

When oil deposits are discovered, a crude oil reservoir can contain a mixture of water, as well as oil and gas in the small pore spaces in the reservoir rock. Initially, the reservoir holds these fluids under considerable pressure, caused by the hydrostatic pressure of the groundwater. At this pressure, a large part of the gas is dissolved in the oil. These two fluids, the initial water and the gas in solution, combine to provide the driving force for moving the oil into the well where it is pushed upward by the underlying pressure.

This operation is the subject of Rule 1148.2.

Well Development

Development wells are typically drilled within an area that has already proven to be productive. Once oil or gas is discovered in a commercially viable quantity, development wells are drilled to continue to recover as much of the oil or gas as possible. There are also service wells which are drilled for injecting liquids or gases into an underground formation in order to increase the pressure and force the oil toward the producing wells. Service wells also include wells drilled for the underground disposal of water produced with the oil and gas.

This operation is also the subject of Rule 1148.2.

Production

After drilling, an oil well is constructed essentially as a pipeline, reaching from the top of the ground to the oil-producing formation. It is through this pipe that oil is brought to the surface. The pipeline is a series of joints of a special kind of pipe (casing) screwed together to form a continuous tube for the oil and gas to flow through. Sometimes in drilling a well, more than one commercially productive formation is found. In such cases, a separate tubing string is run inside the casing for each productive formation. Production from the separate formations is directed through the proper tubing strings and is isolated from the others by packing that seals the annular space between the tubing strings and casing. These are known as multiple completion wells.

The production stage is the most important stage of a well's life, when the oil and gas are produced. By this time, the rigs used to drill and complete the well have moved off the wellbore, and the top is usually outfitted with a collection of valves called a "Christmas tree" or production tree. These valves regulate pressures, control flows, and allow access to the wellbore in case further completion work is needed. From the

outlet valve of the production tree, the flow can be connected to a distribution network of pipelines and tanks to process the produced oil, gas and water, and subsequently supply the product to refineries, natural gas compressor stations, or oil export terminals.

As long as the pressure in the reservoir remains high enough, the production tree is all that is required to produce the well. If the pressure depletes and it is considered economically viable, an artificial lift method can be employed to withdraw the remaining product from the reserve.

Currently there are four common methods of artificial lift used in the industry today: they are beam pumping, submersible pumping, gas lift and hydraulic pumping.

For beam pumping, the pump is designed to be inserted inside the tubing of a well and its main purpose is to gather fluids from beneath the surface and lift them to the surface. The most important components are the barrel, valves (traveling and fixed) and the piston. The pump is connected to the pumping unit at the surface by a string of sucker rods. Sucker rods are stroked up and down the tubing, activating the pump at the bottom. At the surface a large mechanical device called the beam pumping unit is attached. Depending on the size of the pump, it generally produces 5 to 40 liters of liquid at each stroke. Often this is an emulsion of crude oil and water. One of the advantages of beam pumping is high efficiency; however, it is limited to relatively low production volumes, less than 1,000 barrels per day (bpd).

Submersible pumping consist of an electrical motor attached to a pump on the end of the tubing string. The electrical motor turns a centrifugal pump, which forces oil from the bottom of the well, up through the inside of the tubing, and out at the surface. The electricity is supplied through an electric cable attached to the side of the tubing and connected to the electric motor. The Submersible Pumping has high volume and depth capacity and high efficiency over 1,000 bpd. However, this type of artificial lift has poor ability to pump sand.

Another type of artificial lift is gas lift, which involve a series of devices called gas lift valves that are inserted into the sides of the tubing. The gas is injected into the well through the tubing casing annulus and enters the tubing through the gas lift mandrels and gas lift valves. The fluid in the tubing is made lighter by the gas, and as a result, the mixture is pushed to the surface by the reservoir pressure. The advantage of using gas lift equipment is that the process closely resembles the natural flow process and basically operates as an enhancement or extension of that process. The only major requirement is an available and economical supply of pressurized gas. The draw back in using this system is high initial capital cost, high level of maintenance and complex operation.

The last artificial lift method is hydraulic pumping where high pressure oils are pumped into the well through the tubing string. At the bottom of the well, the pressured oil enters a mechanical device, causing it to reciprocate. This mechanical device activates a pump which lifts the oil from the producing formation, together with expended powered oil to the surface. The system consists of a surface power

fluid system, a prime mover, a surface pump, and a down hole jet or pump. Power fluid from the surface actuates the engine, which in turn drives the pump and power fluid returns to the surface with the produced oil. The Advantages of hydraulic pumping is that there are no moving parts and high volume capability. The downside is the high initial capital cost and the difficulty of operation.

This operation is subject to Rule 1148.1.

Site Abandonment

Once a production well oil and gas reservoir is depleted, the well is abandoned and the site is cleaned up. Requirements include plugging the depleted reservoir hole with cement to protect all underground strata. This prevents any flow or leakage at the surface and protects the water zone, in accordance with California Code of Regulations, Subchapter 4, and section 1920.1. Equipment that is salvageable is removed; pits used in the operation are filled in and the site is re-graded. Wherever practical the ground is replanted with grass or other kinds of vegetation and sometimes, buildings are constructed on the site.

This activity is regulated by DOGGR.

Ancillary

There are additional ancillary procedures and equipment that are used across all phases of oil and gas production, including overall facility and equipment maintenance and spill containment and spill response. The emissions related aspects of these activities are subject to Rule 1148.1.

Maintenance

Maintenance is necessary and required to ensure smooth operation in a safe manner and to minimize emissions during all phases of oil well operations. General maintenance includes repairing or replacing pull rods or well casings using workover rigs, as well as inspecting and repairing pumps and other equipment used in production.

Spill Containment and Spill Response

Oil and gas production facilities utilize various forms of spill control and countermeasures to address handling of hazardous materials. Primary containment consists of a permanent structure that holds the hazardous material (oil), such as tanks and piping. In many cases well cellars are used to provide secondary containment. On-shore oil and gas production facilities are also subject to federal requirements for spill control under 40 CFR part 112.

Typical Emission Sources

Wellheads

Wellheads are susceptible to liquid leaks especially where the stuffing box ~~is~~ or large valves are poorly maintained ~~or when large valves are opened and then closed~~, which

~~often produces a~~ can result in noticeable amount of liquids, including hydrocarbons. If the liquid is allowed to stand ~~over an extended period~~, VOC emissions and related odors may be released to the atmosphere, and may lead to odor nuisance complaints from the local community.

Well Cellars

In most cases the wellhead resides in or above the well cellar, a small subsurface containment basin used to capture any leaking liquid from oil and gas extraction or maintenance or from workover of the well or wellhead. Well cellars can be lined or unlined and there can be one or more wellheads allocated to a well cellar. On average, a well cellar has approximate dimensions of 6 feet by 6 feet with a depth of between 5 feet to 8 feet. Since there needs to be access to wellheads for maintenance and sampling, well cellars are uncovered and can become sources of VOC emissions and associated odors when crude oil is collected and retained in this containment area ~~for an extended period of time~~.

Separation and Treatment

After the well fluids and gas reach the wellhead they are transferred to a treatment plant. At the treatment plant, the crude oil, natural gas, produced water and solid contaminants are separated and treated. A treatment plant may be simple or complex and can take many different forms depending on treatment needs. Typically, the treatment plant includes a well flow-line manifold in addition to separators, free water knockout vessels, heaters (if crude is heavy), heater-treaters, wash tanks, stock tanks, wastewater separators or oil/water separators, sumps, pits, ponds and a vapor recovery unit.

Some of the equipment that require permits by the SCAQMD include ~~American Petroleum Institute (API)~~large oil/water separators, tanks, vessels, heaters, boilers, vapor recovery units, internal combustion engines and clean-out sumps, which are in most cases part of the wastewater system permit unit, oil dehydration unit or water injection facilities. Open ditches also require a permit, but there are no active permits currently in the South Coast Air Basin. Wastewater associated with the separation and treatment process is regulated by Rule 1176 – VOC Emissions from Wastewater Systems adopted November 3, 1989.

The well fluids (oil/water) and gas mixture flows to a well manifold that connects with each well in the field. From the manifold, the mixture is directed to either a test or a production separator, which separates and measures the three phases separately and is used to determine the production of each well. Under normal conditions, the mixture flows to a production separator or free water knockout where gas is separated from the mixture. From there, the oil/water stream flows to a free water knockout vessel, a heater treater, a wash tank and an oil/water separation vessel where water is removed from the oil. After it is determined that there is a sufficient reduction of water content, the oil flows to an oil storage or stock tank. Upon sale, the oil flows through Lease Automated Custody Transfer (LACT) units for metering.

Gases removed from the oil during treatment may be further treated and then 1) sold to a utility; 2) used as fuel by the operator; 3) re-injected into the reservoir for pressure maintenance; or 4) vented to the atmosphere, a practice largely eliminated by the requirements of Rule 1148.1 which provides for the use of air pollution control devices in lieu of venting, except in the case of emergency upset conditions or certain smaller producing wells. Gas collected from separators and oil treaters, along with vapors from storage tanks, may be processed through a glycol dehydration unit. This unit removes the water from the gas before it is put into a sales pipeline or used ~~again in the dehydration process~~ as fuel, or re-injected into the subsurface. A common practice to control production gas from small to medium operations is to use a gas-fired heater that burns the facility's gas and produces heat to reduce the viscosity of the crude oil product. . Reducing the viscosity of crude oil facilitates the handling within the production operation or the transport via pipeline to the refineries. Some facilities use the production gas to fuel micro-turbines for onsite power needs. However, based on a review of permitted oil and gas production facilities, ten facilities have a permit for flares that may be used to burn excess or off specification gas.

The oily water collected from the separators and the oil treaters may flow directly to a sump or may flow to a water treatment facility prior to disposal. At the water treatment facility, the oil content of the water is reduced by skimming tanks, dissolved air flotation units, pits, filters or a combination of these. The water may be used on-site, discharged to the surface following proper treatment, or injected back into water injection wells or disposal wells. Vapor recovery is usually on all of the separation vessels and is piped back to the gas pipeline for dehydration.

Workover Rig Operations

Workover Rigs are mobile temporary derrick stands that allow the operator to access and replace worn out ~~push~~ sucker rods and production tubing~~piping~~. These rods are between 32 to 46 feet in length and are removed and ~~stored~~ staged vertically. The rods and the ~~piping~~ tubing are pulled up through a casing which ~~is filled with~~ contains oil and other ~~organic~~ liquid. As a result of their removal, the rods and ~~piping~~ tubing may be wetted with hydrocarbon liquid and have the potential to cause emissions and odor nuisances. While the amount of VOC emissions released to atmosphere is short-term, the odor potential is great, unless measures are taken to wipe excess material during removal, such as the use of a grommet.

Workover rigs are used primarily for maintenance on established production wells, and are typically powered by the internal combustion engine (ICE) used for transporting the rigs over the road to the site. These workover rigs typically use diesel fuel ICEs, with a trend to repower or purchase new rigs with diesel engines that meet CARB's new On-Road Heavy Duty Engines Tier IV standards. Workover rigs are generally smaller units with less power demands than drilling rigs. However, there are occasions where extensive maintenance work would require a supplemental electrical generator to provide additional power. These generators and the portable or temporary ICEs are a potential source of odors and particulate emissions.

Odor and Potential Health Effects

The presence of odors does not necessarily relate to the presence or absence of toxic air contaminants, and odor issues are generally addressed as public nuisance. Odor complaints, however, are often accompanied by reports of adverse effects such as headache and nausea.

As to whether odors can cause health effects, the American Thoracic Society (ATS), a scientific society that focuses on respiratory and critical care medicine, published its official guidelines as to what constitutes an adverse health effect in 1985, and updated these guidelines in 1999. The statement is intended to "provide guidance to policy makers and others who interpret the scientific evidence for the purpose of risk management."[1] The statement acknowledges that there are graduations in the degree of effects and also differentiate between an effect that is adverse from an effect that is merely a physiological response. The ATS statement indicates that air pollution exposures which interfere with the quality of life can be considered adverse. Thus odor-related annoyance should be considered adverse, even if nausea or headache or other symptoms are not present. In the ATS guidelines, odors are clearly listed as an adverse respiratory health effect.

Unpleasant odors have long been considered as warning signs of potential health risks. Such odors often elicit complaints of respiratory irritation, headache, nausea and other adverse symptoms. While the mechanism for the production of these effects is not known, these effects have been noted at concentrations of substances that produce unpleasant odors. Postulated mechanisms include neurological changes in sensory nerves that could influence symptom production in the absence of other toxicological effects.[2]

Regulatory History

Rule 1148.1

Rule 1148.1 was adopted on March 5, 2004 to implement Control Measure FUG-05 of the 2003 AQMP by reducing VOC emissions from well cellars and wellheads at oil and gas production operations through increased inspection and maintenance, and control of produced gas emissions, with additional regulatory considerations when located within 100 meters to sensitive receptors. Rule 222 - Filing Requirements for Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation II, traditionally used for simpler, low-emitting, packaged or off the shelf equipment, was concurrently amended to include well cellars and wellheads at oil and gas production facilities subject to Proposed Rule 1148.1 in the filing program, in lieu of conventional permitting.

[1] "What Constitutes an Adverse Health Effect of Air Pollution?", American Thoracic Society, 1999, http://www.thoracic.org/statements/resources/archive/airpollution1-9.pdf.

[2] "Science of Odor as a Potential Health Issue", Schiffman, 2005.

BACT and BARCT

The application of Best Available Control Technology and Best Available Retrofit Control Technology (BACT and BARCT) are required and implemented on control devices for the oil and gas production equipment. The current applicable Control Techniques Guidelines established in 1983 by EPA (EPA-450/3-83-007 1983/12 Control of Volatile Organic Compound Equipment Leaks from Natural Gas/Gasoline Processing Plants) has been incorporated into Rule 1173 Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants, and is considered BACT and BARCT for oil and gas production facilities. In addition, equipment-specific standards have been developed over time as technology evolves. Table 1 below summarizes current[3] BACT applicable to the industry.

Table 1. BACT for Fugitive Emission Sources at Natural Gas Plants and Oil and Gas Production Fields and Oil and Gas Production.

Subcategory/Rating/Size	VOC
Compressors, Centrifugal Type	Seal System with a Higher Pressure Barrier Fluid (04-10-98); and Compliance with AQMD Rule 1173 (12-5-2003)
Compressors, Rotary Type	Enclosed Seal System Connected to Closed Vent System (04-10-98); and Compliance with AQMD Rule 1173
Pressure Relief Valves	Connected to Closed Vent System or Equipped with Rupture Disc if Applicable (4-10-98); and Compliance with AQMD Rule 1173 (12-5-2003)
Pumps – In Heavy Liquid Service	Single Mechanical (4-10-1998); and Compliance with AQMD Rule 1173 (12-5-2003)
Pumps – In Light Liquid Service	Sealless Type if Available and Compatible, or Double or Tandem Seals and Vented to Closed Vent System (4-10-98); and Compliance with AQMD Rule 1173 (12-5-2003)
Sampling Connections	Closed-Purge, Closed-Loop, or Closed-Vent System (4-10-98); and Compliance with AQMD Rule 1173 (12-5-2003)
Valves, Fittings, Diaphragms, Hatches, Sight-Glasses, Open-Ended Pipes and Meters in VOC Service	Compliance with AQMD Rule 1173 (12-5-2003)
Combined Tankage	All Tanks Vented to: - Vacuum Gas Gathering System; or - Positive Pressure Gas Gathering System; or - Incinerator or Firebox; (1988)
Wellhead	All Wellheads Vented to : - Vacuum Gas Gathering System; or - Positive Pressure Gas Gathering System; or - Incinerator or Firebox; (10-20-2000)

SCAQMD Authority to Regulate Odors

The District is given broad authority to regulate air pollution from "all sources, other than emissions from motor vehicles." Health and Safety Code (H&SC) §40000. The

[3] Best Available Control Technology (BACT) Guidelines for Non-Major Polluting Facilities, as defined by Rule 1302 – Definitions. http://www.aqmd.gov/docs/default-source/bact/bact-guidelines/part-d---bact-guidelines-for-non-major-polluting-facilities.pdf?sfvrsn=4

term "air pollutant" includes odors [H&SC §39013]. Therefore, the District may regulate to control air pollution, including odors, from PAR1148.1 sources. In addition, the District has authority to adopt such rules as may be "necessary and proper" to execute the powers and duties imposed on the District by law. [H&SC §40702]. The District's legal authority to adopt and enforce the amendment to Rule 1148.1, establishing best management practices and requirements to reduce odors from oil and gas production wells also derives from H&SC §41700, which, in pertinent part, prohibits the discharge of air contaminants causing annoyance to the public. It further prohibits the discharge of air contaminants, such as odors, which "endanger the comfort, repose, health, or safety of any of those persons or the public, or that cause, or have a natural tendency to cause, injury or damage to business or property." [H&SC §41700]. The District's authority granted by H&SC 41700 to protect the public's comfort and health and safety provides for the regulation of facilities in order to prevent the discharge of odors before they cause nuisance or annoyance to the public.

In addition, H&SC §40001(b) authorizes the District to adopt rules and regulations, such as PAR1148.1, and provides, in relevant part, for the prevention and abatement of air pollution episodes which cause discomfort or health risks to a significant number of persons. PAR1148.1 is a reasonable and proper use of the District's regulatory authority.

Affected Industry

Operators of oil wells and well cellars are not required to obtain SCAQMD permits for that equipment and not all oil wells utilize well cellars. Only those facilities with equipment such as ~~API~~ large oil/water separators, tanks, vessels, heaters, boilers, internal combustion engines and clean-out sumps (part of the dehydration or wastewater system permit unit), and "control" equipment such as heaters, flares, gas treatment equipment, internal combustion engines, microturbines, and boilers would have SCAQMD permits. SCAQMD Rule 222 was amended on March 5, 2004 to include oil production well groups, which is defined as no more than four well pumps located at a facility subject to Rule 1148.1 – Oil and Gas Production Wells at which crude petroleum production and handling are conducted, as defined in the Standard Industrial Classification Manual as Industry No. 1311, Crude Petroleum and Natural Gas.

The number of affected facilities subject to Rule 1148.1, identified through SCAQMD permitting and filing systems, are summarized in Table 2 below:

Table 2. Permitted or Filed SCAQMD Oil and Gas Production Facilities, 2015

Category	Number of Facilities
Oil ~~Wells~~and Gas Production - Non-RECLAIM	329
Oil and Gas Production~~Wells~~ - RECLAIM	144
Total	**473**

ODOR MITIGATION WORK PRACTICES AND ASSOCIATED ACTIVITIES

Complaint Handling

SCAQMD currently manages complaints through the 1-800-CUT-SMOG hotline and through implementation of Rule 402 – Nuisance. Rule 402 prohibits any discharge of any material that may cause injury, detriment, nuisance, annoyance or discomfort to any considerable number of persons, with a large number of complaints typically associated with disagreeable odors. Currently, in order to pursue enforcement action under Rule 402, an odor must be verified at the complainant location, that same odor traced upwind to the source, and the source identified as either the boundary of a facility, or a device, equipment or unit. Once the odor is traced to either a facility or source, the complaint would become confirmed. Finally, multiple confirmed complaints called within the same timeframe would subject the source to a possible issuance of a Notice of Violation (NOV). For more frequent odor NOVs, conditions, through an Order of Abatement, may be issued to address ongoing odor issues emanating from a facility. Additionally, Rule 402 also includes provisions for damage to property.

Figure 2 outlines an overview of the typical complaint handling process, where consideration for NOV issuance is in the six or more confirmed complaint range. Where less than the NOV threshold number of complaints is established, but odors can be traced to an activity or equipment, the inspector would review applicable rules and permit conditions to determine if detected odors are attributable to potential non-compliance. Where a Rule 402 NOV is issued, the source would be subject to a more thorough and lengthy legal investigation and violation settlement.

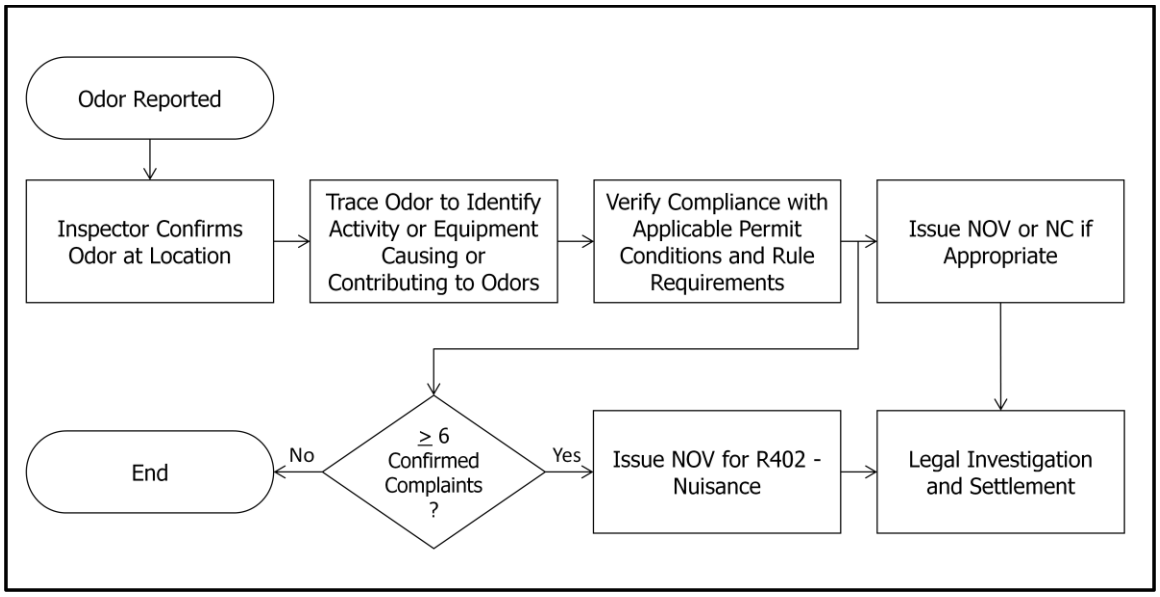


Figure 2. Typical SCAQMD Complaint Handling Process

It is not uncommon for complaints to be unconfirmed or for an odor causing event to fall short of the multiple complaint threshold for issuance of a Rule 402 NOV. Odors may be caused by infrequent or brief activities and are often short-term and fleeting. Pursuant to Rule 402, SCAQMD staff also responds to complaints involving property damage.

Complaint Communication

Although an inspector responding to a complaint typically communicates a summary of the initial field inspection, in some cases the complainant may have chosen to be anonymous, or the complaint call may have occurred off hours or late in the evening. In other cases, especially when the complaint or facility is not confirmed, the complainant may be left with the impression that no action has been or can be taken to address their complaint. Finally, even when an NOV is issued, the subsequent legal investigation process, as indicated in Figure 2 above, may not address the immediate informational needs of a complainant, who may continue to experience exposure to objectionable odors. A facility that takes specific corrective action to address the complaint driven odor causing activity or operation may not be acknowledged should similar odors be detected from another facility or from a separate odor causing event.

Complaint Data Analysis and Mapping

Staff reviewed complaint data associated with oil and gas production facilities, especially those that may be considered urban wells (i.e., within 1,500 feet of sensitive receptors). Table 3 below summarizes a subset of staff findings. Specifically, staff reviewed 100 out of 403 (roughly 25%) oil and gas production facilities, with only nine facilities identified as having more than one odor complaint, both confirmed and unconfirmed (alleged) over the last 5 years (2010 through 2014).

Table 3. Sample Complaint History, 2010 to 2014, Oil and Gas Production Facilities

Facility Name	Number of Complaints	402 NOVs	203 NOVs	1176 NOVs	1148.1 NOVs
AllenCo Energy INC	258	3	3	4	1
Angus Petroleum	106	0	0	0	0
*Freeport McMoran Oil	14	0	0	2	0
Holly Street Inc	8	0	0	0	0
**Freeport McMoran Oil	7	0	1	2	0
Amtek Construction	3	0	0	0	1
Oxy USA Inc	1	0	0	0	0
Matrix Oil Corp	1	0	0	0	0
Greka Oil & Gas Inc	1	0	2	0	0
Totals:	**399**	**3**	**6**	**8**	**2**

*1371 W. Jefferson Freeport McMoran Oil
** 2126 W. Adams Freeport McMoran Oil

The complainants' locations for the above facilities are displayed in a map, showing distances of 328 feet radius and 1500 feet radius from the center of the facility, representing the existing and proposed distances to sensitive receptors, respectfully. These maps are included as part of Appendix B – Sampling of Complaint History (2010 – 2014) – Oil and Gas Production Facilities of the Draft Staff Report.

Case Study: Allenco

Allenco Energy, Inc. (Allenco) is an oil and gas production facility located at 814 West 23rd Street in Los Angeles, surrounded by homes and multi-family units on the west and north, and Franklin Lanterman High School and Mount Saint Mary's College on the south and east, respectively. The facility has been in operation since the 1960's, and the first SCAQMD permits are dated March 1970, under ARCO Oil and Gas Company. The lease was taken over by St. James Oil Company in 1987, although production was shut down on January 27, 1998 in response to economic conditions. The facility restarted operations in May 2004 as the market for crude oil increased, and on September 16, 2009, Allenco took ownership of the facility. SCAQMD inspectors noted the production rate in the 15-20 barrels per day (bpd) range during an inspection late 2009, increasing to 100 bpd as noted in an inspection early 2011, although the more recent inspections noted a generally steady production rate of 80 bpd. Figure 3 below identifies Allenco and the proximity to various sensitive receptors.

Figure 3. Allenco Energy, Inc. and surrounding community.

Compliance and Complaint History

The following tables highlight the compliance history for Allenco between late 2010 and mid-2014. Over this period, the facility was cited for a total of eighteen Notices of Violation (NOV), including six for Rule 402 – Nuisance; six Notices to Comply (NC) were also issued over this time, primarily associated with inadequate adherence to administrative requirements, including recordkeeping. The facility was the subject of close to 300 complaints from the surrounding community, peaking at 192 in 2011, which also included the time in which the majority of the Rule 402 NOVs were issued. Complainants alleged Allenco operations had caused: strong odors; headaches; nausea; eye and respiratory irritations (asthma); and nose bleeds.

Table 4 summarizes the eighteen NOVs issued between 2010 and 2014.

Table 4. Notices of Violation Issued, Allenco Inc. – 2010 to 2014.

Date	NOV No.	Rule Number	Description
11/9/10	P53587	1148.1	Excess emissions observed from component in well cellar
01/02/11	P56960	1148.1	Excess emissions observed from component in well cellar
01/25/11	P53588	402	Leak in a water injection well
01/26/11	P53589	402	Lingering odors from clean-up operations due to leak in an injection well
01/27/11	P53590	402	Lingering odors from clean-up operations due to leak in an injection well
01/31/11	P51141	402	Vacuuming of by-product from a water injection tank
07/22/11	P53594	402	Old oil pipes being pulled from an idle well
07/27/11	P55619	1148.1 1173 1176 203(b)	• Excess emissions observed from component in well cellar • Open ended line • Cover permeable to VOCs • Operating equipment in poor working conditions
08/24/11	P55621	1173	Open ended line
09/06/11	P55622	1148.1	Excess emissions observed from component in well cellar
10/24/11	P53597	203(b) 201 1176	• Operating equipment in poor working conditions • Altering equipment without prior District approval • Leaving hatches open to tanks
07/28/11	P56971	1176	Excess emissions observed coming from sluiceway
02/21/12	P56972	1176	Cover permeable to VOCs
03/07/12	P53598	1148.1	Excess emission observed from component in well cellar
04/10/13	P50699	203(b) 206	• Failure to comply with Permit to Operate conditions • Failure to post Permits to Operate
08/08/13	P61502	402	Petroleum and masking solution odors present during water injection well rework activities
11/12/13	P61503	1176	Sump vent pipe venting directly to the atmosphere
11/19/13	P61504	1176 203(b)	• Two opening in the wastewater sump, two (2) VOC leaks (12,000 and 8,000 ppm) measured at a hatch on a storage tank, sewer line not completely enclosed • Failure to maintain roof of waste water tank in good operating condition

Table 5 summarizes the eight NCs issued between 2010 and 2014.

Table 5. Notices to Comply issued, Allenco Inc. – 2010 to 2014.

Date	NC No.	Compliance Requirement
08/20/10	E00890	Rule 203(b) - Repair vapor leak located on gas inlet line connected to gas turbine no. 1.
08/20/10	E00891	Rule 203(a) - Do not operate portable ICE rated greater than 50 HP without first obtaining CARB registration or AQMD permit.
10/25/11	D29396	H & S Code 42303 - Provide proof of registration or permit for mud pump no. 6.
03/13/13	E07814	Rule 203(b) - Maintain wastewater system in good working condition.
11/19/13	E07544	Provide oil, gas, and wastewater produced during the last two years in a monthly format.
11/19/13	E075454	Submit detailed schematic drawings identifying all components of the wastewater system and all associated air pollution control devices. Provide all inspection & repair records for wastewater system for the last two years.
02/11/14	E07546	Submit application for to secure required PCs for Oil/water/gas process and storage equipment prior to installation of such equipment. Submit application for VR and gas handling equipment to reflect operating process
04/23/14	E07548	Submit new apps. For P/O for mod. On crude oils/water water and gas

Corrective Actions and Revised Permit to Operate

Between January 2010 and September 2014, SCAQMD conducted over 150 inspections, including on-site inspections, a multi-agency inspection, and multiple community surveillances. SCAQMD conducted ambient air monitoring beginning in 2013, noting short-term elevated hydrocarbon concentrations, and conducted multiple town hall meetings.

SCAQMD prosecutors finalized settlement discussion with Allenco for fourteen NOVs issued between November 2010 through March 2012 for violation of Rules 203 – Permit to Operate, 402 – Nuisance, 1148.1 – Oil and Gas Production Wells, 1173 – Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum facilities and Chemical Plants. The settlement included $200,000 in voluntary site improvement expenses and $61,000 penalty (credited $46,753 for work performed at Mount Saint Mary's College and cash paid in the amount of $14,247).

Beginning late 2013, Allenco voluntarily ceased production and began making necessary repairs and changes to operational procedures, including pumping down and repairing affected tanks, hard piping processes, upgrading the air pollution control system and adding odor mitigation measures during well maintenance.

A revised Permit to Operate was issued to Allenco on May 6, 2015. The revised permit contains Odor Mitigation requirements, including cross-reference to all applicable SCAQMD rules, required use of a rubber grommet in conjunction with any pulling of any piping or rods, and additional recordkeeping and reporting associated with drilling, well completion, or rework, repair, or maintenance activity.

SUMMARY OF PROPOSED AMENDMENT

The purpose of Proposed Amended Rule (PAR) 1148.1 – Oil and Gas Production Wells, is to provide enforceable mechanisms to reduce odor nuisance potential and to update the rule to promote clarity, consistency and enforceability.

(a) Purpose

The purpose section of PAR1148.1 includes clarifying references to emission reductions in toxic air contaminants (TAC) and total organic compounds (TOC), concurrent with the VOC emission reductions achieved through the existing rule requirements. In addition, rule language has been inserted to clarify that both operation and maintenance activities of wellheads are part of the purpose, and reference to assisting in reducing regional ozone levels and to preventing public nuisance, is added to reflect the proposed enforceable mechanisms aimed at reducing odor nuisance potential.

(b) Applicability

PAR1148.1 applies to wellheads and well cellars at onshore facilities as well as oil and gas handling operations and maintenance activities where petroleum is produced, gathered, separated, processed and stored. These facilities are also currently subject

to other rule requirements, Rule 463 – Organic Liquid Storage, Rule 1176 – VOC Emissions from Wastewater Systems which including sumps and wastewater separator, at oil and gas production wells. Production oil and gas wells are subject to Rule 1173 – Control of Volatile Organic Compounds Leaks and Releases from Component at Petroleum Facilities and Chemical Plants, and the proposed amended rule language is updated to cross-reference these rules.

(c) Definitions

Key definitions are proposed to be added to the definition section to support the additional enforceable mechanisms and also to promote consistency and clarify.

New Definitions Incorporated from Other SCAQMD Rules

Definitions have been incorporated from other rules to ensure consistency. Table ~~4~~ 6 below identifies the new PAR1148.1 definitions and the respective rule that have been incorporated into the proposed amended rule:

Table 4~~6~~. New PAR1148.1 Definitions incorporated from other SCAQMD Rules

PAR1148.1 Section	PAR1148.1 New Definition	SCAQMD Rule Incorporated From
(c)(2)	Component	**Rule 1173** - Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants
(c)(~~5~~7)	Heavy Liquid	
(c)(~~6~~8)	Leak	
(c)(~~7~~9)	Light Liquid	
(c)(~~10~~12)	Organic Liquid	**Rule 463** - Organic Liquid Storage
(c)(~~18~~20)	Volatile Organic Compound	**Rule 102** - Definition of Terms
(c)(~~19~~21)	Wastewater	**Rule 1176** - VOC Emissions from Wastewater Systems

New Definition to Support Investigation Requirement

A definition for Confirmed Oil Deposition Event has been added to support the requirement to investigate the specific cause of an airborne release event that results in property damage as follows:

(c)(5) **Confirmed Oil Deposition Event** *is an occurrence of property damage due to the airborne release of oil or oil mist from an oil and gas production facility, as verified by District personnel.*

New Definitions to Support Odor Mitigation Requirements

Definitions for Confirmed Odor Event, Odor, Specific Cause Analysis and Responsible Party have been added to support the new incremental action levels associated with the proposed amendment's additional requirements to prevent public nuisance associated with odors.

A more detailed discussion of the odor mitigation requirements follows in the requirements section of this report.

(c)(2) **Central Processing Area** *is any location within an oil and gas production facility where pressurized phase separation or treatment of produced well fluids, including any produced oil, water or gas, occurs. A location that includes only oil producing wells and associated equipment not involved in pressurized phase separation or treatment, is not considered to be a central processing area.*

(c)(~~3~~4) **Confirmed Odor Event** *is an occurrence of odor resulting in three or more complaints by different individuals from different addresses, and the source of the odor is verified by District personnel.*

The number of Confirmed Odor Events is the metric used to determine the appropriate action taken by an affected facility in response to odor complaints.

(c)(~~12~~14) **Responsible Party** *is a corporate officer for a corporation and a responsible party for a partnership or sole proprietorship the general partner or proprietor, respectively.*

PAR1148.1 requires certification by the Responsible Party for any submitted Specific Cause Analysis reports.

(c)(~~14~~16) **Specific Cause Analysis** *is a process used by an owner or operator of a facility subject to this rule to investigate the cause of a confirmed odor event or confirmed oil deposition event, identify corrective measures and prevent recurrence of a similar event.*

A Specific Cause Analysis is an important step in mitigating odor or oil deposition issues and will result in requirements for the facility to generate a report summary and propose corrective actions.

Finally, a definition for **Water Injection Well** (c)(~~20~~22) has been added to PAR1148.1 to improve rule clarity and support the requirements associated with these equipment.

Modified Definitions

The definition for Sensitive Receptor has been updated for consistency with other SCAQMD rules that also refer to sensitive receptors, including Rule 1148.2.

(c)(~~13~~15) **Sensitive Receptor** ~~*is a school (*~~*means any residence including private homes, condominiums, apartments, and living quarters; education resources such as preschools and kindergarten through grade twelve (k-12) schools;~~ licensed daycare centers~~;~~ and health care facilities such as hospitals~~,~~ or ~~convalescent home~~retirement and nursing homes. A sensitive receptor includes long term care hospitals, hospices, prisons, and dormitories or similar live-in housing.*

Although other SCAQMD rules do not specify that daycare centers be licensed, staff agrees with stakeholder feedback that non-licensed daycare centers would be more difficult for regulated facilities to identify when establishing internal procedures for potentially affected wells, and that non-licensed daycare centers would more than

likely be housed in residences, which are already included in the proposed amended definition.

(d) Requirements

PAR1148.1 adds a requirement for pumping out or removing organic liquid accumulated in the well cellar by the end of the day following three complaints in the day as verified by District personnel (d)(3).

PAR1148.1 also adds additional best practice requirements to assist in the identification and prevention of potential odor issues, as well as additional odor mitigation requirements based on exceedances of specified confirmed odor event thresholds (d)(~~6~~7).

In addition to the change in the definition of a Sensitive Receptor noted above, the more stringent requirements applicable to wells located close to a sensitive receptor are proposed to become applicable when the distance is 1,500 feet or less rather than the existing distance requirement of 100 meters (328 feet).

Effective 30 days after adoption, an oil and gas production facility, under the proposed amendment, will be required to utilize a rubber grommet designed for drill or production piping to remove excess or free flowing fluid from piping that is removed during any maintenance or drill piping or rod replacement activity that involves the use the use of workover rig. (d)(~~10~~11)

Effective 180 days after adoption, ~~the~~ oil and gas production ~~facility~~facilities with central processing areas located within 1,500 feet of a sensitive receptor, under the proposed amendment, will be required to operate and maintain a monitoring system that will alarm ~~and~~ or notify operators at a central location or control center. Oil and gas production facilities generally monitor ~~equipment~~ for ~~safety~~ process or fire protection purposes to comply with a broad range of federal, state or local building or fire safety regulations, and thus typically have a gas detection program. In addition, these systems can support implementation of the General Duty Clause of the Clean Air Act, Section 112(r) as part of a facility hazard assessment and accidental release prevention program, typically from a central location~~,~~. ~~some~~ Some facilities ~~utilizing~~ utilize control centers that also allow for monitoring and controlling operating parameters to support efficiency or serve as an indicator for leak related emissions. ~~PAR1148.1 requires that such monitoring systems incorporate any emissions monitoring and associated alarm thresholds indentified in any approved SCAQMD operating permit or approved odor mitigation plan. (d)(11)~~

Finally, effective 30 days after adoption, an oil and gas facility, under the proposed amendment, shall post instructions for the public related to odor complaints. The posted instructions shall be provided in a conspicuous manner and under such conditions as to make it likely to be read or seen and understood by an ordinary individual during both normal operating and non-operating hours. The instruction shall include the following minimum information in English and Spanish:

- Name of the faculty;
- Facility call number; and,
- Instructions to call the South Coast Air Quality Management District complaint hotline at the toll free number 1-800-CUT-SMOG or equivalent information approved in writing by the Executive Officer. (d)(~~12~~13)

A sample layout of the instructions is included in Appendix C – PAR 1148.1 (d)(~~12~~13) – Sample Information Signage.

(e) Operator Inspection Requirements

The proposed amendment continues the visual inspection requirement for stuffing boxes or produced gas handling and control equipment, but increases the distance requirement from sensitive receptors from 100 meters (328 feet) to 1,500 feet that changes the weekly inspection requirement to daily as follows:

As conducted by facilities as a general practice already, the operator shall visually inspect:

(e)(1)(C) Any stuffing box or produced gas handling and control equipment located ~~100 meters~~ 1,500 feet or less from a sensitive receptor daily. Receptor distance shall be determined as the distance measured from the stuffing box or produced gas handling and control equipment to the property line of the nearest sensitive receptor.

The proposed amendment requires monthly TOC measurement for any component that has been identified as a potential odor source through a submitted specific cause analysis report. The specific cause analysis report, described in the next section of this staff report, is required of oil and gas production facilities following notification from SCAQMD of a confirmed odor event or confirmed oil deposition event. The additional monthly measurements are required until six consecutive months of measurement do not exceed the applicable leak rate thresholds for the subject component, after which time the underlying Rule 1173 inspection frequencies (typically quarterly) would apply. The leak rate thresholds are 100 ppmv for heavy liquid components and 500 ppmv for light liquid/gas/vapor/components. (e)(5)

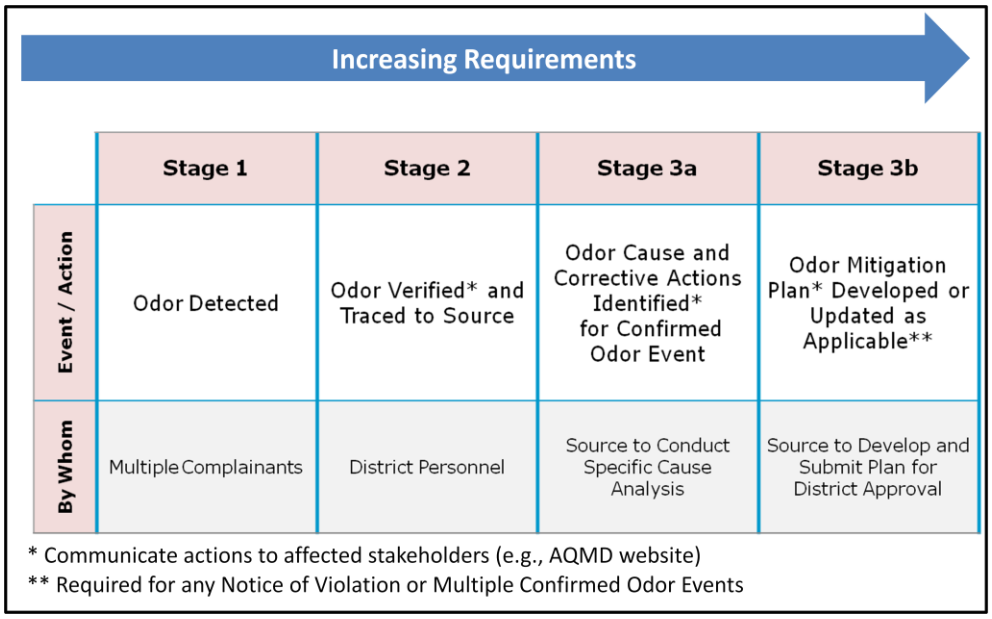
~~(f) Odor~~ Mitigation Requirements

The proposed amendment expands upon the existing SCAQMD complaint handling process described in Figure 2 above, for facilities located within 1,500 feet of a sensitive receptor, by adding two additional action levels based on the number of Confirmed Odor Events as depicted in Table ~~5~~ 7 as steps 3a and 3b.

These two proposed additional action levels are intended to provide opportunities to more readily respond to and communicate complainant concerns. As noted previously, under the existing complaint handling process, complainants may not be aware of the progress made towards odor issue resolution. An additional communication mechanism through use of the SCAQMD web page, the creation of the Confirmed Odor Event as a metric, and the proposed requirements for a Specific

Cause Analysis and Odor Mitigation Plan can both serve to demonstrate good faith efforts on the part of the regulated facility as well as close the current communication gap.

Table ~~5~~7. Proposed Additional Complaint Action Levels for Facilities Located within 1,500 feet of a Sensitive Receptor



(f)~~(1)~~ Specific Cause Analysis

Under the proposed amendment, for facilities located within 1,500 feet of a sensitive receptor, upon determination by an SCAQMD inspector of a Confirmed Odor Event (confirmed odor from three or more independent complainants), a Specific Cause Analysis is required. The affected facility is required to complete and submit a Specific Cause Analysis report within 30 calendar days following receipt of written notification from the Executive Officer. Similarly, a Specific Cause Analysis and report is required following receipt of written notification from the Executive Officer for any Confirmed Oil Deposition Event.

The Specific Cause Analysis includes a brief review of the activities and equipment at the facility identified as contributing or causing the odor or oil deposition in question in order to determine the contributing factors and ultimately the corrective actions associated with the event. In addition, any applicable SCAQMD rule or permit condition shall be identified and reviewed for compliance with the requirements. Furthermore, the Specific Cause Analysis should assess proper implementation of internal procedures or preventative maintenance schedules, and if the procedures should be updated to address any performance gaps or adequate training of operators. The scope of the Specific Cause Analysis is limited to the possible origins and causes of the Confirmed Odor Event or Confirmed Oil Deposition Event, and is a more formal version of the current practice by SCAQMD inspectors when odors or oil deposition are traced back to a specific source.

~~(f)(2)~~(g) Odor Mitigation Plan

Under the proposed amendment, for facilities located within 1,500 feet of a sensitive receptor, upon determination by an SCAQMD inspector of the occurrence of three or more Confirmed Odor Events within a six month period, or the issuance of a single odor related NOV under Rule 402 – Nuisance, an Odor Mitigation Plan will be required. The affected facility is required to complete and submit an Odor Mitigation Plan (OMP) within 90 calendar days following receipt of written notification from the Executive Officer. In addition, for any facility with an existing approved OMP, an update to the plan is required under the proposed amendment following the occurrence of an additional three or more Confirmed Odor Events over a subsequent six month period following the last plan approval, or following the issuance of an odor related NOV under Rule 402 – Nuisance subsequent following the last plan approval. (g)(1)

~~(f)(2)(B)~~(g)(2) Odor Mitigation Plan Elements

An approved OMP must identify all the activities and equipment that may contribute or may have contributed to a confirmed odor event, and the internal procedures and requirements used to manage them. As such, the proposed amendment requires that Odor Mitigation Plans identify oil and gas production and wastewater generation equipment and activities, including both normal and spill or release management control operations, with corresponding identification of potential or actual sources of emissions, odors, frequency of operator inspection and history of leaks. Also the plan is required to identify activity involving drilling, well completion or rework, repair, or maintenance of a well, which notes the sources of emissions and odors, odor mitigation measures, processes for responding to odors and odor complaints, and procedures used for odor or emissions monitoring at the site and fence line. The facility will also be required to identify emission points and emission or leak monitoring used for all wastewater tanks, holding, knockout, and oil/water separation vessels, including any pressure relief devices or vacuum devices attached to the vessels, with provisions for recording of releases from such devices. Finally, any equipment or activity identified as part of any previously submitted Specific Cause Analysis report will also be required.

~~(f)(2)(C)~~ (g)(3) Odor Monitoring and Mitigation Requirements

Because an OMP serves as the collection of best practices applicable to the affected facility, the proposed amendment identifies a list of odor monitoring and mitigation requirements to include within the plan. Table ~~6~~ 8 contains a list of these requirements.

Table ~~6~~8. Proposed Odor Monitoring and Mitigation Requirements

PAR1148.1 Odor Monitoring and Mitigation Requirement	Description
Odor Surveillance	Continual odor surveillance downwind at the perimeter of the property at all times during drilling, well completion, or rework, repair, or maintenance of any well, including water injection wells, recorded hourly. Equivalent odor monitoring equipment may be used in lieu of odor surveillance, subject to approval.
	If odors are detected from odor surveillance or odor monitoring at the perimeter of the facility, ~~all~~ and confirmed from drilling, well completion, or rework, repair, or maintenance, the associated drilling, well completion, or rework, repair, or maintenance of any well will discontinue until the source or cause of odors are determined and mitigated in accordance with measures previously approved.
Well Piping, Tubing and Rod Management	Any removed drill piping or production tubing and ~~drill~~ any removed sucker rods shall be managed through written procedures that ensures that potential odor producing emissions are minimized through means such as ~~use of a tarp or similar covering or by~~ storing within an enclosed area, or equivalent.
Tighter Leak Detection and Repair (LDAR)	Reduce the required repair times for components subject to Rule 1173 LDAR to the lowest schedule of one calendar day with an extended repair period of three calendar days (rather than the seven day repair time allowance and seven day extended repair period).
Facility Specific Best Practice	Any corrective action identified in a Specific Cause Analysis report previously submitted by the facility.
Improved Monitoring	Review Specific Cause Analysis report and identify improvements to existing monitoring systems required pursuant to paragraph (d)(12) or parameters for a new monitoring system installation. Establish a schedule for any identified improvements or installations subject to Executive Officer approval.
Feasibility Assessment	For any odor mitigation or monitoring requirement identified above determined by the facility to not represent an appropriate best practice for inclusion in the OMP, an evaluation and documentation that states the reason why such provision is not feasible to include, subject to approval by the Executive Officer, must be included in the OMP.

The SCAQMD recognizes that all requirements listed in Table ~~6~~ 8 may not apply to all facilities or be related to the source of any confirmed odor events or associated notices of violation, and therefore the odor miti~~a~~gation plan should indicate why the listed requirement is either not applicable or feasible in the OMP.

The owner and operator of an oil and gas production facility shall comply with all provisions of an approved OMP. Violation of any of the terms of the plan is a violation of this rule.

(~~g~~h) Recordkeeping Requirements

Facility operators are required to maintain records of inspections, repair activities, and the conditions that would require them to pump out their well cellars. Records of data collected must be maintained for a period of three years and a minimum of five years for all Title V facilities. The proposed amendment requires that all records and other applicable documents required as part of an Odor Mitigation Plan also be maintained at the facility or facility headquarters for a period of three years or a period of five years for a Title V facility and that such records and applicable documents be made available to the Executive Officer upon request.

(~~h~~i) Test Methods

PAR1148.1 includes additional test methods incorporated from Rule 1173 associated with implementation of similar leak detection and repair requirements, and includes test methods for:

- VOC content by ASTM Method D 1945 for gases, SCAQMD Method 304-91 for liquids; percent VOC of a liquid evaporated at 150º C (302º F) shall be determined according to ASTM Method D86. (~~h~~i)(3)

- Flash point of heavy liquids by ASTM Method D93. (~~h~~i)(4)

(~~i~~j) Exemptions

Rule 1148.1 currently provides an exemption for certain activities that may be in conflict with a written company safety manual or policy (~~i~~j)(2). PAR1148.1 updates this exemption by clarifying that oil and gas production facilities must demonstrate that the written company safety manual or policy complies with applicable industry safety standards, in order to provide additional information to determine whether an activity from which the exemption is claimed would have posed a safety concern. (~~i~~j)(2)

Finally, PAR1148.1 includes amended language to improve readability and update rule section numbering.

EMISSION INVENTORY

Staff does not expect any quantifiable emission reductions or increases because the proposed amendment does not change any VOC standards, and is primarily intended to provide enforceable mechanisms to reduce nuisance odor potential and is otherwise administrative in nature.

COST ANALYSIS AND SOCIOECONOMIC IMPACTS

Introduction

PAR 1148.1 reflects best practices that have been widely implemented in the industry. To ensure continual implementation of these practices, PAR 1148.1 includes additional requirements as part of developed and approved OMP odor

mitigation measures. These measures are contingent upon three confirmed odor events at an Oil and Gas Production facility within a six month period or if an Oil and Gas production facility receives a Notice of Violation for a Rule 402 Nuisance violation. If either of these conditions exists, the measures in the first ~~four~~ three rows of Table ~~7~~ 9 (shaded rows) could be required either in its entirety, individually, or in a combination depending on site-specific circumstances, and the specific cause of the confirmed odor event or notice of violation that triggered the OMP requirement.

Based on a five year review of historical complaint data, it is expected that potentially a maximum of three facilities would have fallen into this category. The average facility affected would have six affected wells and on average these wells would be maintained or reworked twice each year, with each related activity occurring over 10 to 12 hours per day.

The following represents a conservative cost estimate for the implementation of the odor mitigation measures. In some cases, based on the development through a review of the specific cause analysis or notice of violation investigation, the measures noted below may not be applicable to the affected facility and would not be included as part of a final approved OMP.

Table ~~7~~9. PAR 11481.1 Potential ~~OMP~~ Improvement Categories.

Enclosure or Equivalent
~~Tarping or Covering~~
Surveillance/Repair/Maintenance
Monitoring Systems – OMP
Additional LDAR
Immediate Well Cellar Vacuum Truck
Monitoring Systems
Rubber Grommet

Odor Mitigation Plan Improvement Measures

Enclosure or ~~Tarping~~Equivalent

During repair and maintenance periods, the lift rods are replaced in oil and gas wells. The lift rods are removed and ~~stored~~ staged vertically, and since this is an elevated activity (greater than 40 ft. in height), it can result in hydrocarbon vapors that travel offsite if there is sufficient wind. An enclosure structure, used in some oil and gas facilities, could curtail odor complaints by minimizing exposure to cross-winds within these structures. Staff has determined that affected facilities would use an existing structure rather than construct an enclosure around a reworked derrick, especially when there are other options for minimizing expose to cross winds and odors ~~such as plastic tarps~~. Lift connector rods are removed vertically and stored horizontally and could also be ~~covered with plastic tarps or similar coverings~~ stored

within an enclosure or equivalent to limit cross-wind exposure and resultant potential odors. The cost of an enclosure structure is estimated to be $20,000 to $50,000. The annualized cost of enclosure for three potentially affected facilities is estimated at between $15,837 and $18,450.

~~It also is assumed that each potentially affected facility would use up to six tarps, twice a year for six wells. The cost of each tarp is estimated at $14.00. The annual cost of this requirement for three affected facilities over five year period is estimated at $600.~~

The proposed amendment allows for an equivalent method for minimizing potential nuisance causing emissions from this maintenance activity and facilities would be responsible for proposing and demonstrating effectiveness as part of the OMP submittal process. Staff expects any proposed equivalent methods to require less capital than the estimated costs for an enclosure structure. Affected facilities could use a wind screen to limit cross wind exposure and potential odors as an example of an equivalent option lower in cost to use of a fixed enclosure. Based on discussions with vendors, the cost of renting a free-standing 200 linear foot by 8 foot high wind screen is estimated at $1,200 for six months[4,5]. The annual cost of using wind screens in this configuration for three potentially affected facilities would be estimated at $7,200, although staff expects that lower cost options could be available for shorter timeframes or configurations, and based on Odor Mitigation Plan approval.

Surveillance During Repairs and Maintenance

The surveillance of the perimeter of an oil and gas production facility during specific repair and maintenance activities can require one or more personnel to traverse the perimeter of a facility during operations and this activity would incur a moderate increase in labor cost. If surveillance personnel detect odors related to the specific repair or maintenance activity, the facility is required to cease operation until the source of the odor is determined and mitigated after which operation is resumed. Based on the May 4, 2014 BLS, Occupational Employment Statistics[6], the labor cost for surveillance is estimated to be $25-$30 per hour. Based on discussion with industry, each affected facility would expect to use 20 hours of surveillance for each of the six affected wells per year. The annual cost of surveillance for the three potentially affected facilities over a five-year period is estimated to be $1,980.

Other Odor Mitigation Measures

Additional Leak Detection and Repair (LDAR) inspection would be required when a submitted Specific Cause Analysis report identifies a leaking component as the cause of a Confirmed Odor Event. This requirement would include two additional inspections per quarter (3 monthly inspections each quarter). The cost of each

[4] http://www.rentnational.com/fence-windscreen-rentals.aspx
[5] http://www.fencescreen.com/?gclid=CjwKEAjwqqmsBRDGy_3h_eS80jYSJACS95CvlDSkghtYBOoPVR5GTWjIHJgX9cOSniI-gEbvVShb1RoCHPbw_wcB
[6] http://www.bls.gov/oes/current/oes_ca.htm#47-0000

inspection and reports preparation is excepted to be $60.00 per hour. The inspection requires a two-person team on a eight hour shift, most oil field components can be inspection in this period of time. The annual cost for this requirement is $1,152, or less if six consecutive monthly inspections indicate no leaks.

Where the source of the odor is confirmed to be from an oil well cellar the proposed amendment requires immediate (no later than the end of the day) removal of the oil from the cellar. A vacuum truck would be employed for the removal, potentially in addition to the vacuum truck typically employed to remove at the end of the job, which may add an additional day's cost. The average cost for renting a DOT vacuum truck is $1,100 per day and the annual cost for the additional pump out is expected to be $3,300. The administrative cost associated with compliance with this section of the rule is expected to be minimal.

Monitoring Systems and Rubber Grommets

The ~~other~~ final two measures are required for all facilities. ~~The f~~Facilities with central processing areas located within 1,500 feet of a sensitive receptor are required to operate and maintain a centrally located monitoring/alarm system. In addition, ~~Rubber~~ rubber grommets must be applied to the ~~lift connector~~ drill piping, production tubing and sucker rods squeeze excess hydrocarbon liquid from them ~~rods~~ and prevent vapors from becoming air-borne.

Most ~~F~~facilities with central processing areas currently have basic monitoring system in place to ~~address~~ evaluate process or fire safety and to implement the General Duty Clause of the Clean Air Act, Section 112(r) as part of a facility hazard assessment and accidental release prevention program. ~~many~~ Some facilities also have more sophisticated systems for process monitoring up to remote process control. Although based on conversations with many urban based facility operators indicate that the proposed monitoring requirements for facilities with central processing areas located within 1,500 feet are reflected by currently existing systems, staff is including a cost estimate for 5% of the total facility population, to account for any facilities that may not have been accounted for. The cost of a centralized monitoring system is estimated to be $8,000 to $12,000. The annualized cost of centralized monitoring systems for 24 potentially affected facilities (approximately five percent) is estimated at between $30,408 and $35,424.

The estimated cost to provide additional support for electronic monitoring of additional parameters for any facility that becomes subject to an OMP that would also be required to integrate additional process monitoring would include the additional cost for software, hardware and installation. Software cost can range between $2,000 to $20,000, utilizing either existing facility hardware in the form of a dedicated CPU, keyboard and interface, or an additional dedicated CPU at an additional cost of $1,000, or a rough average per facility cost of $12,000. Alternatively, facilities subject to additional monitoring under an OMP may supplement existing systems through use of VOC monitoring stations. A gas sensor based system (see examples from Appendix A – Monitoring Systems for the Oil and Gas Production Industry), consisting of four detectors routed to a controller is estimated at roughly $2,500 to

$2,600 per monitoring point. Using an estimated per facility cost of $12,000 per facility, the annualized cost of additional monitoring that may be required for the three facilities estimated to be subject to OMP over a five-year period is between $3,800 and $4,430.

Under PAR 1148.1, all the identified ~~470~~ 473 affected facilities would be required to install rubber grommets to minimize the amount of excess hydrocarbons during rod removal activities. The cost of each rubber grummet is estimated at $10.[7] It is assumed that each affected facility would operate, on average, six wells and would need to replace each rubber grommet twice per year. The annual cost of this requirement is estimated to be $~~56,400~~56,760.

Table ~~8~~ 10 presents the potential annual cost of PAR 1148.1 by the ~~OMP~~ improvement categories. The total projected annual cost of PAR 1148.1 is estimated to be $~~78,377~~113,238 to $~~81,620~~121,494. The one time capital cost of enclosures and monitoring systems are annualized over ten years with between one to four percent real interest rate.

Table ~~8~~10. Potential Cost of PAR 1148.1 by ~~OMP~~ Improvement Categories.

~~OMP~~ Improvements	Estimated Unit Cost Per Facility	Total Cost per year for Three Affected Facilities	Total Annual Cost
Enclosure or Equivalent	$50,000	$150,000	** $15,837 to $18,450
Surveillance/Repair/Maintenance	$3,300	$9,900	*$1,980
Monitoring Systems – OMP	$12,000	$36,000	** $3,800 to $4,430
Additional LDAR	$1,920	$5,760	*$1,152
Immediate Well Cellar Vacuum Truck	$1,100	$3,300	$3,300
Monitoring Systems	$12,000	$288,000 for 24 Facilities	** $30,408 to $35,424
Rubber Grommet	$120	All Facilities	~~$56,400~~ $56,760
Total Annual Cost			**~~$82,469~~ $113,238** to **~~$85,712~~ 121,494**

*The estimated costs will incur every five years, as such annual cost is one-fifth the total estimated costs
**One-time cost is annualized over ten years with between 1% to 4% real interest rate

[7] http://www.delcity.net/store/Rubber-Grommets/

It has been a standard socioeconomic practice that, when the annual compliance cost is less than one million current U.S. dollars, the Regional Economic Impact Model (REMI) is not used to simulate jobs and macroeconomic impacts. This is because the impact would most likely be diminutive and would fall within the noise of the model. REMI results constitute a major component of the SCAQMD's socioeconomic analysis. Therefore, when annual compliance cost is less than one million dollars and REMI is not used, the socioeconomic report could be brief and included in the staff report, unless otherwise determined on a case-by-case basis.

INCREMENTAL COST EFFECTIVENESS

Under Health and Safety Code § 40920.6, the SCAQMD is required to perform an incremental cost analysis when adopting a Best Available Retrofit Control Technology (BARCT) rule or feasible measures required by the California Clean Air Act. To perform this analysis, the SCAQMD must (1) identify one or more control options achieving the emission reduction objectives for the proposed rule, (2) determine the cost effectiveness for each option, and (3) calculate the incremental cost effectiveness for each option. To determine incremental costs, the SCAQMD must "calculate 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." Staff reviewed the current standards throughout the state and determined that PAR1148.1 represents BARCT for the operation of oil and gas production wells because there are no other more stringent limits available. ~~Although i~~Implementation of PAR1148.1 is anticipated to reduce~~s~~ the potential for nuisance odors~~, . it is not anticipated to result in emission reductions~~ However, because the proposed requirements are primarily event-driven based on odors and are non-routine in nature, emission reductions that are permanent and quantifiable cannot be estimated, and therefore ~~no~~ an incremental cost analysis is not required under Health and Safety Code § 40920.6.

COMPARATIVE ANALYSIS

Health and Safety Code Section 40727.2 requires a comparative analysis of the proposed rules and all existing federal air pollution control requirements, as well as existing or proposed SCAQMD rules and regulations that apply to the same equipment or source type. There are no federal air pollution control requirements that apply to wells or well cellars. There are currently three SCAQMD rules that regulate the emissions of fugitive VOCs at Oil and Gas Production facilities, one rule that exempts most oil production equipment from permit requirements and one rule that requires filing for oil production equipment that is exempt from permit. In addition, one SCAQMD rule requires notification and reporting for well drilling, well completion, and well reworks activity, and SCAQMD also has a rule to address odors that contribute to public nuisance. Staff has determined that PAR1148.1 does not conflict with the following rules because any similar requirements have been directly incorporated or cross-referenced into the rule language.

Rule 1148 – Thermally Enhanced Oil Recovery Wells

Rule 1148 applies to Thermally Enhanced Oil Recovery Wells and limits VOC emissions to 4.5 pounds per day or less per steam driven well.

Rule 1148.2 – Notification and Reporting Requirements for Oil and Gas Wells and Chemical Suppliers

Rule 1148.2 establishes requirements for owners or operators of onshore oil and gas wells within SCAQMD's jurisdiction to notify the Executive Officer when conducting well drilling, well completion, and well reworking activities that involve production stimulation activities such as hydraulic fracturing, gravel packing and/or acidizing, and also requires emissions and chemical reporting. Rule 1148.2 does not apply to continuous operations at oil and gas well production activities.

Rule 1173 – Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants

Rule 1173 – Fugitive Emissions of Volatile Organic Compounds applies to oil and gas production fields, natural gas processing plants and pipeline transfer stations and includes requirements aimed at reducing VOC leaks from components such as valves, fittings, pumps, compressors, pressure relief devices, diaphragms, hatches, sight glasses and meters.

Rule 1176 – VOC Emissions from Wastewater Systems

Rule 1176 applies to wastewater systems and associated control equipment located at petroleum refineries, onshore oil production fields, off-shore oil production platforms, chemical plants and industrial facilities. Sumps and wastewater separators are required to be covered with either a floating cover equipped with seals or a fixed cover, equipped with a closed vent system vented to an Air Pollution Control system.

Currently, under Rule 1176 (i)(5)(H), well cellars used in emergencies at oil production fields are exempt if clean-up procedures are implemented within 24 hours after each emergency occurrence and completed within ten (10) calendar days.

Rule 219 – Equipment Not Requiring a Written Permit Pursuant to Regulation II

All wellheads, except for those with steam injection are exempt from written permit requirement per Rule 219 (n)(1) – Natural Gas and Crude Oil Production Equipment.

Rule 222 – Filing Requirements for Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation II

Rule 222 requires filing for Oil Production Well Groups, defined by the rule as no more than four well pumps located at a facility subject to Rule 1148.1 – Oil and Gas Production Wells at which crude petroleum production and handling are conducted, as defined in the Standard Industrial Classification Manual as Industry No. 1311, Crude Petroleum and Natural Gas.

Rule 402 – Nuisance

Rule 402 prohibits the discharge of any material that causes injury, annoyance nuisance or damage to property to a considerable number of people. Over the years the development of urban areas placing sensitive receptors closer to established oil field production sites have resulted in an increase in the number of complaints.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Pursuant to California Environmental Quality Act (CEQA) Guidelines §15252 and §15162 and SCAQMD Rule 110, the SCAQMD has prepared an Environmental Assessment (EA) for Proposed Amended Rule 1148.1. The environmental analysis in the Draft EA concluded that Proposed Amended Rule 1148.1 would not generate any significant adverse environmental impacts. The Draft EA was released for a 30-day public review and comment period from April 29, 2015 to May 28, 2015. Subsequent to release of the Draft EA, modifications were made to the proposed project and some of the revisions were made in response to verbal and written comments on the project's effects. 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, nor 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 §15073.5 and §15088.5. Therefore, the Draft EA is now a Final EA and is included as an attachment to this Governing Board package. Prior to making a decision on the proposed amendments to Rule 1148.1, the SCAQMD Governing Board must review and certify the Final EA as providing adequate information on the potential adverse environmental impacts of the proposed project.

FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY CODE SECTION 40727

Health and Safety Code Section 40727 requires that prior to adopting, amending or repealing rules, the SCAQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication and reference, based on relevant information presented at the hearing. The findings are as follows:

Necessity: The SCAQMD Governing Board has determined that a need exists to adopt Proposed Amended Rule 1148.1 to clarify requirements and provide additional enforceable mechanisms to prevent public nuisance from emissions of volatile organic compounds, toxic air contaminants and total organic compounds.

Authority: The SCAQMD Governing Board obtains its authority to adopt, amend or repeal rules and regulations from California Health and Safety Code Sections 39002, 40000, 40001, 40702, 40725 through 40728, 41508, and 41700.

Clarity: The SCAQMD Governing Board has determined that Proposed Rule 1148.1, as proposed to be amended, is written or displayed so that its meaning can be easily understood by the persons directly affected by it.

Consistency: The SCAQMD Governing Board has determined that Proposed Rule 1148.1, as proposed to be amended, is in harmony with and not in conflict with or contradictory to, existing statutes, court decisions or state or federal regulations.

Non Duplication: The SCAQMD Governing Board has determined that Proposed Rule 1148.1, as proposed to be amended, does not impose the same requirements as any existing state or federal regulations, and the amendments are necessary and proper to execute the powers and duties granted to, and imposed upon, the SCAQMD.

Reference: The SCAQMD Governing Board by adopting this regulation is implementing, interpreting or making specific the provisions of: Health and Safety Code Sections 40001 (rules to achieve ambient air quality standards), 40440 (b) (Best Available Retrofit Control Technology), and (c) (rules which are also cost-effective and efficient), 40702 (rules to execute duties required by law) and 41700 (public nuisance).

COMMENTS AND RESPONSES

Public Comments

A public workshop was held on April 16, 2015 in which approximately 22 people attended. Participants provided comments at the meeting and staff received one written comment. The following section summarizes the comments received as a result of the public workshop, as well as staff's responses.

Written Comment

The following comment letter was received from the Western States Petroleum Association, dated April 24, 2015. The letter has been bracketed for cross-referencing with corresponding responses following each page.

Comment Letter #1

Western States Petroleum Association
Credible Solutions • Responsive Service • Since 1907

Sandra Burkhart
Senior Coastal Coordinator

April 24, 2015

Barry Wallerstein, D.Env.
Executive Officer
South Coast Air Quality Management District
21865 E. Copley Drive
Diamond Bar, CA 91765

Subject: Draft Amended Rule 1148.1 – Oil and Gas Production Wells

Dear Dr. Wallerstein:

Western States Petroleum Association (WSPA) appreciates the opportunity to submit comments on the draft amendments to Rule 1148.1 – Oil and Gas Production Wells. WSPA is a non-profit trade association representing companies that explore for, produce, refine, transport and market petroleum, petroleum products, natural gas and other energy supplies in California and four other western states.

Rule 1148.1 - Oil and Gas Production Wells, was adopted by your Governing Board more than 10 years ago and has had a long history of successful compliance by our industry. In addition to that rule, SCAQMD has numerous other rules that affect this industry as well as dozens of regulations by other environmental regulatory agencies. We take our commitment to providing clean, reliable energy to the residents of California as well as our commitment to the environment and the communities we serve very seriously.

Overall Comments

During the April 14, 2015, working group meeting for this rule amendment, District staff and management indicated that they have not tallied the number of confirmed complaint calls to the agency (if any) about our member companies. As such, it is unclear how it was determined that this amendment is necessary at this time without any data to support it.

1-1

In the absence of any odor data, the SCAQMD seeks to regulate potential odor emissions from oil and gas production wells. This amendment is unnecessary and does not result in any quantified emission reductions. Every industry and facility has the potential to emit odors, yet these amendments target only our industry.

Further, numerous other District, state and federal regulations already exist, the goals of which are to reduce accidental emission releases from oil and gas operations that may lead to odors. The SCAQMD already regulates odors under Rule 402 – Nuisance, so it is unclear as to why another regulation is necessary.

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Response to Comment #1-1

Complaint data has been incorporated into the draft staff report as Appendix B – Sampling of Complaint History (2010 – 2014) – Oil and Gas Production Facilities and shows that some of the oil and gas production facilities have received numerous odor complaints.

SCAQMD Rule 410 – Odors from Transfer Stations and Material Recovery Facilities currently establishes odor management practices and requirements to reduce odors from municipal solid waste transfer stations and material recovery facilities. In addition, Proposed Rule 415 – Odors from Rendering Facilities seeks to establish odor mitigation requirements applicable to Rendering Facilities, and is scheduled for adoption later this year. The proposed amendment to Rule 1148.1 is a continuation of the effort to further minimize the potential for public nuisance due to odors from specific industries. While there are various regulations that address accidental releases or breakdowns, it is not certain that potential nuisance can be solely attributed to upset conditions, or to other non-upset conditions from routine or preventative maintenance activities, or to otherwise compliant but inefficient operational or maintenance practices.

The provisions of the proposed amendment seek to strengthen the preventative measures some facilities may currently be taking and formalizing them in order to improve communication and transparency between the regulated community and their local residential community. As such, staff believes that only facilities with ongoing odor nuisance issues will become subject to the more stringent requirements of the proposed amendment, whereas the community will benefit overall from the increased level of assurance provided from improved communication and improved overall awareness of the operations and practices conducted by the majority within the industry.

Lastly, some VOC and Toxic Air Contaminates (TACs) may be reduced as a result of incorporating additional best practices to reduce odors, but quantification of these benefits is difficult for State Implementation Plan submittals.

Comment Letter #1 (Cont.)

1-1 Cont. This rule not only attempts to solve an odor nuisance problem that does not exist, it has no actual emission reductions.

We were relieved to hear at the April 17th Stationary Source Committee (SSC) meeting that District staff has reversed its prior decision and will now prepare a Socioeconomic Impact Assessment. Page 20 of the staff report states that, "The proposed amendments are administrative in nature and do not have any socioeconomic impacts." Certainly, we do not believe this statement to be accurate and are happy to hear that the cost associated with this amendment will be evaluated.

WSPA assumes that this analysis will include the numerous, very costly new requirements outlined in the proposed amendments, in addition to the new standards for workover rigs that are not even technologically feasible at this time.

The rule requires every company (regardless of whether a single complaint call is levied against them) to install and maintain a "monitoring system that will alarm and notify operators at a central location...and will incorporate any emissions...identified in any approved SCAQMD operating permit." How could installation of such a complex, custom-designed computerized monitoring system be absent any expense? Further, where is the evidence to suggest that such monitoring is necessary when there is no data to support the assumption that this industry presents an odor problem?

1-2 The ban on the use of diesel-fired workover rigs is also the cause of great concern and potentially significant cost. It is WSPA's understanding that non-diesel fired workover rigs do not exist. What would be the cost to custom retrofit a rig with a natural gas engine, as required in section (c)(iii)? Further, WSPA questions the authority of the SCAQMD to regulate mobile sources of equipment that appear to fall under the jurisdiction of the California Air Resources Board. If SCAQMD knows of natural gas-fired workover rigs, these manufacturers' specifications and associated cost should be included in the Staff Report.

Significant additional labor costs would also result from the required change from weekly to daily inspections of all stuffing boxes and produced gas handling equipment within 1,500 feet of a sensitive receptor (rather than the currently required 323 feet). WSPA requests clarification as to the rationale behind the 1,500 foot buffer area and share what other regulations have similar setbacks. This setback is extreme, arbitrary and absent precedent, particularly when imposed upon an industry with no documented history of odor nuisance.

The rule's requirement that operators of oil and gas production wells conduct continuous odor surveillance downwind at the perimeter of each property would be both labor intensive and extremely costly. The existing Rule 1148.1 has recordkeeping and data requirements that industry has satisfied since 2004. Clearly a cost-benefit analysis would find these proposed requirements unsupportable. Based on SCAQMD staff's own assessment, this rule has a negative cost benefit analysis. Further, odor is subjective, with no known monitoring device or measuring stick, so it is unclear what type of surveillance would be successful. This rule amendment results in no benefit at a great cost.

1-3 The staff report does not identify a single facility of the 473 in the Basin for whom odor nuisances have been a problem.

1-4 In addition to the required Socioeconomic Impact Assessment, staff indicated at the SSC meeting that an Environmental Assessment is currently being prepared pursuant to the California Environmental Quality Act (CEQA). While we appreciate the rulemaking being moved from April 2015 to June 2015, we are still unsure how the SCAQMD can complete these reports and meet the state's noticing requirements by the May 1, 2015, Set Hearing Board Package date.

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Response to Comment #1-2

A socioeconomic analysis has been included in the draft staff report, which includes a discussion of centrally located monitoring systems for facilities located within 1,500 feet of a sensitive receptor, and for odor surveillance. Staff notes, as a result of comments received and additional assessment, the use of alternative fueled or electric-powered workover rigs has been removed from the Odor Mitigation Plan requirements in the proposed rule.

It is important to note that staff does not believe that the requirements associated with implementation of an Odor Mitigation Plan and of the proposed amendment will have a significant cost impact to the larger regulated community and that only facilities with ongoing odor nuisance issues will become directly affected. Moreover, the requirements identified in the Odor Mitigation Plan section of the proposed amendment would be applicable to areas within the facility that are identified as potential sources of nuisance odor, or to areas that have become identified as part of a Specific Cause Analysis.

Staff does not expect the daily visual inspection to add significant additional labor costs, considering industry has indicated that it is standard practice to visit each well as part of their daily routines and because the visual inspection is not a labor intensive exercise. Where follow-up repair or maintenance is required following a failed visual inspection, it would be expected that the same frequency of follow-up should occur under the current weekly inspection, unless such equipment fails on a more than weekly frequency, which industry has indicated is not the case.

See also Response to Comment # 1-1.

Response to Comment #1-3

Staff has included a summary of the complaint history data in the Staff Report, as well as a map of the facilities with more than one complaint in Appendix B – Sampling of Complaint History (2010 – 2014) – Oil and Gas Production Facilities.

Response to Comment #1-4

The Draft Environmental Assessment and Notice of Completion were released April 28, 2015 for public review.

Comment Letter #1 (Cont.)

1-4 Cont.

These analyses will help convey to the public the fact that there are no emission reductions associated with implementation of this amended rule. Further, "being able to smell something" does not necessarily correlate with adverse health effects. In fact, numerous studies and the SCAQMD's own ambient monitoring data proves this fact.

1-5

In addition to Rule 1148.1, there are numerous other SCAQMD regulations currently in place which require emission reductions, leak detection and repair, emission control systems and other measures designed to eliminate potential odor impacts from oil and gas operations. They include, but are not limited to:

- ✓ Rule 222 – Filing Requirements for Specific Emission Sources Not Requiring Written Permits Pursuant to Regulation II;
- ✓ Rule 401 – Visible Emissions;
- ✓ Rule 403 – Fugitive Dust;
- ✓ Rule 430 – Breakdown Provisions;
- ✓ Rule 462 –Organic Liquid Loading;
- ✓ Rule 463 – Organic Liquid Storage;
- ✓ Rule 464 – Wastewater Separators;
- ✓ Rule 466.1 – Valves and Flanges;
- ✓ Rule 467 – Pressure Relief Devices;
- ✓ Rule 301 – Fees (Annual Emission Inventory Report);
- ✓ Rule 2004 – Breakdown Provisions for RECLAIM Facilities;
- ✓ Rule 1470 – Internal Combustion Engines, RECLAIM;
- ✓ Rule 1176 – VOC Emissions from Wastewater Systems;
- ✓ Rule 1148 – Thermally Enhanced Oil Recovery Wells;
- ✓ Rule 1149 – Storage Tank Degassing;
- ✓ Rule 1173 – Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants;
- ✓ Rule 1166 – VOC Emissions from Decontamination of Soil;
- ✓ Rule 1178 – Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities; and
- ✓ Rule 402 – Nuisance.

1-6

Rule 402 – Nuisance, already allows SCAQMD inspectors to issue Notices of Violations (NOVs) after six complaint calls. Monetary penalties must be paid for odor complaints and companies must rectify the situation that caused any odors.

1-7

District Rule 430 – Breakdown Provisions, requires a company to notify the SCAQMD within one hour of discovery that any device is not operating properly and may have resulted in emission leaks. Written documentation must then be submitted which identifies what was broken, how it was fixed and the quantification of any emission leaks. These reports are also used to issue NOVs.

1-8

In addition to air quality regulations, several other environmental agencies regulate oil and gas operations with the goal of maintaining equipment integrity, safety and preventing any negative environmental impacts. Monitoring above and beyond what is already required by the Fire Departments, Consolidated Unified Program Agencies (CUPAs), Occupational Safety and Health Administration (OSHA), and California Department of Gas and Geothermal Resources (DOGGR) are redundant and unnecessary. The SCAQMD should allow those agencies with direct jurisdiction over this industry to continue to monitor and regulate this industry.

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Response to Comment #1-5

Staff agrees and has updated the rule language to indicate that the cross-referenced rules in the Applicability subdivision include the language "includes, but is not limited to:" to address the intent of your comment, considering the variability in the facility operations and other existing rules that may regulate those operations.

Response to Comment #1-6

The current complaint handling process under Rule 402 – Nuisance addresses violations under the approximate six independent verified complainants for a given odor event. The proposed amendment seeks to provide additional enforceable mechanisms to prevent potential nuisance issues from becoming a public nuisance, and to provide additional means to communicate intermediate actions prior to the issuance of a notice of violation and the resultant mitigation in the form of penalties or fees. As such, staff believes the proposed amendment not only provides additional assurances to the local community that intermediate actions are being taken to prevent larger nuisance odor from forming, but also provides a mechanism for the regulated community to share their corrective and preventative measures and best practices without the overhang of enforcement action.

Response to Comment #1-7

As noted, Rule 430 – Breakdown Provisions does not provide relief from Rule 402 – Nuisance. However, not all odor issues are related to breakdown, and the purpose of the proposed amendment is to prevent nuisance, not to respond to nuisance causing conditions.

See also Response to Comment #1-1.

Response to Comment #1-8

Staff agrees that oil and gas production facilities currently operate existing systems to safeguard for fire prevention and emergency response, and considers these systems as centrally located monitoring systems, meeting the requirements of paragraph (d)(12) of PAR1148.1. The requirement for a centrally located monitoring system has been revised to apply only for central processing areas of an oil and gas production facility located within 1,500 feet of a sensitive receptor, in order to monitor and ensure proper facility operation. PAR1148.1 seeks to leverage these systems for those facilities that may become subject to an odor mitigation plan to integrate any identified feasible additional odor or surrogate emissions monitoring equipment as part of the odor mitigation plan implementation.

The proposed amendment does not change the definition of Nuisance. Rather, the proposed amendment creates intermediate enforcement mechanisms short of a notice of violation, and serves the purpose of potentially preventing notices of violation for Nuisance, provided the Specific Cause Analysis is representative and encompasses adequate corrective actions that provide for continual improvement in the facility's overall odor management system and implementation of best practices.

Comment Letter #1 (Cont.)

1-8 Cont. Therefore, these proposed amendments are redundant with current environmental regulations and, as such, unnecessary and excessive. This rule's proposed language would change the definition of Nuisance from six calls per day to requiring a written Specific Cause Analysis Plan after just three odor complaints in any six month period.

1-9 This unfairly singles out a specific industry which does not have a history of legitimate odor complaints. In fact, the SCAQMD's ambient monitoring, conducted for many years at oil and gas fence line locations, confirms no excess emissions. Many of our member companies have never been issued an odor NOV.

Based on our members' experience and recent testimony at the rule making public meeting held in Montebello on March 26, 2015, community activists have indicated that they utilize "phone trees" and that calls are placed to SCAQMD by people who did not actually smell an odor. Asking industry to complete additional reports on the basis of only three calls will be onerous and, again, will not advance the cause of clean air nor will it reduce criteria pollutants in the South Coast Air Basin in any way.

1-10 Further, WSPA members are extremely concerned about the lack of transparency as to how current odor complaints are handled. The SCAQMD's recent refusal to indicate street addresses and/or people's names leads us to conclude that SCAQMD knows in many cases it is the same one or two people calling repeatedly from the same location. A true odor nuisance should result in calls from various nearby addresses. The fact that complaint calls continued to come in to SCAQMD about Allenco long after they voluntarily ceased operations indicates the specious nature of these calls.

There is no scientific basis for this rulemaking and there is ample SCAQMD evidence demonstrating that odor complaints from the oil and gas industry are no greater than those calls received for other industries. SCAQMD's own ambient monitoring data in and around oil and gas production facilities for the past several years indicates emission levels significantly below background levels elsewhere in the South Coast Air Basin. In fact, emissions actually increased (i.e., four minute "spikes") AFTER Allenco suspended operations, according to Mr. Mohsen Nazemi at the Stationary Source Committee Meeting in September, 2014.

1-11 SCAQMD staff indicates that 1080 wells were drilled or "reworked" in the past 18 months in the South Coast Air Basin. Our repeated requests for confirmation that no odor complaints have been associated with these well drilling operations have gone unanswered by District staff.

1-12 Odor monitoring is subjective, burdensome and does nothing to reduce criteria pollutants or toxic air contaminant emissions.

Specific Areas of Concern

1-13 • The Applicability Section (b) notes three of the many air quality regulations required of the industry. As mentioned above, there are numerous District regulations absent from this list.

1-14 • Per (c)(3), any three calls now constitutes a "Confirmed Odor Event." The definition does not provide the time lapse of the three complaints, nor does it specify whether they can be from within the same apartment or housing complex.

1-15 • The rule would require SCAQMD to respond to each and every specific call made by the public in order to document a three-call Confirmed Odor Event. This seems impossible, given limited SCAQMD resources.

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Response to Comment #1-9

For those member companies that have never been issued an odor NOV, or that rarely if ever receives a confirmed complaint, the requirements of the proposed amendment will have minimal impact. However, staff disagrees that previous monitoring work at oil and gas production facilities has failed to confirm excess emissions. For example, data collected as part of the AllenCo investigation routinely showed a spike in emissions, albeit for short periods of time, which has led to multiple nuisance violations.

See also Response to Comment #1-1.

Response to Comment #1-10

The current complaint handling process used by the SCAQMD involves the confirmation by an agency inspector of any odor identified in a complaint. The confirmation includes identification of the odor at the complainant location, traced back to a source. Any use of call trees that do not result in confirmation by the agency inspector would not qualify under definition as a confirmed odor event.

It should be noted that the agency has responsibility for not only reduction in criteria pollutants leading to attainment of the ambient air quality standards, but also is responsible for preventing public nuisance under the Health and Safety Code. Odor issues affecting a single complainant may be better described as a private nuisance and would not be covered by this authorization. The criteria used to establish a public nuisance is a relatively high bar, although the crossover from a potential private to a potential public nuisance is nuanced, and the proposed amendment seeks to improve awareness over the issues involved, the efforts by the regulated industry, and the concerns from the local community.

Finally, although not every complaint call results in a confirmed odor event, the complaint itself can be a community outreach opportunity, either as an indicator of dissatisfaction with perceived responses, actions, or of the desire for more information and awareness of the activities, including frequency and timeframes. In this way, management of potential private nuisance issues can help avoid escalation into a possible public nuisance situation.

See also Response to Comment # 1-9

Response to Comment #1-11

Drilling and rework activities are covered by Rule 1148.2 – Notification and Reporting Requirements for Oil and Gas Wells and Chemical Suppliers rather than Rule 1148.1.

See also Response to Comment #1-3.

Response to Comment #1-12

Odor monitoring is used as part of an odor management system. It is not directly related to criteria or toxic air contaminant emissions, although there may be cross-over. Nuisance is inherently subjective and odor monitoring should be expected to similar.

Response to Comment #1-13

See Response to Comment #1-5.

Response to Comment #1-14

The definition for Confirmed Odor Event refers to "an occurrence of odor resulting in three or more complaints by different individuals from different addresses, and the source of the odor is verified by District personnel." Individuals from different addresses but within the same housing complex would be considered different individuals provided they reside in different addresses. The time lapse of the complaints would be relative to the time required to verify them, and to the extent that the odor resulted from the same occurrence, as determined through investigation by the inspector.

Response to Comment #1-15

The District's goal is to respond to all complaints during normal working hours, and prioritizes complaints during off-hours based on frequency and complaint history. Although it is staff's intention to respond to all complaints, some limitations exist that may prevent immediate response. However, the proposed amendment does not require a response to each and every call, only that any confirmation of an odor that results in three or more independent complaints would qualify as a confirmed odor event and the subsequent requirements that are triggered by that designation. Staff will reassess the effectiveness of this approach on a periodic basis and may determine the need for a confirmed odor event resulting from more or less complaints.

Comment Letter #1 (Cont.)

1-16 • After three complaint calls from anyone over a six month period, a written Specific Cause Analysis is required. If the source of the odor event was confirmed by AQMD personnel, why would the facility need to "investigate the cause of confirmed odor event…."? The cause would have already been determined in order to be confirmed by the SCAQMD. Further, the company would already (as mentioned above) be subject to extensive reporting requirements under Rule 430 – Breakdown Provisions. A Specific Cause Analysis does not lessen the likelihood of an odor incident. Much of this information is already required to be submitted in a 430 Breakdown report.

1-17 • If the definition of Nuisance is to change, then Rule 402 should be amended so that all industries are treated equally. Typically, 6 calls in one day constitutes a Notice of Violation (NOV) under existing Rule 402 – Nuisance.

1-18 • The rule requires every oil and gas company to put signs on exterior fencing, with specific instructions spelling out how to complain to SCAQMD about production facilities and their operators. What other industries are required to do this? Why is this industry being singled out? Why is SCAQMD encouraging calls toward one industry?

1-19 • Section (d)(11) requires each company to install a Continuous Monitoring System and alarm system regardless of whether or not a single complaint call comes in.

1-20 The system must "incorporate any emissions or process monitoring and associated alarm thresholds…"

What type of monitoring is required and what pollutants/levels are to be monitored? Daily and weekly monitoring and data gathering are already required by several other agencies and SCAQMD rules. What are the allowable emission thresholds to which this data should be compared? Who will establish these thresholds?

1-21 • The rule further requires an Odor Mitigation Plan after nine complaint calls. This is in addition to the Specific Cause Analysis. Is such a plan required of any other industry?

1-22 • Continual odor surveillance downwind at the perimeter of the property at all times during well work is required. Observations shall be recorded hourly. If an odor is detected, all drilling work must cease. What specific compounds are to be analyzed? Is the human nose the barometer? If so, odor is again subjective, so it is unclear how one individual would make this determination

1-23 • Further, the Odor Mitigation Plan requirement itself can now result in a Notice of Violation. What constitutes such a violation?

1-24 • If an Odor Mitigation Plan is required, the facility is then banned from using diesel fired workover rigs. To our knowledge, neither electric nor natural gas workover rigs currently exist. Further, these rigs are already regulated as mobile sources by the California Air Resources Board (CARB). WSPA questions the SCAQMD's legal authority to regulate this equipment and is unclear how this rule change will reduce potential odor emissions.

1-25 • This rule arbitrarily changes the set back to sensitive receptors from 323 feet to 1,500 feet. Upon what scientific data or analysis is this change based? This is inconsistent with other SCAQMD regulations which specify permit notification and siting requirements based on shorter distances. Specifically, this proposed change contradicts Rule 1401 Guidance, 1401.1 – Requirements for New and Relocated Facilities Near Schools, Rule 1470 – Requirements for Stationary Diesel-Fueled Internal Combustion

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Response to Comment #1-16

Because not all confirmed odor events are expected to be the result of a breakdown, a facility may not be required to perform an investigation per Rule 430. To the extent that there is overlap, a report under one rule could serve as a report under the other, provided the affected facility indicates that the submitted report is intended to serve multiple purposes.

In addition, confirmation of an odor is not confirmation of the specific cause. Whereas an odor is confirmed and traced to a source from the location of the complainant to a facility boundary, while ruling out other potential sources through consideration of upwind and downwind conditions, a specific cause analysis can point towards a process upset, improper implementation of best practices, or identification of a previously unidentified odor causing condition. A properly conducted Specific Cause Analysis and proper incorporation of corrective actions into a facility's overall management system helps prevent future occurrences, and is a universally accepted quality assurance practice.

Response to Comment #1-17

The proposed amendment to Rule 1148.1 does not change the definition of a public nuisance of the implementation of Rule 402 – Nuisance. However, as staff continues to address and analyze the extent of complaints pertaining to specific industries, staff may consider a similar approach for those industries in the future.

See also Response to Comment #1-6.

Response to Comment #1-18

Rule 461 currently contains signage requirements for complaint reporting through 1-800-CUT-SMOG. Rule 410 – Odors from Transfer Stations and Material Recovery Facilities also contains a signage requirement for complaints and Rule 1420.1 – Emission Standards for Lead and Other Toxic Air Contaminants from Large Lead-Acid Battery Recycling Facilities are also required to post contact information related to complaints. Proposed Rule 415 contains a similar requirement to PAR 1148.1.

The requirement for posting signage for complaints is in response to community requests for such information and facilitates communication, awareness, and most importantly, faster mitigation of the underlying issues. SCAQMD encourages complainants to call in a complaint when nuisance type issues occur, independent of the suspected or confirmed source.

Response to Comment #1-19

The requirement for operation and maintenance of a centrally located monitoring system, which has been revised to apply only to facilities with central processing areas located within 1,500 feet of a sensitive receptor, recognizes the prevalence of

existing systems used for purposes other than odor or emissions monitoring that can be used as surrogate monitoring.

See also Response to Comment #1-8.

Response to Comment #1-20

Paragraph (d)(11) requires that any monitoring requirements that are identified as part of an odor mitigation plan be integrated with a centrally located monitoring system. The odor mitigation plan is triggered through multiple confirmed odor events or a notice of violation for Rule 402 – Nuisance, and any activities or equipment that is identified from the specific cause analyses or notice of violation investigation would be reviewed by the facility owner or operator and submitted for review by the SCAQMD to determine if any appropriate and feasible additional monitoring, either emissions or surrogate parameter monitoring is warranted to minimize or respond to nuisance odor causing events.

See also Response to Comment #1-8.

Response to Comment #1-21

The Odor Mitigation Plan requirement is triggered following three confirmed odor events over any six month period, rather than nine complaint calls over an indeterminate period of time or agency confirmation status. Facilities under Rule 410 – Odors from Transfer Stations and Material Recovery Facilities are subject to an Odor Management Plan, which is required of all facilities rather than through use of a confirmed odor event trigger.

Proposed Rule 415 – Odors from Rendering Facilities also contains an Odor Mitigation Plan requirement, based on confirmed odor event trigger.

See also Response to Comment #1-1.

Response to Comment #1-22

The proposed rule language has been revised to more directly link any odor detected as part of the surveillance requirement of (f)(2)~~(C)~~I(ii) to the activities being monitored, including the addition of the following phrase associated with discontinuation of activities:

"…unless the source or cause of the detected odors are determined to not be associated with the activity under surveillance."

Response to Comment #1-23

Similar to the provisions of Rule 221 – Plans, subdivision (e), a violation of any requirement stated within an approved Odor Mitigation Plan would constitute a violation of the proposed amended rule.

Response to Comment #1-24

Due to stakeholder comments and additional staff analysis, the proposed requirement for use of alternative-fuel or electric-powered workover rigs from the Odor Mitigation Plan requirements in the proposed rule.

Response to Comment #1-25

The increased proximity distance to sensitive receptors under the proposed amendment would harmonize the requirement with Rule 1148.~~.~~2 - Notification and Reporting Requirements for Oil and Gas Wells and Chemical Suppliers.

Complaint history pertaining to a subset of the oil and gas production facilities indicates that the majority of complaints are from locations farther than 100 meters, and also include some locations beyond 1,500 feet. Because nuisance is primarily determined by the receptor, and the incident rate for this source category has been driven by residents due to proximity concerns, staff believes that increasing the sensitive receptor distance as proposed is an appropriate proxy for addressing nuisance potential and nuisance mitigation.

A summary of the complaint information and distances is included as ~~See~~ Appendix B – Sampling of Complaint History (2010 – 2014) – Oil and Gas Production Facilities.

Finally, with respect to Rules 1401, 1401.1, 1470, and 212, the identified setback requirements were not established for the purposes of minimizing public nuisance and the corresponding criteria is not the same as for PAR1148.1.

Comment Letter #1 (Cont.)

1-25 Cont.

and Other Compression Ignition Engines, and 212 – Standards for Approving Permits and Issuing Public Notices, etc. These are regulations pertaining to known air toxics yet they are assigned a smaller set back than potential odor? Each of these rules would also require amendments.

1-26

As the staff report correctly states, Health and Safety Code Section 40727 requires the Governing Board to adopt rules for which the findings of necessity, authority, clarity, consistency, non-duplication and reference can be made. These proposed amendments meet none of these criteria.

1-27

In conclusion, the rule is unnecessary and duplicative of numerous other SCAQMD and state requirements aimed at reducing emissions and potential odors from oil and gas operations. SCAQMD has no legal authority over workover rigs which are already regulated as mobile sources by CARB. Finally, several definitions and the newly established 1,500' setback for sensitive receptors are not consistent with other SCAQMD rules. It is unclear why a rule with no emission reductions and which does nothing to protect public health is necessary at this time.

We urge the SCAQMD to return its focus to the federally-mandated mission of attaining and maintaining ambient air quality standards. These are health-based protective standards. The Rule 1148.1 amendments don't reduce emissions, but they do create a larger, most burdensome set of requirements, one which do not get this Basin one step closer to attainment. WSPA and its member companies appreciate the opportunity to provide comments and look forward to working with the District on this rulemaking.

Sincerely,

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Response to Comment #1-26

The draft staff report identifies the draft findings of necessity, authority, clarity, consistency, non-duplication and reference.

Response to Comment #1-27

See responses to Comments #1-1, #1-2, #1-14, #1-17, #1-24, #1-25, #1-26.

Oral Comments

The following comments were received at the April 16, 2015 public workshop:

Comment #1

More definitions are needed, including for "odor" and various forms of processed gas. Definitions should be included from DOGGR regulations and for internal consistency; the PAR refers to "oil", "crude oil" and "emulsified oil".

Response

Staff has reviewed the proposed amendment and has incorporated a definition of "odor" consistent with the definition included in the currently Proposed Rule 415 – Odors from Rendering Facilities as part of the introduction of the odor mitigation concept. However, staff believes that the current references to oil, crude oil and emulsified oil rely on common terminology and that defining these terms may have an inadvertent limiting effect on compliance determination and action. Similarly, expanding the set of definitions to include the various forms of processed gas and harmonizing current Rule 1148.1 definitions with DOGGR regulations could have a similar limiting effect and thus are not recommended for revision.

Finally, Rule 1148.1 currently applies to oil and gas production wells and the amendment covers oil and gas production facilities, which includes oil and produced gas handling equipment. Natural gas distribution, transmission and associated storage operations are not subject to the current or proposed amended rule.

Comment #2

The proposed amendment should be evaluated as a "good neighbor policy", with consideration for a lower action level threshold for facilities that are in even closer proximity to sensitive receptors that can be located within 20 to 30 feet from the property line. Facilities within 500 feet of a sensitive receptor should have additional requirements. SCAQMD Proposed Rule 415 Odor from Rendering Facilities has more stringent standards and should be adopted under PAR1148.1.

Response

The odor mitigation requirements of PAR1148.1 parallels the structure in Proposed Rule 415 by including odor mitigation requirements such as notification signage for all facilities while also setting additional odor mitigation action levels based on the number of confirmed odor events. Rule 1148.1 currently requires additional inspection and repair actions for wells located within 100 meters of a sensitive receptor while the proposed amendment extends the proximity requirement to 1,500 feet (457 meters), which is more stringent. Furthermore, the proposed amendment harmonizes the sensitive receptor definition from existing Rule 1148.2 – Notification Reporting Requirements for Oil and Gas Wells and

Chemical Suppliers to include residences, which provides additional protections for communities over the current rule, which excludes residences. To the extent that facilities located even closer to sensitive receptors represent a higher nuisance potential, the greater potential should readily translate into more rapid triggering of the odor mitigation action levels. Staff's review of the complaint history [included in Appendix B – Sampling of Complaint History (2010 – 2014) – Oil and Gas Production Facilities] suggests that only a handful of facilities have the potential to trigger the odor mitigation requirements under the proposed amendment and decreasing the proximity requirement would not increase the number of potentially affected facilities.

Comment #3

Affected communities are put in a position where they feel they are trading their health in exchange for philanthropy from operating facilities, because community outreach from facilities tends to reduce complainants but may not reduce exposures to potential nuisance odors or associated health impacts. Facility workers themselves may feel that they are choosing between employment and good health.

Response

Oil and gas production facilities are currently subjected to several SCAQMD rules and regulations, including the various rules identified in comparative analysis section, which cover both criteria pollutant and toxic air contaminant emissions and application of Best Available Control Technology and Best Available Retrofit Control Technology, as well as the protective standards under Regulation ~~I~~ IV - Regulation XI~~I~~V - Toxics and Other Non-Criteria Pollutants.

The requirements under Rule 402 – Nuisance serves as both a final regulatory prohibition to protect the public from otherwise *de minimis* emissions that may result in objectionable odors as well as a mechanism for further protecting the public from event driven releases that may be caused by poor implementation of facility emission management programs, including preventative maintenance or possible non-compliance that is not identified as part of the underlying facility monitoring or agency inspection efforts.

Staff's review of the compliance history of these facilities indicates a general high level of compliance – however, staff also believes that the proximity to sensitive receptors does represent a higher nuisance potential. The proposed amendment seeks to acknowledge the higher potential for odor nuisance by adding additional enforcement mechanisms to lower the threshold for potential regulatory action following confirmation of an odor driven event. Similarly, the proposed amendment seeks to acknowledge the general high level of compliance within the industry by setting action levels so that only facilities with recurring odor driven issues are required to implement more rigorous mitigation measures to further protect sensitive receptors from potential exposures and reducing exposures to even lower levels, based on a site-specific evaluation and use of current best practices.

Comment #4

Under the current complaint handling system, inspectors do not visit complainants—I've made several complaints and have never seen an inspector.

Response

The current complaint handling system covers initial inspector response, investigation, and follow-up communications. Following the initial complaint, inspectors, once dispatched, attempt to identify and trace the odor based on the complainant description and knowledge of the area, including nearby operations and activities. Should the odor be identified as part of a general area investigation, the inspector may need to immediately spend time tracing the odor before it dissipates in order to properly identify any potential sources. In addition, during off-hours, evenings and weekends, supervising inspectors prioritize the complaint response based on historical activity and complaint description. In many cases the inspector may be resource constrained and unable to contact the complainant in person, but will instead contact via phone to describe the complaint response, and when available, the resolution of the complaint.

The proposed amendment seeks to provide additional communication mechanisms to keep the complainant and affected local community informed of the status of facilities, with respect to confirmed odor complaints and associated activities in response to any corrective actions. Furthermore, the proposed rule requires posting of signage at the facility that provides contact information for the facility and the SCAQMD complaint process information.

Comment #5

Idled wells should not be exempted under Rule 1148.1.

Response

The current rule provides an exemption for low producing wells that are not located within 100 meters of a sensitive receptor, based on the lower emissions potential. Staff expects the associated odor nuisance potential to be similarly low. Because staff in general believes the odor mitigation plan would be required under the proposal only for those facilities with recurring odor issues and because these issues have not been identified as part of the complaint history for low production wells, the exemption should continue under the proposed amendment.

Comment #6

An oil field modernization project being publically heard in Montebello this month (April 2015) features the relocation of wells towards the periphery of the property, putting them in closer proximity to sensitive receptors.

Response

SCAQMD has reviewed the Draft Environmental Impact Report (EIR) and Recirculated Draft EIR for the Montebello Hills Specific Plan project and provided the following comment letters to the Lead Agency:

http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2008/january/montebello-hills-specific-plan.pdf

http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2009/june/proposed-montebello-hills-specific-plan.pdf

http://www.aqmd.gov/docs/default-source/ceqa/comment-letters/2014/october/deirmontebello.pdf

PAR1148.1 would further strengthen the protections for the community from oil and gas wells.

Comment #7

Under Rule 1148.2, exemptions are available for "emergencies". What constitutes an emergency and when do we find out details?

Response

Rule 1148.2 (d)(3) allows for delayed notification for activities that are necessary to avert a threat to life, health, property or natural resources. Notifications are required no later than 48 hours after the start of operations and the community would then have access to the information through the web portal, similar to other required notifications under Rule 1148.1.

Comment #8

Can the District provide a sample of what the required signage in the proposed amendment might look like?

Response

Staff has added an example of the required signage as Appendix C – PAR1148.1 (d)(12) Sample Information Signage to the Draft Staff Report.

Additional Comments

The following include additional comments that were received as part of the rule development process:

Comment #9

Including Toxic Air Contaminants is not appropriate to the purpose and scope of the proposed amendment. The applicability should be only to hydrogen sulfide and the purpose section further clarified to refer to nuisance odorous compounds.

Response

Although the primary purpose of PAR1148.1 is to reduce VOC emissions from oil and gas production wells, because concurrent reductions of TAC and TOC emissions result from the administrative and engineering controls, and because the rule also includes maintenance activities, it is appropriate to reference all pollutants that are subject to the rule. Furthermore, because any potential odors from the emissions from oil and gas production wells are from the above listed pollutant categories, further including and subsequently defining "nuisance odorous compounds" could have a limiting effect from an enforceability perspective and is not recommended by staff.

Comment #10

The proposed amendment should include cross-referencing to definitions that originated from other SCAQMD rules in order to ensure consistency. Verbatim inclusion in the proposed amendment may cause difficulty should the underlying rule from which the definition was derived become amended at a later date.

Response

PAR 1148.1 includes direct cross-referencing for definitions that have universal applicability, such as the definition for VOC. For other areas, the affected community has requested SCAQMD to include definition language directly in the proposed amendment for clarity especially for individuals that may not have direct access to the internet or the other cross-referenced regulatory language. While it may be difficult to ensure consistency amongst the various SCAQMD rules with respect to common definitions, the independence of the definitions may provide additional flexibility in the development of future source specific requirements. In fact, updating of definitions in the underlying rule may be for a purpose that is more unique to that industrial sector and could potentially create enforceability or compliance related issues to PAR 1148.1 if they were directly cross-referenced or linked in the manner suggested. Staff has reviewed the definitions that were derived from other SCAQMD rules, cross-referencing where appropriate and including full language definitions for clarity elsewhere.

Comment #11

Delete "toxic air contaminants (TAC) emissions" from the Purpose and replace with "Hydrogen Sulfide".

The rule and all of the requirements of the rule are for the control of gaseous organic compounds (TOC) and most volatile compounds of carbon (VOC). These two classifications of gaseous hydrocarbon compounds include the key TAC components found in hydrocarbons (such as Benzene). Almost all of TAC compounds identified by the California Air Resources Board and listed in Section 7412 of Title 42 of the United States Code would not be applicable to oil and gas production wells. Therefore, inclusion of the TAC list is unnecessary and unwarranted as part of this rule.

One of the concerns with inclusion of TACs is diesel particulate matter and other combustion TAC emissions, which are not a compound associated with oil and gas wells, but are associated with mobile equipment that services oil and gas wells. Is it AQMD's intent for the scope of the rule to include diesel electric generators and engines and vehicular traffic even though they are already subject to regulation under CARB? A huge and most likely infeasible burden will be placed on industry and the inspectors to attempt to find the appropriate source of a combustion odor complaint since all LA Basin fields are surrounded by highly traveled busy streets and roads, which far exceed emission levels of temporary and transient oil field sources. It is also important to note the methane and ethane are exempt compounds in AQMD's Rule 102. They are both odorless and have no bearing on the alleged and unjustified odor complaint management being proposed by the Rule amendments.

Response

Although the primary purpose of the rule is to reduce VOC emissions from oil and gas production wells, because concurrent reductions of TAC and TOC emissions result from the administrative and engineering controls, and because the rule also includes maintenance activities, it is appropriate to reference all pollutants that are subject to the rule.

See also Response to Comment #1-24 and Comment 9.

Comment #12

Several definitions have been added to PAR1148.1 that are repeats of definitions in other District rules. Examples include "component", "heavy liquid", "leak", "light liquid" (Rule 1173), and "wastewater" (Rule 1176). In addition to the concern CIPA expressed in its letter of February 13, 2015, regarding the creation of "internally inconsistent language within existing AQMD rules" when one rule overlaps or exceeds the requirements of another rule (e.g., fugitive component repair times in PAR1148.1 vs. Rule 1173), CIPA believes the practice of repeating definitions of the same terms in multiple rules is unwise unless absolutely necessary to tailor the rule to specific circumstances. District staff has acknowledged it is generally not possible to

update multiple rules at the same time in order to ensure consistency. Thus, if a definition were to change in one rule as part of a future rule amendment, but not change in the other rule(s), the result would be inconsistent definitions between rules. This creates confusion not only for the regulated community, but also for the public and District staff as well. This confusion leads to inefficient conversations and increases the potential for misunderstandings and inadvertent non-compliance. A better practice would be to utilize Rule 102 and other rules that provide standard definitions to be referenced in the District's rules and regulations. In addition to the repeat definitions from Rules 1173 and 1176 noted above, PAR1148.1 now includes a definition of "facility" that is slightly different from the definition in Rule 1302. Again, CIPA believes this is unwise and encourages the District to define such common and far-reaching terms in broadly applicable rules that can then, in turn, be referenced in individual source specific rules.

Response

Definitions that have originated from other rules are proposed for incorporation into the proposed amendment in response to general stakeholder comments received that requested that cross-referencing be minimized to facilitate understanding of the requirements for individuals who may not have access to the cross-referenced rules. In addition, cross-referencing definitions may limit flexibility during subsequent rule development efforts for either rule.

See also Response to Comment 10.

Comment #13

Insert language "except where there is an existing AQMD permit for air pollution control equipment" at the end of the first sentence to the provisions for use of a produced gas collection and control system in paragraph (d)(7).

This will allow existing or future AQMD permit conditions to supercede the rule to avoid conflict. Some site specific or various location permits of CIPA member companies require the use of a PID for VOC measurements on portable tanks equipped with permitted vapor control devices (i.e. carbon canisters). However, this Rule provides for using a TVA for TOC measurements. If the language does not change, there will be a conflict to either comply with the Rule or the permit condition.

Response

The current language requires a control efficiency demonstration of 95% or measurement of less than 250 ppmv. Permit conditions may require a different measurement, but would be required to demonstrate compliance with Rule 1148.1 However, for clarity, the proposed amended language has been revised to include the following provision "…or by an equivalent demonstration identified in an approved permit issued on or after March 5, 2004, pursuant to Rule 203 – Permit to Operate."

Comment #14

Remove the changes to “1,500 feet” and maintain the existing rule language of "100 meters".

With the focus of the changes on the urban environment, the existing 100 meter requirement (328') and the change to sensitive receptor definition include and regulate all urban well cellars. There is no scientific evidence to support the increase to 1,500', which appears arbitrarily established. There are unintentional consequences of expanding to 1,500 feet. Large numbers of additional wells in large multi-acre fields would become incorporated into the rule, for which there is absolutely no basis.

Pointing to Rule 1148.2’s setback requirement as justification to change this rule is not an appropriate justification. CIPA pointed out in earlier comments that setback requirements in 1148.2 were inconsistent with 1148.1. CIPA objected to and repeatedly questioned the District’s scientific reason for the distance requirements in the rule without ever receiving any justification. In addition, 1148.2 is a reporting rule which is far different than a compliance rule which will likely add significant costs without any benefit.

The existing Rule 1148.1 has recordkeeping and data requirements that industry has satisfied since 2004 and can show there are no emissions from well cellars. The data clearly does not support the proposed amendments. To the contrary, a CIPA member company has actual air monitoring data collected over the past 4 years which has recorded no TOCs from drilling, completions and workover activities. During the same time, there have been no confirmed odor complaints at this company’s facility in 4 years!

Response

See Response to Comment #1-25.

Comment #15

Concerning odors, monitoring data collected by industry and LA County (February 2015 Air Quality Study conducted at the Inglewood Oil Field) clearly indicate there is no odor issue related to oil and gas production activities. Therefore there is no justification for expending significant sums of money to create a central facility or location that currently does not exist at many facilities. While in theory it sounds like a monitoring system is appropriate, actual monitoring data proves otherwise. There are multitudes of emission thresholds, most of which are not related to odor. It is costly with no meaningful, documented value. This requirement is not feasible and a financial impact study needs to be conducted. Enforcement of existing AQMD rules and regulations is far more effective to ensure “bad actors” comply

Also, concerning safety, existing safety systems are already installed at production facilities. Redundant monitoring required by these rule amendments add no value and are duplicative and unnecessary. Safety systems that are inspected by Fire

Departments include, but are not limited to, LEL monitors; fire eyes (aka flame detection monitoring); and fire pumps and fire systems. In addition, DOGGR conducts environmental inspections, which include environmental, spill and fire equipment inspections. LA Fire Health Hazardous Materials Division conducts environmental inspections to include safety and environmental concerns as well as proper storage of hazardous materials.

Response

See Response to Comment #1-8.

Comment #16

The Operator Inspection Requirements are too stringent. The frequencies should be changed by making all daily and weekly requirements quarterly, consistent with the frequency required for well cellar inspections. In addition, the proximity to sensitive receptor condition should remain at 100 meters rather than 1,500 feet.

The existing Rule 1148.1 has recordkeeping and data requirements that industry has satisfied since 2004. The data clearly does not support the proposed amendments.

Additionally, a CIPA member company has actual air monitoring data collected over the past 4 years which has recorded no TOCs from drilling, completions and workover activities. There have been no confirmed odor complaints in the same 4 year period!

Response

The visual inspection frequencies in the current rule reflect baseline expectations and it is staff's understanding that it is industry practice to physically inspect each well on a similar frequency independent of this existing requirement. In the absence of this inspection, outside of standard industry practice implementation, an unattended well and accompanying well cellar could pose an increased potential for nuisance and emission generation up to a three month period, in addition to any potential for operational or production issues. The noted absence of confirmed odor complaints at a presumed compliant facility may be *prima facie* evidence of the effectiveness of this visual inspection requirement, although use of ambient monitoring by the facility described may also represent a best practice consideration.

Comment #17

In the first sentence of the odor mitigation requirements section, delete the change to "1,500 feet" and make it "100 meters". Also, insert language "as far as it applies to the actual confirmed odor complaint event" at the end of the sentence associated with specific cause analysis to ensure the Odor Mitigation Requirements address the specific odor that is the subject of the complaint events.

Response

The proposed amended language has been revised to refer to "confirmed odor event" rather than "odor" with respect to Specific Cause Analysis and related reports.

However, the odor mitigation plan requires facilities to comprehensively review their operations to identify all sources of potential odor and related emission sources as well as the management systems used to minimize nuisance odor potential. As such, the odor mitigation plan is not limited to the specific cause analysis or NOV that triggered the requirement to develop the odor mitigation plan.

See also Response to Comment #14.

Comment #18

Increase the Notice of Violation (NOV) trigger from one (1) to two (2) in a 12 month period of time for Odor Mitigation Plan and Mitigation Requirements.

This is important since each confirmed odor complaint event has the potential to become an NOV by the activists using their call trees. Industry has experience and evidence from AQMD incident reports that show the activist standing outside a facility soliciting passers bys to call in to increase complaint numbers. A single event should not increase compliance requirements on a company without the opportunity for the company to address and fix. One NOV does not necessarily mean there will be a repeat of the event. It should not be a "one strike you're out" trigger.

Response

Currently, receipt of a Rule 402 NOV results in an investigation and assessment of appropriate corrective actions, including potential modifications to operating permits and permit conditions. The role of the Odor Mitigation Plan is to serve as a formal corrective action to address nuisance, for those facilities that have been identified from the complaint process as having the potential for creating a nuisance.

A facility that has received a notice of violation for Rule 402 is understood to have met the standard for having the potential to create a nuisance. Following issuance of an NOV, the facility would have all the rights and remedies available to any facility that has been issued an NOV, including defending against the District's enforcement action in court. The facility can also go to the Hearing Board and seek a Variance and could dispute the violation, although the Hearing Board would typically rely on the District's findings and make a determination of whether a Variance is warranted and, if so, the terms for reaching compliance.

Comment #19

The Odor Mitigation Plan should be specific to the actual triggering confirmed odor complaint event, and the rule language should reflect this.

Also, all references to providing leak history and records of releases from any pressure relief devices or vacuum devices attached to vessels should be removed from the proposed amendment because the data is already submitted to the AQMD on a quarterly basis and should be on file.

Response

The odor mitigation plan requires facilities to comprehensively review their operations to identify all sources of potential odor and related emission sources as well as the management systems used to minimize nuisance odor potential. As such, the odor mitigation plan is not limited to the specific cause analysis or NOV that triggered the requirement to develop the odor mitigation plan.

The proposed amendment does not require re-submittal of leak history. It does require facilities to consider leak history in identifying potential sources of odors and associated emissions.

Comment #20

Remove "continual" and "at all times" with respect to the required odor survellience during well workover activities.

This requirement to conduct continuous odor surveillance downwind at the perimeter of the property would be labor intensive for operators that do not have existing systems for odor surveillance. The existing Rule 1148.1 has recordkeeping and data requirements that industry has satisfied since 2004. The data clearly doesn't support the proposed amendments. Clearly a cost-benefit analysis would find this requirement unsupportable.

Response

The proposed requirement is for continual surveillance rather than continuous, with recordings at a minimum hour frequency. As part of the development of an odor mitigation plan, a facility would identify all potential sources of odor and related emissions and the feasible management practices used to minimize nuisance potential. Any benefit analysis conducted by the facility in support of a best practice will be considered by the District should an odor mitigation plan be required.

Comment #21

The requirement to discontinue certain well workover activities due to odor surveillance should contain language as follows: … perimeter of the facility"and the

odor is confirmed from" drilling, well completion…. …will discontinue "when the operation is safe to do so" and until the source or cause….

It is infeasible to discontinue operations mid-operation. This is not always feasible due to safety considerations of the well. To stop mid-operation could potentially leave a wellbore uncontrolled and endanger the safety of personnel and the environment. This is an extreme measure for a very expensive operation to shut down before an investigation is even conducted. The odor may not even be coming from these operations.

Response

The proposed amendment language has been revised to directly cross-reference the exemption currently provided in Rule 1148.1 to address safety considerations.

Comment #22

Remove the requirement for electric or alternative fueled workover rigs.

The provisions that require only electric powered or natural gas-, propane-, or butane-fired portable workover rigs is technically infeasible since there are no such rigs available in the United States. At any one time there could be up to 40 portable workover rigs operating in the LA Basin at one time. Even if gas rigs were available, the gas (propane, butane, CNG or LNG) would need storage onsite in large, portable, pressurized tanks. A diesel tractor trailer would be required to pull the tank from location to location for filling. This is both a safety concern as well as a space constraint on location with this type of rig. If the thought is to push electric and/or gas rigs because they are cleaner, as a comparison, a Cummins diesel 14.9 liter, 500 H.P. on road engine, Tier 4 final is certified at .18 ppm NOx (Tier 4 standard is .2 ppm). The PM is certified at .0000 ppm (Tier 4 standard is .01 ppm). So the Tier 4 final certified engines are extremely clean. If this provision is adopted and if the triggers of the provision were met, an operator would not be able to attain/operate such a rig, and thus, be unable to perform necessary well work as required by the DOGGR. The resulting effect is a taking of the operator's rights.

Response

See Response to Comment #1-24.

Comment #23

Remove the requirement to "store any removed drill piping and drill rods in a manner that minimizes emissions from crosswinds through the use of either a tarp or similar covering or by storing within an enclosed area"

The requirement is not feasible. If required, the volume of tarp or plastic sheeting that would be required (since you could not re-use) would create more vehicular criteria pollutant emissions during its transportation and disposal than would ever be emitted

from the drill pipe itself. As noted previously, four years of data collected by one company registered no odor or emission issues from these activities.

Response

The proposed amendment requires that facilities review the current feasibility of such measures as part of any required odor mitigation plan. Any benefit analysis conducted by the facility in support of an alternative best practice will be considered by the District should an odor mitigation plan be required. In addition, the proposed amended rule language and staff report have been revised to remove reference to the terms "tarping" and "covering".

Comment #24

Delete the changes that require more stringent LDAR. See comment 16 above regarding operator's data (air monitoring data for past 4 years and 1148.1 data for past 10 years) supporting no evidence which justifies the reduction in repair time under Rule 1173. The proposed changes create internally inconsistent language within existing AQMD rules and make it more burdensome for operators to comply.

The changes add confusion to Rule 1173. When would rule 1173 not be applicable? How would a leak be identified and quantified if not per Rule 1173 Inspection and Maintenance (I&M) Program? Using the District approved "CAPCOA-REVISED 1995 EPA CORRELATION EQUATIONS AND FACTORS" for calculation of fugitive emissions from equipment leaks, the total hydrocarbon (THC) emissions from a valve leaking at an EPA Method 21 screening value of 250 ppmv is calculated to be less than 1/1,000th of one pound per day. Furthermore, using a typical speciation profile for produced gas from a well in the South Coast Basin, the benzene associated with such a leak is calculated to be approximately 1/1,000,000th of one pound per day. Do these levels of emissions justify even the current required component repair times, let alone the proposed more stringent ones?

Response

The proposed language clearly identifies consideration of a shorter repair time than currently required under Rule 1173 for facilities that are subject to an odor mitigation plan and where an odor nuisance potential has been identified through a specific cause analysis or by the facility during the development of the odor mitigation plan. Because a facility will be identifying this measure as part of an odor mitigation plan that is submitted to the SCAQMD for approval, there would be no confusion with respect to the applicability of either rule or the odor mitigation plan.

Comment #25

The feasibility determination in the Odor Migtigation Plan should include the following language …..is not feasible to include "or is not related to the confirmed odor complaint events(s) at the facility" subject to approval…." to ensure the Odor

Monitoring and Mitigation Requirements address the specific odor that is the subject of the complaint event(s).

Response

The odor mitigation plan is intended to support a facility's overall odor management system. As such, it is a comprehensive evaluation of a facility's operation, including operational procedures and odor management procedures, which are not limited to the specific cause analysis or notice of violation that may have triggered the requirement for the plan.

Comment #26

The Test Methods section should include the following language: …...Method 21 using an appropriate analyzer calibrated with methane "or any other method demonstrated by the applicant to be equivalent and approved in writing." The analyzer…….. Reinstate original "(h)(4) Equipment Test Methods", which is shown as a strike through in this version of the rule.

The change could allow the use of a PID, which is the preferred and most cost effective measurement device in many instances. TVA's measure specifically TOC's and PID's measure specifically VOC's. TVA's are calibrated with methane and PID's are calibrated with hexane. Cost of a TVA is $17,000 and cost of a PID is $3,000. A TVA has an ignition source with a flame. Since well cellars are class 1 division 2 according to American Petroleum Institute Recommended Practice 500B, which means non-explosion proof equipment, is not allowed in the area without monitoring equipment and a hot work permit, the PID is the preferred measurement device. The PID is explosion proof and the TVA is not. Additionally, the goal of 1173 and 1176 is to control VOC's. Perhaps there could be an adjustment to the limit of 250 ppm TOC's to an appropriate VOC ppm limit.

Response

The provisions for the use of alternative test methods have not been deleted in the proposed amendment. Rather, the language has been relocated to the beginning of subdivision (h) with the same applicability as the current rule, including allowing a facility to use a PID for monitoring purposes where approved.

Comment #27

The written request and justification for development of a company safety manual that is to be submitted to the Executive Officer, needs to have a defined timeline for approval by the District. It is recommended that a 30-day approval process be defined in the Rule for whether the justification meets the criteria for this exemption.

A time line needs to be added so as not to impede the activities of the operator being requested for exemption. An additional proposal would be to discuss a CIPA member

submittal for an industry-wide justification since the safety considerations would be industry-wide in nature.

Response

The submittal language was removed from the prior iteration of the proposed amended rule. The demonstration would be required as part of use of the proposed exemption in the event any compliance related SCAQMD investigation.

Comment #28

Remove the changes to "1,500 feet" and maintain existing rule language of "100 meters" associated with the exemption provided for low producing wells.

Response

The proposed language has been revised to continue the exemption for low producing wells located outside of 100 meters of a sensitive receptor.

Comment #29

Change the rule to require an Odor Mitigation Plan for every facility upon rule adoption—do not require waiting until after odor complaints occur.

Response

See Response to Comment #2.

Comment #30

AQMD should commit to providing an evaluation of onsite monitoring and monitoring options for the community. Monitoring alarms and systems should be outlined in the rule.

Response

SCAQMD is currently reviewing emerging monitoring technologies with particular emphasis on lower cost fence-line monitoring capabilities to supplement existing inventory efforts. Oil and Gas Production Facilities are part of this ongoing effort. Additional descriptions of the systems and capabilities under review are included in Appendix A – Monitoring Systems for the Oil and Gas Production Industry to the staff report.

Comment #31

AQMD should provide the public with an evaluation of Best Available Retrofit Control Technology (BARCT) for all existing oil drilling and Best Available Control Technology (BACT) for new, modified and expanded operations, including best available equipment, inspection techniques, and best practices.

Response

A brief discussion on BACT and BARCT has been included in the Draft Staff Report.

See also Response to Comment #3.

Comment #32

The proposed amendment should also include monitoring and mitigation plans to prevent oil spraying of houses and vehicles during initial and ongoing operations.

Response

The incident noted ~~should be~~ is typically handled under Rule 402 - Nuisance. PAR1148.1 is intended to bridge the gap for odors in part because of the concurrent VOC emission reduction potential. Oil deposition should be handled on a case-by-case basis~~. Until the case noted has been addressed, it is unclear what universal standards would be applicable to all facilities.~~ and as such, the proposed amendment has been revised to incorporate the requirements of a Specific Cause Analysis for any Confirmed Oil Deposition Event, which has been defined as an occurrence of property damage due to the airborne release of oil or oil mist from an oil and gas production facility, as verified by District personnel.

Comment #33

A hazardous risk analysis should be performed for any facilities using or storing hydrogen fluoride

Response

Well acidization activities, including use of hydrogen fluoride, is not covered by Rule 1148.1, but these activities are included as part of Rule 1148.2 – Notification and Reporting Requirements for Oil and Gas Wells and Chemical Suppliers implementation. Any additional requirements associated with well stimulation based on the data obtained under Rule 1148.2 would be addressed in a subsequent rule development effort.

Comment #34

Diesel truck emissions and other diesel engine emissions as well as analysis of benzene, toluene, ethyl benzene and xylene (BTEX) compounds should be part of the proposed amendment for facilities located within 1,500 feet of a sensitive receptor.

Response

These activities are currently subject to Rules 1401, 1402, 1470, and the AB2588 program and annual emission reporting programs, and are regulated in various ways and by various agencies.

Comment #35

The proposed amendment should require that all information be made publicly available to provide opportunity for public comments and be responsive to these comments. More transparency is needed for all new and existing drilling operations to provide all of the plans and reports including all specific cause analysis reports, and all odor mitigation plans.

Response

The requirements for managing information associated with confirmed odor events will be addressed through implementation of the Board Resolution item included with the Final Hearing Package. This may include, but are not limited to, a specific SCAQMD website that could list confirmed odor events and specific cause analysis reports submitted by facilities.

Comment #36

The odor mitigation plan should be updated to address any reported odors that occur whether confirmed or unconfirmed

Response

There would be little legal standing to enforce an unconfirmed odor complaint. However, facilities are free to voluntarily conduct an internal investigation and work directly with complainants on any unconfirmed complaints. Staff believes that the required signage under the proposed amended rule may also encourage the complainants to contact the facility first to accelerate corrective actions.

Comment #37

Require operators to update standard operating procedures (SOP) under subparagraph (f)(2)(C) and other work practice plans should be required to prevent future re-occurrences of odors.

Response

The provisions of this section of the proposed amendment have been strengthened to require facilities to document the rationale for not including specific considerations.

Comment #38

Require records to be maintained for 10 years.

Response

Current record retention under Rule 1148.1 is a three-year retention, with a five year retention for major sources subject to Title V of the federal Clean Air Act. In general, the record retention requirements are established based on the

compliance schedule for any applicable regulatory requirement. In many cases, an annual requirement would b accompanied by a two-year retention to ensure that regulated facilities are capable of demonstrating compliance through the next compliance milestone. Permit applications are generally required for the life of the permitted equipment to ensure adherence to the facility representation of the equipment potential to emit. Staff does not believe that a 10-year universal record retention is accompanied by an applicable regulatory milestone, and therefore does not recommend extending the current retention requirements.

Comment #39

Require at a minimum the same level of leak detection and repair that is mandated for oil refineries including frequent inspections. Furthermore, the proposed amendment should not allow standing oil in well cellars.

Response

Oil and Gas Production Facilities are currently subject to Rule 1173. Additional leak detection and repair is part of the current Rule 1148.1. The proposed amendment further increases the stringency of this requirement by tightening the leak repair time for facilities subject to an odor mitigation plan, and also requires accelerated clean-up of wells that exceed 250 ppmv and that are located within 1,500 feet of a sensitive receptor, which is more stringent than the existing requirement that applies to wells located within 100 meters (328 feet) of a sensitive receptor.

In addition, the proposed amended rule language has been updated to require monthly inspections for any component identified as an odor source as part of a specific cause analysis until six consecutive months where the measurement does not exceed the regulatory leak thresholds.

Finally, the proposed amended rule language has been revised to include a requirement to pump out or remove organic liquid that has accumulated in the well cellar by the end of the day following three complaints in a single day as verified by District personnel.

Comment #40

Improve fugitive emission control beyond simple tarps requiring more protective fugitive emission control to protect against evaporation. Nonetheless, the proposed rule incorporates additional best practices, such as the use of a grommet, to further minimize odors associated with oil and gas production facilities.

Response

The proposed use of a covering or tarp~~s is~~ was for a specific activity and intended to minimize odors. Oil and Gas Production Facilities are currently subject to various fugitive emission control requirements, including Rules 461, 1173, 1176,

and the existing elements in Rule 1148.1. Nevertheless, reference to the use of tarps or coverings has been removed from the proposed amended rule language and staff report.

Comment #41

Minimize on-site combustion as much as possible in concert with eliminating fugitive leaks and venting of gases

Response

Combustion emissions are subject to current permitting and BACT requirements. The trend toward the use of micro turbines over flaring balances the overall environmental impacts.

Public Consultation Meeting Comments

The following comments were received at the May 28, 2015 public consultation meeting:

Comment #42

The trigger for the requirement to perform monthly inspections on specific components identified in a specific cause analysis should refer to those that have "caused or likely to have caused" the confirmed odor event rather than being referenced as a "potential" source, in order to be consistent with other proposed amended rule language.

Response

The proposed amended rule language has been updated for consistency as follows:

[…] the operator of an oil and gas production facility shall conduct a monthly TOC measurement on any component that has been identified as ~~a potential odor nuisance source~~ causing or likely to have caused the confirmed odor event through a submitted specific cause analysis report submitted in accordance with the provisions of subdivision (f). […]

Comment #43

The reference to drill piping and drill rods in the proposed amended rule language may be better referred to as production tubing and sucker rods to reflect industry terminology for oil and gas production facilities.

Response

The proposed amended rule language has been updated as follows:

[…] The oil and gas production facility shall store any removed drill piping, production tubing and sucker rods in a manner that minimizes emissions from crosswinds […]

References within the staff report have been similarly updated for consistency.

Comment #44

Please clarify further the types of monitoring systems that would meet the requirements of paragraph (d)(12) of PAR1148.1. Facilities' monitoring capability varies from site to site and most do not have dedicated LEL monitors throughout the site.

Response

Staff considers the various process monitoring and fire alarm systems in use today to meet the requirements of paragraph (d)(12) of PAR1148.1, which requires that such systems be used and maintained in operational condition. The rule language has been further revised to clarify that such systems be capable of alarming or notifying (rather than alarming and notifying) operators to ensure timely response to a response condition in consideration of the various systems currently in use. The requirement for a centrally located monitoring system has been further revised to apply only to central processing areas of an oil and gas production facility located within 1,500 feet of a sensitive receptor, in order to monitor and ensure proper facility operation. Any additional requirements that may apply as part of an odor mitigation plan would be integrated into either an existing system or as part of a new installation and may apply to specific equipment, processes or activity identified as causing or likely to have caused a confirmed odor event or Notice of Violation, rather than to the facility as a whole.

(Please also see response to Comment #1-8 and Comment #15)

Public Consultation Meeting Written Comment

The following comment letter was received from the California Independent Petroleum Association, dated June 9, 2015. The letter has been bracketed for cross-referencing with corresponding responses following each page.

Comment Letter #2

CIPA

1200 Discovery Drive, Suite 100
Bakersfield, CA 93309
Phone: (661) 395-5287
E-Mail: blair@cipa.org

June 9, 2015

Naveen Berry, Planning & Rules Manager
Phillip Fine, Assistant Deputy Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

VIA ELECTRONIC MAIL

RE: Draft Revisions to Rule 1148.1.-Jun15 Version

Dear Mr. Berry:

The California Independent Petroleum Association (CIPA) respectfully submits our third round of comments on the proposed revisions to Rule 1148.1. CIPA is a non-profit, non-partisan trade organization representing over 170 oil and gas producers and over 350 associate members throughout California, including operators throughout the LA Basin. CIPA respectfully continues to question the need for the proposed rule revisions, especially given that the concerns voiced by the District are already dealt with by other District Rules, including Rules 402, 1173 and 1176. We also continue to be concerned that the proposed revisions single out a specific industry, include infeasible requirements, and would provide no meaningful improvements at significant expense. 2-1

General Comments

The data collected in accordance with the requirements of Rules 1148.1 and 1148.2, odor and nuisance complaint records including SCAQMD investigations, and specific oil production site data does NOT, except in a few specific instances, support any action by the District. In particular, a broad rulemaking solution is not warranted when there is no identified, verified, or persistent widespread problem to be solved. 2-2

The data and evidence presented by the District indicates that oil and gas operations does not pose any more or less of an issue than other industrial operations or land uses throughout the area and, thus, does not warrant separate rulemaking action outside of Rule 402. There is no evidence of significant widespread odor impacts from existing oil and gas operations. Thus, there is no justification for the proposed rulemaking. In fact, there is substantial evidence to the contrary. In apparent response to our previous requests for such data, the District has included some historical odor complaint data related to oil and gas production facilities in its final staff report. This data indicates that more than 98% of the odor complaint history is associated with five specific facilities, each of which is located in a high density residential area. Thus, we believe this data supports our position that rulemaking which imposes additional requirements and significant cost impacts on all oil and gas production facilities is not warranted. 2-3

Response to Comment #2-1

See Response to Comment #1-1, #1-5, and #1-9.

Response to Comment #2-2

See Response to Comment #1-1, #1-5, and #1-9.

Response to Comment #2-3

See Response to Comment #1-1, #1-5, and #1-9.

Comment Letter #2 (cont.)

removed from wells, component leaks, exhaust from diesel engines, etc.) may have been responsible for, or contributed to, the odors. CIPA specifically requested such information in its previous comments, but it has yet to be provided. Without such data, the rule amendments being proposed by the District amount to a broad mixture of control measure "guesses", most of which are likely to have no effect, as opposed to specific data-driven measures that address a specific problem or problems. As a result, the proposed rule amendments will be highly cost-ineffective, achieving little if any emissions reductions while imposing significant additional operating costs. 2-4

Beyond these general concerns, CIPA has the following specific concerns regarding the proposed rule language:

1500 Foot Distance to Sensitive Receptor as Trigger for Additional Requirements
There is no basis for the proposed change to require well cellar pump-outs within one day (vs. five days) for well cellars located within 1500 feet (vs. 100 meters) of a sensitive receptor. First, the 1500 foot criterion is arbitrary and not based on any data or scientific analysis. Further, we are not aware of any confirmed odor complaints that have identified well cellars as the cause of odors. Increasing the distance criterion from 100 meters to 1500 feet will subject hundreds, possibly thousands, of additional well cellars to this requirement, significantly increasing costs and potentially requiring the use of additional vacuum trucks and other vehicles on surface streets, resulting in increased vehicular traffic and emissions. 2-5

Monitoring and Alarm System
As reflected in the Final Staff Report, District staff has stated that it believes all (or nearly all?) operators already have a system in place that satisfies this requirement. But, because the District has not defined the characteristics of an acceptable system, this is far from clear to operators,. At the May 28, 2015, Public Consultation Meeting, staff described a configuration of LEL (lower explosion limit) monitors tied into a central alarm system as an example of what would satisfy this requirement and stated their belief that virtually all facilities already have such a system in place. But this is not the case. Thus, this requirement should either be eliminated or District staff should officially deem that existing systems, whatever they are, already meet this requirement. Depending on exactly what the Districts' requirements for a monitoring and alarm system are, there may be significant costs associated with required system upgrades. 2-6

Trigger for Odor Mitigation Plan
A single NOV should not trigger additional compliance requirements of any kind. An operator should have an opportunity to address and fix the problem that led to the NOV. This is a "one 11strike and you're out" mentality. Two nuisance NOV's in any six month period would be a more reasonable trigger. 2-7

Odor Mitigation Plan Requirement for Storage of Piping and Rods Removed from a Well
The requirement to store removed piping and rods in "an enclosed area or other equivalent method" is not reasonable considering the cost impact and the small amount and short duration of the emissions likely involved. Enclosed structures or an "equivalent method" may be feasible for a few limited urban facilities with small footprints, but not for larger facilities extending over wide areas. At the May 28, 2015, Public Consultation Meeting, staff described "a tented structure and negative air machine" as an example of an "equivalent method". But this is not 2-8

Comment Letter #2 (cont.)

practical for most facilities. It would be costly and ineffective and would create additional unnecessary vehicular traffic and emissions during each well activity. Most well locations at larger facilities would require a gasoline or diesel engine to power the negative air machine, creating still more emissions and noise. Also at the May 28, 2015, Public Consultation meeting District staff verbally agreed that piping and rods are not "stored" while temporarily standing in the derrick of a rig during a well activity. But language in the staff report conflicts with this. It is not reasonable for storage requirements to apply to piping and rods temporarily standing in the derrick of a rig while well work is being performed. Finally, the general requirement for the use of rubber grommets to wipe excess liquid from piping and rods as they are removed from a well should minimize the potential for piping and rods to be sources of emissions and odors. 2-8

Comments on Final Staff Report
Additional comments on specific aspects of the Final Staff Report are contained in the attachment.

Summary
CIPA continues to be in disagreement regarding the need for and the overall scope and many of the specific requirements in the proposed amended rule.

Thank you in advance for your consideration of our comments. CIPA appreciate the opportunity to have met with District staff in January and again via telephone in April to discuss our concerns with the proposed amended rule. Please feel free to contact me should you have any questions.

Sincerely,

Blair Knox
CIPA Director of Regional Affairs

Response to Comment #2-4

The current complaint investigation process under the implementation of Rule 402 – Nuisance involves tracing of odors at the location of the complainant to a source, which can be as broad as a facility. PAR1148.1 adds the requirement for a specific cause analysis for confirmed odor events, which would drive the identification of the activity or equipment that caused or was likely to have caused the odor. This additional enforcement mechanism is not currently in place and consequently identification of the activity or equipment contributing to an odor complaint is not consistently available. However, because the requirements of PAR1148.1 are event driven, only those facilities that trigger the additional requirements would be affected prospectively, using specific data driven measures to address any facility identified specific problem or problems through a specific cause analysis and submitted report.

See also Response to Comment #1-1 and 1-6.

Response to Comment #2-5

The requirement to remove accumulated organic material from a well cellar within the following business day rather than within the five days following detection would merely push the job for any required vacuum trucks to an earlier date rather than create additional jobs. Industry has indicated that well cellars are typically well maintained, leading to the conclusion that required repairs are generally infrequent such that a following day clean out requirement would not result in more trips than would be required under a five-day carryover. However, for those well cellars located in closer proximity to sensitive receptors, a more rapid clean out would serve to reduce the potential for odor nuisance. Over the five-year period reviewed as part of Appendix B, both of the Rule 1148.1 NOVs identified in the sample were associated with the well cellars, and both were immediately precipitated by community complaints for odor.

See also Response to Comment #1-25.

Response to Comment #2-6

Staff considers the various process monitoring and fire alarm systems in use today to meet the requirements of paragraph (d)(12) of PAR1148.1, provided that the systems in place are used and maintained in operational condition. Staff's verbal description of a configuration of lower explosion limit (LEL) monitors tied into a central alarm system was representative of a type of system observed, but did not represent the expectation for all facilities. Locations with fewer wells having a facility-based system rather than a system with individual well monitoring may be sufficient to provide the protection needed to respond to fire or safety hazards, in accordance with applicable federal, state or local building or fire safety regulations. In addition, the requirement for a centrally located monitoring system has been revised to limit the requirement to facilities with central processing areas located within 1,500 feet of a sensitive receptor. As noted in the staff report, facilities would not be expected to install new systems. However, to address any potentially unaccounted facilities, staff

has added additional costs reflecting roughly five percent of the facility population to the analysis.

The staff report has been updated to further clarify the purpose of the central monitoring system envisioned by the proposed amendment as follows:

> Oil and gas production facilities generally monitor ~~equipment~~ for ~~safety~~process or fire protection purposes to comply with a broad range of federal, state or local building or fire safety regulations, and thus typically have a gas detection program. In addition, these systems can support implementation of the General Duty Clause of the Clean Air Act, Section 112(r) as part of a facility hazard assessment and accidental release prevention program, typically from a central location~~,~~. ~~s~~Some facilities utilize~~ing~~ control centers that also allow for monitoring and controlling operating parameters to support efficiency or serve as an indicator for leak related emissions.

See also Response to Comment #1-8 and Comment #44.

Response to Comment #2-7

A facility that has received an NOV for Rule 402 is understood to have met the standard for having the potential to create a nuisance. Currently, the threshold for triggering an NOV is high − typically requiring six independent complaints confirmed from the same occurrence. Prior to receiving an NOV for Rule 402, under PAR1148.1, a facility can experience one or more confirmed odor events, or receive one or more complaints, each acting as a lower level compliance action that would not trigger the requirement for an Odor Mitigation Plan (OMP). Because an OMP is meant to prevent public nuisance, the actual issuance of an NOV for Rule 402 would represent a failure of the facility's odor mitigation practices and the need for an OMP or a revision to an existing plan.

See also Response to Comment #18.

Response to Comment #2-8

The staff report has been revised to distinguish between the vertical staging of piping or rods on a derrick and the subsequent storage of removed rods subject to the odor mitigation plan requirement of paragraph (g)(3)(C).

See also Response to Comment #43.

Comment Letter #2 (cont.)

PAR 1148.1 Final Staff Report – CIPA Comments
(Italics are excerpts from the Final Staff Report dated June 2015)

Executive Summary

- *(p1) An increased awareness of oil and gas production wells due to community concerns over potential environmental impacts from well stimulation techniques such as hydraulic fracturing has resulted in a goal to minimize impacts to nearby residents and sensitive receptors from ongoing operations that do not include drilling.*

And

- *(p1) As a separate, but concurrent effort, proposed amendments to Rule 1148.1 address the production and maintenance aspects of an operating oil and gas well, rather than the pre-production or stimulation aspects covered under the requirements of Rule 1148.2.*
  - Either revise these statements to reflect that drilling operations are addressed in the rule or remove the rule requirements applicable to drilling (e.g., rubber grommet for "drill piping", monitoring and mitigation of "drilling", and storage of "drill piping")

2-9

- *(p1) The proposed amendment incorporates some of the information gathered through the reporting mechanisms provided by Rule 1148.2*
  - Please provide a reference to which provisions of the rule does this refer to?

2-10

- *(p1) There is no anticipated significant cost increases associated with the proposed amendment because the amended rule focuses on improving work practices and establishing odor mitigation procedures as a contingency, rather than on additional engineering controls. Any additional cost impact associated with implementation of improved work practices and odor mitigation procedures are expected to be administrative and nominal.*
  - There are cost increases associated with requirements to:
    - General:
      - remove fluids > 250 ppmv from more well cellars (those within 1500 feet vs. 100 meters) within one day (vs. five days) (this will increase emissions from vacuum trucks)
      - install and operate a "monitoring system" to provide notification / alarm to a "central location" (**unclear what constitutes a satisfactory system**)
      - perform monthly (vs. quarterly) fugitive component inspections for components "identified as a potential odor nuisance source through a submitted specific cause analysis report".
    - Once a facility is required to have an Odor Mitigation Plan:
      - Provide an enclosure or equivalent controls for pipe and rods when "stored"
      - repair leaks > 250 ppmv from more components (those within 1500 feet) within one day (vs. 2-7 days)
  - In addition, even administrative actions (e.g., responding to anticipated increased odor complaints resulting from signage "inviting" the public to call AQMD, increased recordkeeping, and preparing Specific Cause Analyses an

2-11

Response to Comment #2-9

PAR1148.1 applies to the operation and maintenance activities at oil and gas production facilities. Odor nuisance related aspects associated with drilling, well completion or rework at an oil and gas production facility are subject to the odor mitigation plan requirements that are triggered following receipt of an NOV for Rule 402 – Nuisance, or notification of three or more confirmed odor events in a six month period.

The executive summary has been revised as follows:

> As a separate, but concurrent effort, proposed amendments to Rule 1148.1 address the ~~production~~ operation and maintenance aspects of an ~~operating~~ oil and gas ~~well~~ production facility, rather than the pre-production or stimulation aspects covered under the requirements of Rule 1148.2.

See also Response to Comment #43.

Response to Comment #2-10

As noted, some of the information gathered through the reporting mechanism provided by Rule 1148.2 led to the previous provisions associated with alternative fueled or electric powered workover rigs. As these provisions have been removed from the proposal, the staff report has been updated to remove this cross-reference.

Response to Comment #2-11

The Executive Summary statement also includes a reference to the cost impact associated with specific cause analysis. Please refer to the Cost Analysis and Socioeconomic Impacts section of the staff report, which outlines the cost estimates associated with the provisions of the rule.

See also Response to Comment #2-6.

Comment Letter #2 (cont.)

Odor Mitigation Plans) have costs (unless current employees have spare time on their hands). 2-11

Background

- *(p5) Wellheads are susceptible to liquid leaks especially where the stuff box is poorly maintained or when large valves are opened and then closed, which often produces a noticeable amount of liquids, including hydrocarbons.* 2-12
  - "Stuff box" should be "stuffing box"
  - A "noticeable amount of liquids" are produced "when large valves are opened and then closed". Don't understand this. Are valves likely to leak to when opened and then closed? And large valves more so than small valves?
- *(p5) If the liquid is allowed to stand over an extended period, VOC emissions and related odors may be released to the atmosphere, and may lead to odor nuisance complaints from the local community.* 2-13

And

- *(p6) ..... well cellars are uncovered and can become sources of VOC emissions and associated odors when crude oil is collected and retained in this containment area for an extended period of time.*
  - Most emissions from a liquid leak "flash" within a short time of the leak; relatively small amounts of emissions occur as a result of "weathered" crude standing for "an extended period".
- *(p6) Some of the equipment that require permits by the SCAQMD include American Petroleum Institute (API) separators....* 2-14
  - API separators? – Believe this terminology refers to large refinery waste water separators / basins as opposed to production separators in oilfields (which are typically pressure vessels).
- *(p6) Gas collected from separators and oil treaters, along with vapors from storage tanks, may be processed through a glycol dehydration unit. This unit removes the water from the gas before it is put into a sales pipeline or used again in the dehydration process.* 2-15
  - "used again in the dehydration process"? Don't understand this. Maybe it should be "or before being used as fuel or re-injected in subsurface"?
- *(p7) The rods and the piping are pulled up through a casing which is filled with oil and other organic liquid.* 2-16
  - "filled with oil and other organic liquid"? This is overstated and misleading. Most SoCal wells produce 95%+ water and have reservoir pressures that are insufficient to support a column of liquid in the wellbore that extends all or even most of the way to the surface, so the casing is never "filled with oil and other organic liquid".
- *(p7) While the amount of VOC emissions released to atmosphere is short-term, the odor potential is great, unless measures are taken to wipe excess material during removal.* 2-17

Response to Comment #2-12

The staff report has been revised to correct the reference to stuffing box and with respect to large valves as follows:

> […] susceptible to liquid leaks especially where the stuffing box ~~is~~ or large valves are poorly maintained ~~or when large valves are opened and then closed~~, which ~~often produces a~~ can result in noticeable amounts of liquids, including hydrocarbons. […]

Response to Comment #2-13

Although "weathered" crude oil may contain lower amounts of VOC, the potential for emissions and odors is greater from a well cellar containing weathered crude than one that is free of organics. In addition, the accumulated organic material in the cellar may limit the ability to identify the source of the accumulation or to determine if there is an ongoing leak that requires repair. However, the staff report has been updated to remove the reference to an extended period of time to remove any potential ambiguity of the statement as follows:

> […] can become sources of VOC emissions and associated odors when crude oil is collected and retained in this containment area ~~for an extended period of time~~.

See also Response to Comment #2-5.

Response to Comment #2-14

The term "API Separator" is derived from the fact that such separators are designed according to standards published by the American Petroleum Institute (API); API separators include those that can be used at oil and gas production facilities. However, because the criterion for permitting is based on the air/liquid interfacial area [greater than 45 square feet air/liquid interfacial area requires an air permit per paragraph (n)(6) of Rule 219 – Equipment Not Requiring a Written Permit Pursuant to Regulation II], the staff report has been updated to refer to "large oil/water separators" rather than "API separators."

Response to Comment #2-15

The staff report has been revised to include the following clarification based on this comment:

> "[…]This unit removes water from the gas before it is put into a sales pipeline, or used as fuel, or re-injected into the subsurface.[…]"

Response to Comment #2-16

The staff report has been revised to refer to "contains oil and other liquid" rather than "is filled with oil and other organic liquid" to meet the intent of the comment.

Response to Comment #2-17

The reference to elevated odor potential from removing sucker rods and production tubing while wet was identified by operators to District staff during field visits, although it was also indicated that most maintenance and repair activities do not involve wet removal. As included in the proposed amended rule, the current practice by some facilities of using a grommet to remove excess material from the sucker rods and production tubing is a simple approach to minimize potential odors.

Comment Letter #2 (cont.)

- "odor potential is great"? This is subjective statement that indicates staff bias and should be removed. 2-17

- *(p10) Operators of oil wells and well cellars are not required to obtain SCAQMD permits for that equipment and not all oil wells utilize well cellars. Only those facilities with equipment such as API separators, tanks, vessels, heaters, boilers, internal combustion engines and clean-out sumps (part of the dehydration or wastewater system permit unit), and "control" equipment such as heaters, flares, gas treatment equipment, internal combustion engines, microturbines, and boilers would have SCAQMD permits.* 2-18
  - Inconsistent terminology, i.e., AQMD's AER group and AER reporting tool refer to R222 well registrations as permits and these registrations have assigned A/N's and Permit #'s.

- *(p10 - Table 2) Permitted or Registered SCAQMD Oil and Gas Production Facilities?* 2-19
  - Is this the number of registered oil well groups (vs. facilities)?
    - 144 RECLAIM
    - 329 non-RECLAIM
  - Table is confusing, i.e., facilities vs. wells vs. R222 oil well groups

Odor Mitigation Work Practices and Associated Activities

- *(p12 – Table 3) .... staff reviewed 100 out of 403 (roughly 25%) oil and gas production facilities, with only nine facilities identified as having more than one odor complaint, both confirmed and unconfirmed (alleged) over the last 5 years (2010 through 2014).* 2-20
  - 91% of the complaints are associated with three facilities
  - 96.5% of the complaints are associated with three operators
  - What is the justification for imposing additional requirements on other operators / facilities?

Summary of Proposed Amendment

- *(p15) Effective 30 days after adoption, an oil and gas production facility, under the proposed amendment, will be required to utilize a rubber grommet designed for drill piping to remove excess or free flowing fluid from piping that is removed during any maintenance or drill piping replacement activity that involves the use the use of workover rig. (d)(10)* 2-21
  - "drill piping"? Is this requirement intended to apply to drilling operations? Or should "drill piping" be changed to "production tubing"?

- *(p17) The Specific Cause Analysis includes a brief review of the activities and equipment at the facility identified as contributing or causing the odor in question in order to determine the contributing factors and ultimately the corrective actions associated with the event.* And *The scope of the Specific Cause Analysis is limited to the possible origins and causes of the Confirmed Odor Event,* 2-22
  - What if the source of the odor cannot be determined?

- *(p19 – Table 6) If odors are detected from odor surveillance or odor monitoring at the perimeter of the facility, all drilling, well completion, or rework, repair, or maintenance of any well will discontinue until the source or cause of odors are determined and mitigated in accordance with measures previously approved.* 2-23
  - What if the source of the odor is not from the well activity? Well activity should not be impacted unless it is determined to be the source of the odor

Response to Comment #2-18

Under the SCAQMD Annual Emissions Reporting (AER) program pursuant to Regulation III, facilities are required to report emissions from both permitted and non-permitted equipment/devices and processes annually, if the facility's actual emissions are above the reporting thresholds specified in Rule 301(e) Table III and IV. The AER reporting tools allow for tracking of equipment that does not require a permit as "Emission Sources", and for those entries, the application numbers and permit numbers are not used. Additional instructions for completing the AER are available on the SCAQMD website ("Accessing Facility and Completing the Report" under the help section: http://www3.aqmd.gov/webappl/help/newaer/index.html)

Response to Comment #2-19

The number referred to in the comment applies to the number of facilities, which is based on SCAQMD facility ID numbers. The table refers to the number of facilities. For clarification, the first column has been revised to refer to "Oil and Gas Production," rather than "Oil Wells."

Response to Comment #2-20

The majority of the requirements of PAR1148.1 only apply to facilities if certain odor related event thresholds are met. As such, based on complaint history, most facilities would not become subject to the requirements for specific cause analysis or for an odor mitigation plan. These requirements are meant to prevent a public nuisance, which is a significant event, and mainly reflect best practices currently implemented at facilities that do not have a historical complaint issue.

See also Response to Comment #1-1.

Response to Comment #2-21

See Response to Comment #2-9 and Comment #43.

Response to Comment #2-22

The submitted Specific Cause Analysis Report includes the equipment or activity identified as causing or likely to have the event, as well as the steps taken to identify the source and cause of the event, and corrective measures to prevent recurrence of a similar event. Because a Specific Cause Analysis is only triggered after confirmation of the event by District personnel, the source of the odor is the facility, and it is incumbent on the facility operator to trace the odor to the activity or equipment to best derive the corrective measures necessary to address the immediate event and to prevent future events. Should identification of the specific activity or equipment prove elusive, the Specific Cause Analysis Report should contain the details necessary to demonstrate the operators' level of due diligence taken to ensure the prevention of future events.

See also Response to Comment #18.

Response to Comment #2-23

Table 8 of the staff report has been updated to reflect the revised rule language as follows:

> If odors are detected from odor surveillance or odor monitoring at the perimeter of the facility, ~~all~~ and confirmed from drilling, well completion, or rework, repair, or maintenance, the associated drilling, well completion, or rework, repair, or maintenance of any well will discontinue until the source or cause of odors are determined and mitigated in accordance with measures previously approved.

Comment Letter #2 (cont.)

- What if the source of the odor is not even from a source within the facility? A facility's operations should not be impacted by an odor from a different facility.
- What if the source of odor cannot be determined?
- No activity should be impacted until and unless it is determined to be a source of odors.
- (This table entry needs to be updated to reflect recent changes to the proposed amended rule.)

2-23

Emission Inventory

- *(P20) Staff does not expect any emission reductions or increases because the proposed amendment does not change any VOC standards, and is primarily intended to provide enforceable mechanisms to reduce nuisance odor potential and is otherwise administrative in nature.*
  - If there's no decrease in emissions, it's not reasonable to expect fewer odor events
  - Well cellar pump-out standards are being changed (1500 feet vs. 100 meters requires pump out within one day vs. 5 days)
  - LDAR standards are being changed

2-24

Cost Analysis and Socioeconomic Impacts (pp. 20-24)

- *(P21) The following represents a conservative cost estimate for the implementation of the odor mitigation measures.*

2-25

  - Assumptions:
    - only three facilities are likely to need an OMP
    - other (470?) facilities will never need an OMP (and if they do, it's their own fault?)
  - Elements of OMP
    - Storage of rods and piping
      - Staff report describes the need to enclose rods and piping while they are standing in the derrick. But at the May 28, 2015, Public Consultation meeting staff said that rods and pipe standing in the derrick during well activity did not constitute "storage", thus would not trigger the enclosure requirement. Clarification is needed, as enclosure of derricks is not practical except at small facilities with limited need to move the derrick structures. Further, staff mentioned tenting and negative air machines as a possible "equivalent method". Tenting and negative air machines would be cost prohibitive, would likely require diesel engines to power the negative air machines at most locations, and, including the additional necessary transportation activity to move the equipment from site to site, would likely create more emissions and potential for nuisance than the activity they are intended to control.

2-26

    - Odor surveillance
      - Staff report says "the facility is required to cease operation until the source of the odor is determined and mitigated". This is not reasonable and should be limited to only the equipment or activity that is determined to be the source of odor.

2-27

    - LDAR

Response to Comment #2-24

Although some emission reductions may occur through the implementation of additional odor mitigation measures, the resultant reduction would be difficult to quantify in a manner suitable for inclusion in a State Implementation Plan. As such, the staff report has been revised to refer to quantifiable emission reductions as follows:

> […]Staff does not expect any quantifiable emission reductions or increases because the proposed amendment does not change any VOC standards, and is primarily intended to provide enforceable mechanisms to reduce nuisance odor potential and is otherwise administrative in nature.

Response to Comment #2-25

The parameter used in the cost analysis is based on historical complaints over the previous five-year period, thus representing three facilities every five years. The analysis does not presume that other facilities would never be subject to an OMP, only that the rate of inclusion would on average be three every five years.

Response to Comment #2-26

See Response to Comment #2-8 and Comment #43.

Response to Comment #2-27

The Cost Analysis section of the staff report summarizes the odor surveillance requirement by referring to the detection of odors related to the specific repair or maintenance activity and subsequent ceasing of associated activities under the odor is determined and mitigated. Staff believes the language in the staff report reflects the intent of this comment.

See Response to Comment #2-23.

Comment Letter #2 (cont.)

- The rule language and the staff report use different language. The rule language needs to be changed to conform to the language in the staff report, i.e., "would be required when a submitted Specific Cause Analysis report identifies a leaking component as the cause of a Confirmed Odor Event (vs. when identified as a potential source of odor). 2-28

- Centralized monitoring and alarm systems
  - Given testimony and staff comments at the May 28, 2015, Public Consultation meeting, it appears that District staff is assuming that systems already in place are generally more robust than is actually the case (e.g., LEL monitors connected centralized monitoring system). The District needs to clearly define what constitutes a satisfactory "centralized monitoring and alarm system" before a final rule is adopted. If this is not done, the estimated costs in the staff report are likely severely understated. 2-29

Incremental Cost Effectiveness

- *(p24) Staff reviewed the current standards throughout the state and determined that PAR1148.1 represents BARCT for the operation of oil and gas production wells because there are no other more stringent limits available. Although implementation of PAR1148.1 reduces the potential for nuisance odors, it is not anticipated to result in emission reductions and therefore no incremental cost analysis is required under Health and Safety Code § 40920.6.* 2-30
  - If there are no emission reductions, isn't the incremental cost effectiveness infinite? How is that reasonable?

Comparative Analysis

- *(p25) Staff has determined that PAR 1148.1 does not conflict with the following rules because any similar requirements have been directly incorporated or cross-referenced into the rule language.* 2-31
  - There are conflicting requirements with R1173. Operators of facilities within 1500 feet of a sensitive receptor will need to refer to both rules in order to ensure compliance with all applicable LDAR requirements.

Appendix B – Sampling of Complaint History

- *(pB-2) "Also notable is the amount of complaints that are from outside the 1,500-foot radius. However, these complaints have been ~~verified~~ identified as confirmed at the address and ~~traced upwind to~~ the specific oil and gas production facility according to this sample search, although final verification status has not been specifically reviewed."* 2-32
  - This statement is unclear. What is the difference between "identified as confirmed" and "final verification status? Were the odors confirmed by the District as originating from the oil and gas facility or not?

General Comment

- Terminology: The terms "push rods", "lift rods", "drill rods", and "lift connector rods" are all used in different places the document, apparently all referring to the same thing, which is assumed to be downhole pump sucker rods in producing oil wells equipped with beam pumping units. 2-33

Response to Comment #2-28

See Response to Comment #42.

Response to Comment #2-29

See Response to Comment #44 and Comment #2-6.

Response to Comment #2-30

An incremental cost effectiveness calculation is not required.

See also Response to Comment #1-1.

Response to Comment #2-31

Although oil and gas facilities are subject to multiple rules, including Rule 1173, Rule 1176, and Rule 402, the determination of conflict is made based on the any overlapping requirements. The LDAR provisions contained in PAR1148.1 represent greater stringency rather than conflicting requirements. Moreover, the additional LDAR provisions contained within PAR1148.1 are triggered through notification of either a confirmed odor event or an odor mitigation plan, which directs operators to the applicable requirements.

Response to Comment #2-32

The introductory paragraph of Appendix B indicates that a sample of the facility complaint records were reviewed over a five year period encompassing 2010 and 2014. Detailed information, such as the outcome of the investigation including final complaint verification status and details on any violation notices, would require additional individual screening for each complaint and were not included in the Appendix. As such, the data system used to track complaints records each complaint initially by alleged source. As each complaint is investigated, the status may continue to be open or linked to follow-up actions, including NOV investigation, or parallel investigations for non-odor related regulatory compliance. Because the status of a complaint as confirmed is primarily relevant only if six or more complainants are involved for the same event, the level of verification and details associated with a complaint that is not associated with an NOV can vary within the system, and a more thorough review of the individual inspector reports would be required to verify whether a complaint was confirmed for the purpose of the requirements under PAR1148.1.

The reference to complaints in Appendix B therefore refers to those identified in the system as confirmed, but not verified through a review of the more detailed inspector reports and follow-up discussions with the field inspector to determine if the complaint would have been identified as confirmed under the requirements of PAR1148.1.

See also Response to Comment #1-1 and Comment #2-4

Response to Comment #2-33

See Response to Comment #43

Other Comments

In addition to the above comments, staff has received and reviewed numerous comments identifying typographical and grammatical errors, as well as cross-referencing updates. Staff appreciates the input and has updated the proposed rule language as appropriate.

REFERENCES

1. SCAQMD, Final Staff Report for Proposed Rule 1148.1 – Oil and Gas Production Wells, Proposed Amended Rule 222 – Filing Requirements for Specific Emission Sources Not Requiring a Written Permit Pursuant to Regulation II, 2004.

APPENDIX A. MONITORING SYSTEMS FOR THE OIL AND GAS PRODUCTION INDUSTRY

SAMPLING AND MONITORING APPROACHES

SCAQMD uses a variety of sampling and monitoring approaches, including use of canisters to measure hydrocarbons, handheld devices to screen for particulate matter (PM) and hydrogen sulfide (H_2S), as well as traditional fluid sampling and laboratory analysis for liquids and liquid constituents, to measure both upwind and downwind from a potential source to determine its contribution.

Summa Canisters

Evacuated containers are used to collect organics air samples. These canisters are thermally treated containers under a vacuum, and air sample are collected by opening a valve that is later closed after a pre-designated time period. SCAQMD uses Summa canisters, which stainless steel evacuated containers that have been electropolished on the interior to enrich the nickel and chromium surface and makes it more inert than untreated stainless steel.

Tedlar Bag Sampling

Tedlar bags are a simple and effective means of collecting gaseous samples when the target pollutant concentration is relatively high, about 10 ppmv. They can be used with or without a Teflon sampling probe. They are often used with evacuated sampling cases, however care is taken to keep the sample out of the sunlight to avoid sample degradation.

Handheld Devices

SCAQMD makes use of handheld detectors to screen low level concentrations of hydrogen sulfide (Jerome® Monitor) and particulate matter (DustTrak™).

Sampling

Small vials and jars are used to collect field fluid samples for follow-up analysis in the laboratory to determine organic content.

PAR 1148.1 MONITORING

Currently, oil and gas production facilities rely on a variety of monitoring systems, techniques and equipment to ensure operationally efficiency and safety, especially with respect to fire prevention. Some larger facilities may use more advanced systems that not only monitor process parameters such as temperature, pressure and tank levels, but also employ motor controlled valves to remotely manage some parts of the operation.

The proposed amended rule seeks to build upon the existing systems used to monitor safety and operational parameters because many of these parameters can serve as surrogates for potential emissions and accompanying potential odor events. Current operational parameter monitoring in oil and gas production facilities can range from traditional analog technology to high tech video monitoring with pneumatic valve operation and alerting software that provides real-time access through a smartphone or through a centralized operation center or control center. Most facilities are in between these two examples while transitioning from older control boards to the newer generation as facility equipment turns over, is expanded or upgraded. Where identified through a developed and approved Odor Mitigation Plan, the

proposed amendment would focus on integrating feasible and effective measures. The proposed amended rule would focus on monitoring alarm and notification systems.

FIXED GAS DETECTION APPLICATIONS

In the oil, gas, petrochemical refinery and chemical industry, a variety of fixed gas detection methods currently utilized primarily for safety and hazardous environment monitoring. These include:

- Ultraviolet (UV) and Infrared (IR) radiation of hydrocarbon-based fires
- Open Path Infrared (OPIR) for long-range hydrocarbon detection
- Non-dispersive infrared sensor (NDIR) and point IR for toxic and combustible gas monitoring
- Electrochemical (E-chem) toxic gas leak detection, oxygen within confined spaces
- E-chem for oxygen deficiency for confined space entry
- Catalytic bead and NDIR for combustible gas detection

REMOTE SENSING TECHNOLOGY FOR FUGITIVE EMISSIONS

Recent advancements in optical remote sensing technology have made it possible to measure and quantify fugitive VOC emissions from an entire facility or from an operational process unit. This is made possible by mobilizing a Differential Optical Absorption Spectroscopy (DOAS) and Solar Occultation Flux (SOF), and traversing along the fence line of the facility. The data obtained from the analyzer can be graphically displayed with proprietary software.

In September 2013, the SCAQMD Board authorized to contract with FluxSense AB of Sweden for a pilot study to monitor and quantify fugitive VOC emissions from the Tesoro Refinery in Wilmington, CA. The monitoring approach proposed by FluxSense AB included the deployment of SOF and mobile DOAS technologies for monitoring and quantifying emissions including VOC's and other traces gases (e.g. SO_2 and NO_2). SCAQMD continues to review opportunities to utilize this emerging technology as an additional tool for assessing fugitive emission sources and fugitive emission sources.

AIR QUALITY SENSOR PERFORMANCE EVALUATION CENTER (AQ-SPEC)

SCAQMD's Board approved $852,000 in July 2014 to fund the creation and first year of operation of the Air Quality Sensor Performance Evaluation Center (AQ-SPEC), which will be located at SCAQMD headquarters in Diamond Bar. The agency also will pursue funding opportunities to sustain the center in future years. This center, representing the nation's first comprehensive evaluation center, will test commercially available, low-cost air quality sensors.

The availability of such sensors, many of which can be purchased on the Internet for a few hundred dollars or less, is rapidly proliferating and many residents and community groups are

now using them to measure pollution levels in their neighborhoods. Data from the devices can be "crowd-sourced" in real time to Internet sites. However, there are no performance standards or testing centers to validate the accuracy of the devices, and preliminary tests have indicated that many of them are not reliable, perform poorly in the field and produce measurements that have little or no correlation to scientifically validated air quality data.

SCAQMD plans to acquire the air quality sensors and begin field and laboratory testing of them this fall. A dedicated website is expected to be launched in the near future and will include testing results and some guidelines and considerations for use of the new technology.

In the field, the sensors will be tested alongside one or more of SCAQMD's existing air monitoring stations using federally approved methods to gauge overall performance. Sensors demonstrating acceptable performance in the field will then be brought to the AQ-SPEC for more detailed testing.

SCAQMD also will encourage other air quality agencies, universities and national labs to submit any test data and reports they have to help expand the knowledge of available air quality sensors and their performance.

Low-cost air quality sensors have many potential uses from research to personal exposure monitoring to providing education, information and awareness about air quality levels and exposure. Poor or improper data obtained from unreliable sensors could lead to confusion and also jeopardize the successful development, deployment and use of the technology. SCAQMD's AQ-SPEC program is designed to help provide much-needed information about this emerging technology.

Field Testing

Air quality sensors will be operated side-by-side with more "standardized" air monitoring equipment such as Federal Reference Methods and Federal Equivalent Methods (FRM and FEM, respectively), which are routinely used to measure the ambient concentration of gaseous or particle pollutants for regulatory purposes. The testing will be conducted at one or more of SCAQMD's existing air monitoring stations (e.g., Rubidoux air monitoring station in Riverside, CA, and the I-710 station, a near-roadway site) to test overall performance.

Laboratory Testing

Sensors that demonstrate an acceptable performance in the field will be brought back to the lab for more detailed testing. A "characterization chamber" (set-up inside the SCAQMD laboratory) will be used to challenge the sensors with known concentrations of different particle and gaseous pollutants (i.e. both individual pollutants and different pollutant mixtures) under different temperature and relative humidity levels.

<u>Main Goals & Objectives</u>

- Provide guidance & clarity for ever-evolving sensor technology & data interpretation
- Catalyze the successful evolution / use of sensor technology
- Minimize confusion

Sensor Selection Criteria

- Potential near-tern use
- Real- or near-real time (e.g. 1-min)
- Criteria pollutants & air toxics
- Turnkey products first
- Price range: < ~$2,000 (purchase); > ~$2,000 (lease/borrow)

Type of Sensors That Are Being/Will Be Tested

- Electrochemical
- Metal Oxide
- Optical Sensors
- Other

Pollutants / Variables Measured

- Particle count and particle mass (e.g. PM2.5, PM10)
- Gaseous pollutants (NOx, CO, NO, H2S, SO2, VOCs, others)
- Meteorological parameters (e.g. T and RH)

Expected Results and Next Steps

- Provide the knowledge necessary to appropriately select, use, and maintain sensors and to correctly interpret their data
- Promote a better and more responsible use of available sensors
- Discover new and more effective ways to interact with local communities
- Provide manufacturers with valuable feedback for improving available sensors and for designing the next generation sensor technology
- Create a "sensor library" to make "low-cost" sensors available to communities, schools, and individuals across California

APPENDIX B. SAMPLING OF COMPLAINT HISTORY (2010 – 2014) – OIL AND GAS PRODUCTION FACILITIES

SAMPLE SURVEY

A sample of the 473 oil and gas production facilities complaint records were reviewed for the five year period between 2010 and 2014. The facilities were reviewed for the number of complaints received during along with identification of any notices of violation received for Rule 402 - Nuisance, Rule 1176 - VOC Emissions from Wastewater Systems, Rule 1173 - Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants, Rule 203 - Permit to Operate, and Rule 1148.1. Detailed information, such as the outcome of the investigation including final complaint verification status and details on ~~the~~ any violation notices, require additional individual screening for each complaint and ~~has~~ have not been included in this Appendix.

SAMPLE RESULTS

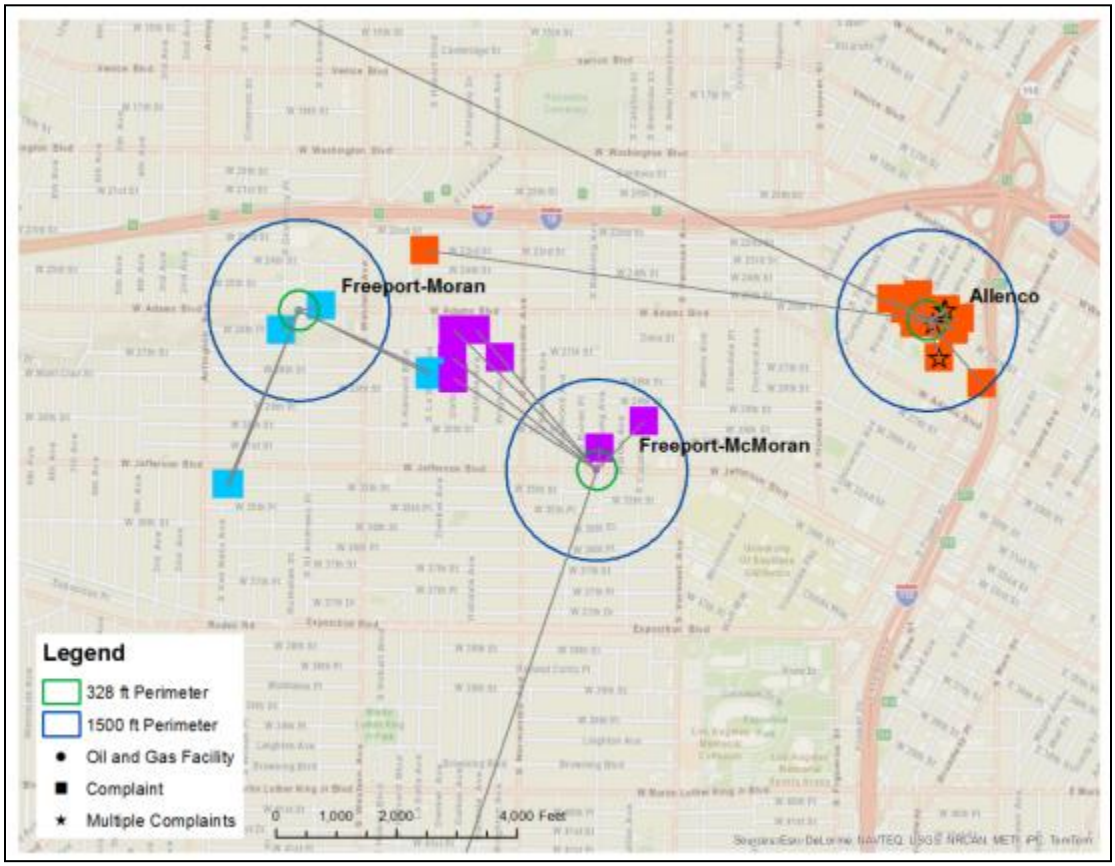
Over the reviewed five-year period, there were ~~26,986~~25,828 total odor complaints identified and recorded by the SCAQMD. From this total there were ~~353~~ 398 odor complaints that were alleged and identified as confirmed from industrial oil and gas wells facilities. The Table below lists facilities from the sample search, associated with the number of Rule 402 Nuisance notices of violation (NOV), along with other associated rule NOVs.

Facility Name	Location	No. Complaint	402 NOV	1176 NOV	1148.1 NOV	1173 NOV	203 NOV
AllenCo Energy	Los Angeles	~~258~~ 253	~~3~~ 6	~~4~~ 6	~~1~~ 5	2	4
Angus Petroleum	Huntington Beach	~~58~~ 109	0	0	0	0	0
Freeport McMoran	Jefferson St.	~~14~~ 15	0	2	0	0	0
Holly Street Inc	Huntington Beach	8	0	0	0	0	0
Freeport McMoran	W. Adams Bl.	~~7~~ 6	0	2	0	0	0
Amtek Construction	Whittier	3	0	0	1	0	0
Oxy USA Inc	Carson	1	0	0	0	0	0
Matrix Oil Corp	Whittier	~~1~~ 2	0	0	0	0	0
Greka Oil & Gas Inc	Placentia	1	0	0	0	0	0

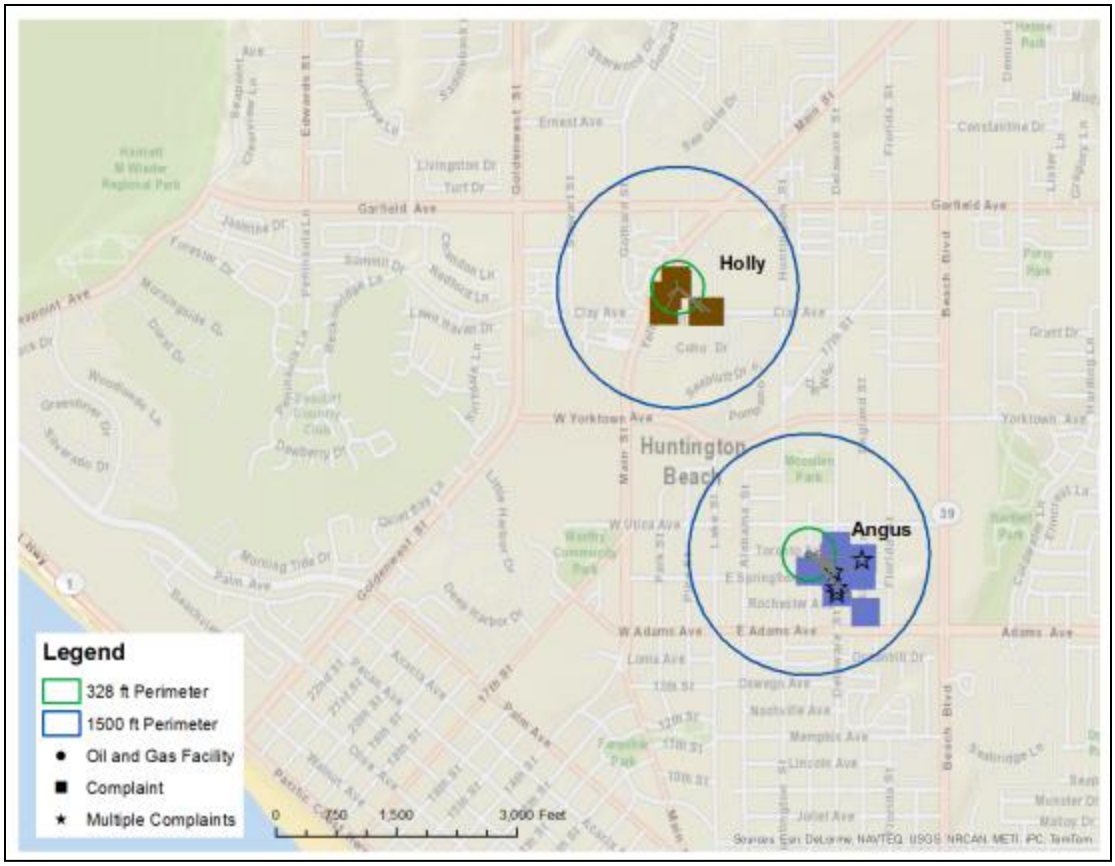
MAPS

A graphical map display was used for the facilities from the list above to help illustrate the distance from the facility to each of the complainants. The larger circle represents a sensitive receptor distance of approximately 1,500 feet from the proposed amendment and the smaller

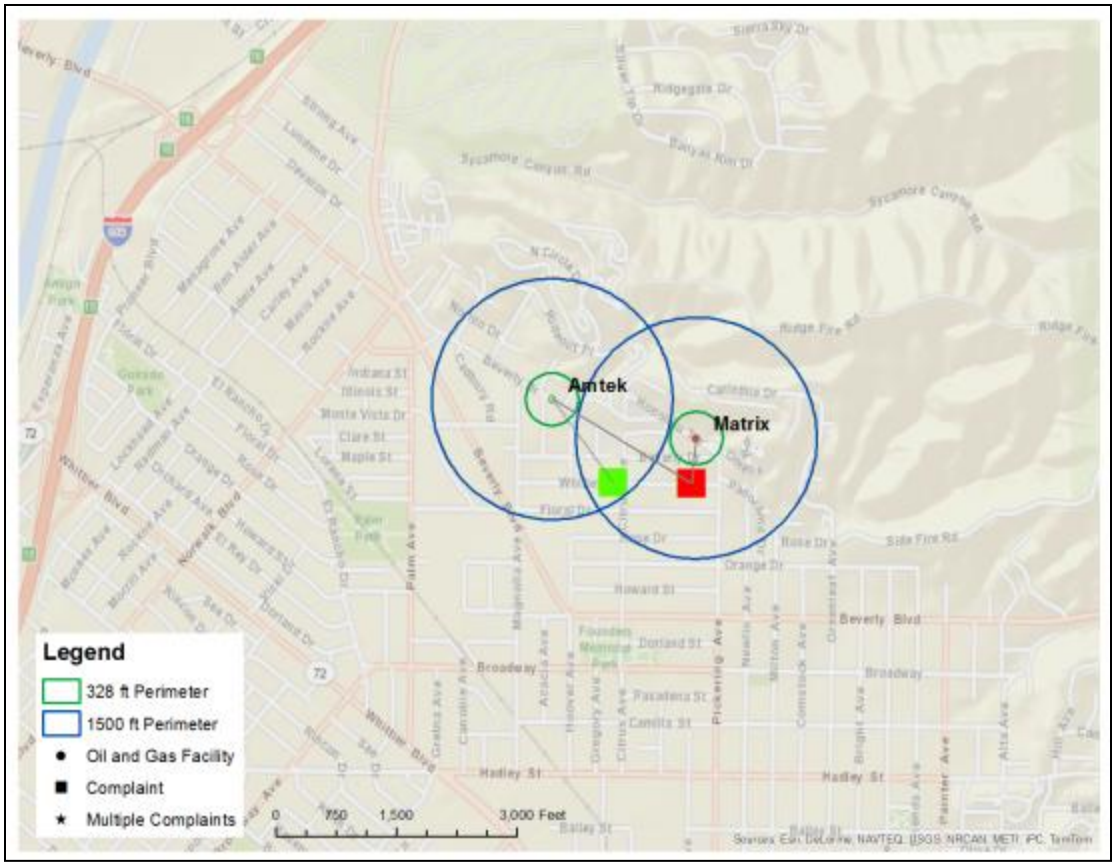
circle is the radius distance of 100m or 328 ft used for sensitive receptors based on the existing rule. The center of the 328ft radius circle is the location of the oil and gas production facility and the square dots within and outside the 1,500 foot radius and 328 foot radius represent logged odor complaints. The stars represent approximate locations of multiple complaints for several alleged events over the five-year period.



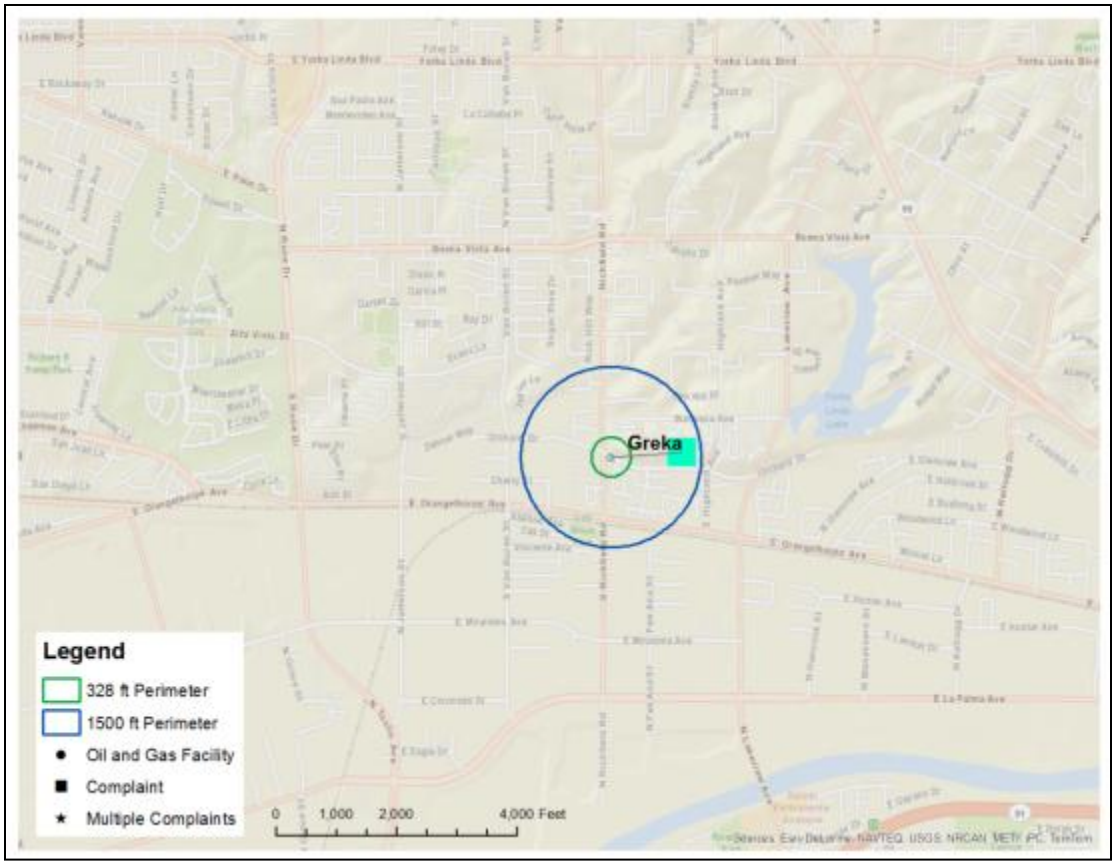
The above graph represents three oil and gas production facilities that are within two square miles, located near the Los Angeles Downtown Area. The grouping of complaint locations are mostly outside the 100 meter or 328 foot radius with the exception of Allenco, which has large grouping along its facility boundary. Also notable is the amount of complaints that are from outside the 1,500-foot radius. However, these complaints have been ~~verified~~ identified as confirmed at the address and ~~traced upwind to~~ the specific oil and gas production facility according to this sample search, although final verification status has not been specifically reviewed.



Angus Oil, located in the City of Huntington Beach, has complainants that live mostly across the street from the oil and gas production facility. There are several blocks of condominiums and townhomes that border the oil production facility on two sides. The consistent factor is that the oil and gas production facilities are located near residential neighborhoods. The proximity to a densely populated residential neighborhood increases the likelihood of complaints with moderate to low wind movement during particular activities.



The above map identifies two Whitter oil and gas production facilities that are approximately 1,500 feet from each other. These two facilities are also situated in residential neighborhoods, but the population density is not as high as downtown Los Angeles and Huntington Beach, as shown through satellite mapping, and have historically lower odor complaints, if any, during any given year.



Oil and Gas Production facility located in the City of Placentia. The facility is located in a mixed-use and open area, and has only one confirmed odor complaint for a five year period.

OBSERVATIONS

The following was noted in the review of the complain history and proximity review:

- At farther distances and lower population density, complaint activity decreases.
- Conversely at closer distances and greater population density, complaint activity increases.
- Many complaints are registered within 1,500 feet.
- Some facilities, while located in close proximity to sensitive receptors, do not have a significant nuisance complaint history.

APPENDIX C. PAR 1148.1 (d)(~~12~~13) – SAMPLE INFORMATION SIGNAGE

Instructional Information Requirement

PAR1148.1 (d)(~~12~~13) requires owner and operators, 30 days after the rule becomes effective, to post instructional signage for the reporting of odor complaints. The sign must be placed in a conspicuous location and under such conditions as to make it likely to be read or seen and understood by an ordinary individual during both normal operating and non-operating hours, for example near the facility entrance. The sign must contain information that informs the complainant of the facility's name, facility contact information, and instructions to contact the South Coast Air Quality Management District at the 1 800 CUT-SMOG number. The information must be posted in English and Spanish.

The following page is a sample of the type of signage that could be used to meet the requirements of paragraph (d)(~~12~~13) of the proposed amended rule.

To Report Odors: / Para reportar olores:

FACILITY NAME FACILITY PHONE NUMBER

Usted puede hacerlo directamente al nombre y número ubicado en la planta o instalación de donde provenga el olor.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD) 1-800-CUT-SMOG OR 1-800-288-7664

Llamando a la agencia "South Coast Air Quality Management District o SCAQMD" al número (800) Cut- Smog o (800) 288-7664.

12"-18"

CONTACT US ONLINE: / POR MEDIO DE LA PAGINA EN LÍNEA UBICADA EN: HTTP://WWW3.AQMD.GOV/WEBAPPL/COMPLAINTSYSTEMONLINE/NEWCOMPLAINT.ASPX

DOWNLOAD THE SCAQMD SMARTPHONE APP

POR MEDIO DE NUESTRAS APLICACIONES "APPS" DE TELÉFONOS INTELIGENTES LAS CUALES ESTÁN DISPONIBLES EN LOS SISTEMAS OPERATIVOS IOS Y ANDROID.

24"-36"

To Report Odors: / Para reportar olores:

FACILITY NAME FACILITY PHONE NUMBER

Usted puede hacerlo directamente al nombre y número ubicado en la planta o instalación de donde provenga el olor.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD) 1-800-CUT-SMOG OR 1-800-288-7664

Llamando a la agencia "South Coast Air Quality Management District o SCAQMD" al número (800) Cut- Smog o (800) 288-7664.

12"-18"

CONTACT US ONLINE: / POR MEDIO DE LA PAGINA EN LÍNEA UBICADA EN: HTTP://WWW3.AQMD.GOV/WEBAPPL/COMPLAINTSYSTEMONLINE/NEWCOMPLAINT.ASPX

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24"-36"

ATTACHMENT G

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final Environmental Assessment For
Proposed Amended Rule 1148.1 – Oil and Gas Production Wells

June 2015

SCAQMD No. 04282015BAR
State Clearinghouse No: 2015041090

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PREFACE

This document constitutes the Final Environmental Assessment (EA) for Proposed Amended Rule 1148.1 – Oil and Gas Production Wells. The Draft EA was released for a 30-day public review and comment period from April 29, 2015 to May 28, 2015 which identified the topics of air quality and greenhouse gases, and energy as environmental topic areas that may be adversely affected by the proposed project, but after completing the analysis, were shown to have less than significant impacts.

Two comment letters were received from the public regarding the analysis in the Draft EA. The comment letters and responses to individual comments are included in Appendix C of this document. No comment letters were received that identified other potentially significant adverse impacts from the proposed project.

Subsequent to release of the Draft EA, minor modifications were made to the proposed project and some of the revisions were made in response to verbal and written comments on the project's effects. To facilitate identification, modifications to the document are included as underlined text and text removed from the document is indicated by ~~strikethrough~~. 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, nor 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 minor revisions do not require recirculation of the document pursuant to CEQA Guidelines §15073.5 and §15088.5. Therefore, this document now constitutes the Final EA for the proposed project.

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CHAPTER 1

PROJECT DESCRIPTION

INTRODUCTION

The California Legislature created the South Coast Air Quality Management District (SCAQMD) in 1977[1] 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 and Mojave Desert Air Basin referred to herein as the district. 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 district[2]. Furthermore, the SCAQMD must adopt rules and regulations that carry out the AQMP[3]. The 2012 AQMP concluded that major reductions in emissions of particulate matter (PM), oxides of sulfur (SOx), volatile organic compound (VOC) and oxides of nitrogen (NOx) are necessary to attain the state and national ambient air quality standards for ozone and particulate matter with an aerodynamic diameter of 2.5 microns or less (PM2.5). VOC emission reductions, along with NOx emission reductions, are necessary because emission reductions of both of these ozone precursors are necessary to meet the ozone standards. VOC emission reductions also contribute to achieving the PM2.5 ambient air quality standards.

Although health-based standards have not been established specifically for VOCs, health effects can occur from exposures to high concentrations of VOCs because of interference with oxygen uptake. In general, ambient VOC concentrations in the atmosphere are suspected to cause coughing, sneezing, headaches, weakness, laryngitis, and bronchitis, even at low concentrations. Some hydrocarbon components classified as VOC emissions are thought or known to be toxic air contaminants (TACs). With stationary and mobile sources being the major producers of VOCs, which contribute to ozone formation, reducing the quantity of VOCs in the district has been an on-going effort by the SCAQMD.

Rule 1148.1 – Oil and Gas Production Wells, was adopted in 2004 to implement portions of the 2003 AQMP Control Measure FUG-05 – Emission Reductions from Fugitive Emission Sources, to reduce VOC emissions from well cellars as well as from sources of untreated produced gas located at oil and gas production facilities. Rule 1148.1 also requires a visual inspection and maintenance program for controlling untreated produced gas and contains additional regulatory considerations for sources located within 100 meters of sensitive receptors. However, due to an increased awareness of oil and gas production wells by the community, leading to multiple complaints and public comments requesting more proactive and preventative measures, SCAQMD staff has revisited the requirements in Rule 1148.1 to see what, if any, improvements can be made to the rule in order to minimize air quality and odor impacts to local residents and sensitive receptors that are often located nearby from ongoing operations that do not include drilling or well stimulation.

To prevent public odor nuisance and possible detriment to public health caused by exposure to VOC, TAC, and total organic compound (TOC) emissions from the operation and maintenance of oil and gas production facilities, SCAQMD staff is proposing amendments to Rule 1148.1 that would: 1) increase the minimum proximity distance to sensitive receptors (e.g., from 100 meters

[1] The Lewis-Presley Air Quality Management Act, 1976 Cal. Stats., ch 324 (codified at Health and Safety Code, §§40400-40540).
[2] Health and Safety Code, §40460 (a).
[3] Health and Safety Code, §40440 (a).

to 1,500 feet) that would trigger additional emission and odor preventative measures; 2) require the use of odor mitigation best practices for operation and maintenance of oil and gas production facilities; 3) require specific cause analysis and reporting for confirmed odor events and confirmed oil deposition events; 4) require Odor Mitigation Plans for facilities with continuing odor issues; and, 5) make administrative changes by removing obsolete rule language and making minor revisions to promote clarity, consistency, and enforceability throughout the rule.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

Because the proposed project is to be carried out by a public agency, it is a "project" as defined by the California Environmental Quality Act (CEQA). SCAQMD is the lead agency for the proposed project and has prepared this Final ~~draft~~ Environmental Assessment (EA) with no significant adverse impacts pursuant to its Certified Regulatory Program. California Public Resources Code §21080.5 allows public agencies with regulatory programs to prepare a plan or other written document in lieu of an environmental impact report once the Secretary of the Resources Agency has certified the regulatory program. The SCAQMD's regulatory program was certified by the Secretary of the Resources Agency on March 1, 1989, and is codified as SCAQMD Rule 110 - Rule Adoption Procedures to Assure Protection and Enhancement of the Environment.

CEQA and Rule 110 require that potential adverse environmental impacts of proposed projects be evaluated and that feasible methods to reduce or avoid significant adverse environmental impacts of these projects be identified. To fulfill the purpose and intent of CEQA and pursuant to Rule 110 (the rule which implements the SCAQMD's certified regulatory program), SCAQMD has prepared this Final ~~Draft~~ EA to evaluate potential adverse environmental impacts associated with implementing the proposed project. The Final ~~Draft~~ EA is a public disclosure document intended to: 1) provide the lead agency, responsible agencies, decision makers and the general public with information on the environmental effects of the proposed project; and, 2) be used as a tool by decision makers to facilitate decision making on the proposed project. This Final ~~Draft~~ EA includes an Environmental Checklist and project description. The Environmental Checklist provides a standard evaluation tool to identify a project's adverse environmental impacts.

SCAQMD's review of the proposed project shows that PAR 1148.1 would not have a significant adverse effect on the environment. Because PAR 1148.1 will have no statewide, regional or areawide significance, no CEQA scoping meeting was required to be held for the proposed project pursuant to Public Resources Code §21083.9 (a)(2). Further, pursuant to CEQA Guidelines §15252, since no significant adverse impacts were identified, no alternatives or mitigation measures are required to be included in this Final ~~Draft~~ EA. The analysis in Chapter 2 supports the conclusion of no significant adverse environmental impacts. The Draft EA was released for a 30-day public review and comment period from April 29, 2015 to May 28, 2015. ~~Written~~ Two comment letters on the environmental analysis in the Draft EA were received and ~~will be~~ were evaluated. ~~and~~ Rresponses to all of the comments received have ~~will~~ been prepared. The comment letters and the responses are included in Appendix C of this~~e~~ Final EA.

Subsequent to release of the Draft EA, minor modifications were made to the proposed project and some of the revisions were made in response to verbal and written comments on the project's

effects. 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, nor 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 minor revisions do not require recirculation of the document pursuant to CEQA Guidelines §15073.5 and §15088.5. Prior to making a decision on the proposed amendments to Rule 1148.1, the SCAQMD Governing Board must review and adopt the Final EA as providing adequate information on the potential adverse environmental impacts of the proposed amendments to Rule 1148.1.

PROJECT LOCATION

The proposed amendments to Rule 1148.1 would affect all on-shore oil producing wells, wellheads, well cellars, and untreated produced gas operations within the SCAQMD's jurisdiction, unless specifically exempt. The SCAQMD has jurisdiction over an area of approximately 10,743 square miles, consisting of the four-county South Coast Air Basin (Basin) (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 Basin, which is a subarea of the 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. The 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).

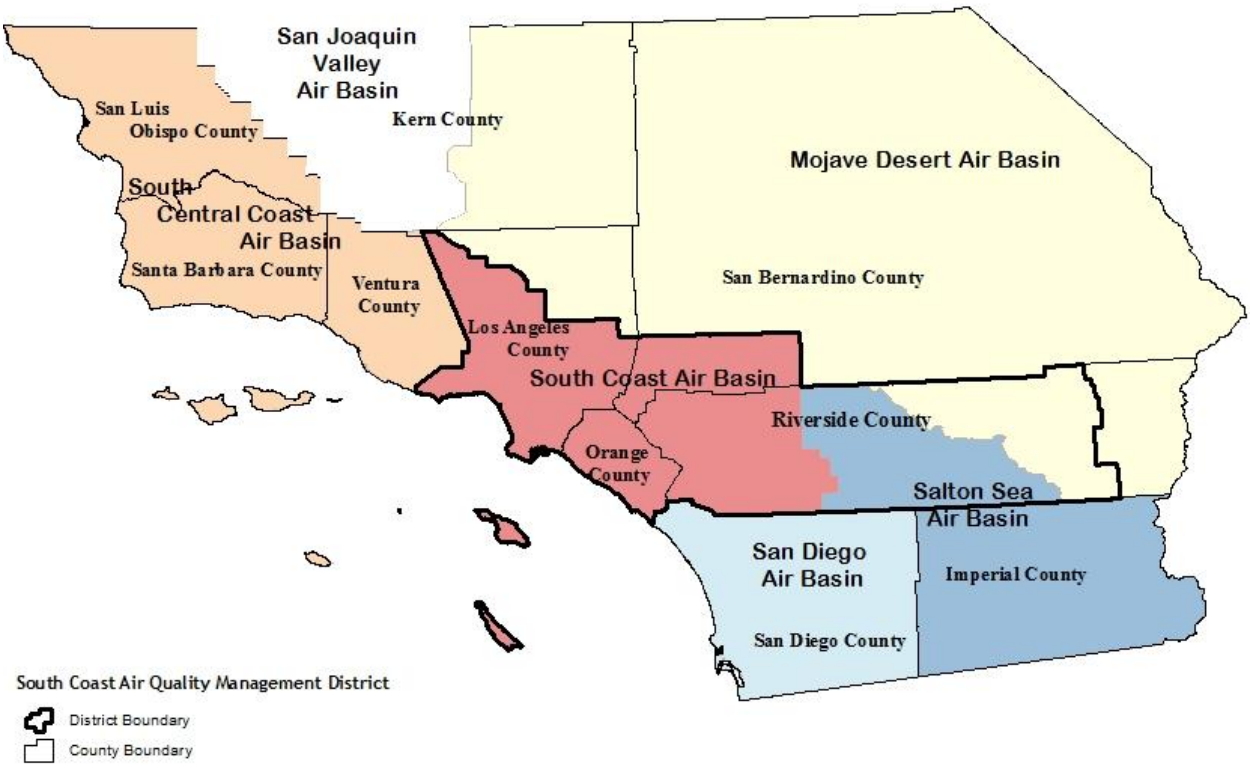


Figure 1-1: Southern California Air Basins

PROJECT BACKGROUND

The California Department of Conservation, Division of Oil, Gas and Geothermal Resources (DOGGR) oversees the maintenance of well cellars at oil and gas production operations throughout California. The Public Resources Code (PRC), Division 3, Chapters One through Four, govern the regulatory functions of DOGGR. DOGGR is responsible for supervising oil, gas and geothermal well drilling, operation, maintenance, plugging and abandonment operations to prevent the damage to life, health, property and natural resources by enforcing the requirements in Public Resources Code §§3300 - 3314 and §§3350 - 3353 which prohibit persons from willfully allowing natural gas from land containing oil or gas to escape into the atmosphere by:

- Preventing damage to underground oil, gas and geothermal deposits;
- Preventing damage to underground and surface waters suitable for irrigation or domestic use;
- Preventing other surface environmental damage, including subsidence;
- Preventing conditions that may be hazardous to life or health; and
- Encouraging the wise development of oil, gas and geothermal resources through good conservation and engineering practices.

DOGGR's responsibilities also entail permitting and testing wells; conducting safety inspections; overseeing production and injection projects; conducting inspections of environmental leases; testing idle-wells; inspecting oilfield tanks, pipelines, and sumps; plugging hazardous and orphan-wells and overseeing abandonment contracts; and monitoring subsidence.

Rule 1148.1 was adopted in 2004 to regulate VOC emissions from wellheads, well cellars and untreated produced gas at oil and gas production operations. Rule 1148.1 currently implements all feasible control measures in accordance with the 2003 AQMP Control Measure FUG-05 – Emission Reductions from Fugitive Emission Sources and California Health and Safety Code §40920.5. Rule 1148.1 works in concert with the state regulations.

Operators of oil wells and well cellars are not required to obtain SCAQMD permits and not all oil wells utilize well cellars. However, facilities with equipment such as American Petroleum Institute (API) oil-water separators, tanks, vessels, heaters, boilers, internal combustion engines and clean-out sumps (part of the dehydration or wastewater system permit unit), and "control" equipment such as heaters, flares, gas treatment equipment, internal combustion engines and boilers are required to have SCAQMD permits. In addition, SCAQMD Rule 222 - Filing Requirements For Specific Emission Sources Not Requiring A Written Permit Pursuant To Regulation II, includes oil production well groups, applies to no more than four well pumps located at a facility subject to Rule 1148.1 at which crude petroleum production and handling are conducted, as defined in the Standard Industrial Classification Manual as Industry No. 1311, Crude Petroleum and Natural Gas. To date, there are 473 oil and gas production facilities operating within SCAQMD's jurisdiction that are either currently subject to Rule 1148.1 or registered via Rule 222.

In addition to Rule 1148.1, there are other SCAQMD rules that may apply to oil and gas production facilities. However, there are only four SCAQMD rules that specifically regulate oil and gas production activities at these facilities, as follows:

Rule 1148 - Thermally Enhanced Oil Recovery Wells

Rule 1148 was adopted in 1982 and has not been amended since its adoption. Rule 1148 applies to thermally enhanced oil recovery wells, and limits VOC emissions to 4.5 pounds per day or less per well, regardless of whether each well is connected to a vapor control system.

Rule 1148.2 – Notification and Reporting Requirements for Oil and Gas Wells and Chemical Suppliers

Rule 1148.2 was adopted in 2013 to gather air-quality related information on oil and gas well pre-production activities, such as hydraulic fracturing and other well production stimulation operations. Rule 1148.2 contains reporting requirements for operators and chemical suppliers of onshore oil and gas wells undergoing rework or completion activities.

Rule 1173 - Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants

Rule 1173 was adopted in 1989 and last amended in 2009. The purpose of the rule is to reduce VOC leaks from components such as valves, fittings, pumps, compressors, pressure relief devices, diaphragms, hatches, sight glasses and meters 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.

Rule 1176 - Sumps and Wastewater Separators

Rule 1176 was adopted in November 1989 and last amended in September 1996. Rule 1176 applies to wastewater systems and associated control equipment located at petroleum refineries, onshore oil production fields, off-shore oil production platforms, chemical plants and industrial facilities. Sumps and wastewater separators are required to be covered with either a floating cover equipped with seals or a fixed cover, equipped with a closed vent system vented to an air pollution control system. Currently, Rule 1176 subparagraph (i)(5)(H) exempts well cellars used in emergencies at oil production fields provided that clean-up procedures are implemented within 24 hours after each emergency occurrence and completed within ten calendar days.

Since oil field production facilities are prevalent throughout the SCAQMD's jurisdiction and many are situated within close proximity to sensitive receptors, such as residential communities and schools with very little buffer zones between operations and receptors, SCAQMD staff has proceeded with rule amendment efforts to further protect the public from odors and nuisance from existing and future urban oil field production facilities beyond the existing regulatory setting. As part of the rule amendment efforts, SCAQMD staff assessed the current odor and complaint reporting system. The SCAQMD currently manages complaints via the 1-800-CUT-SMOG telephone hotline, via the on-line complaint system (http://www.aqmd.gov/contact/complaints), and through implementation of Rule 402 – Nuisance. Rule 402 prohibits any discharge of any material that may cause injury, detriment, nuisance, annoyance or discomfort to any considerable number of persons, with a large number of complaints typically associated with disagreeable odors. Currently, in order to pursue an enforcement action under Rule 402, an odor must be verified at the complainant location, that same odor traced upwind to the source, and the source identified as either the boundary of a facility or a device, equipment or unit. Once the odor is traced to either a facility or source, the complaint would become confirmed. Finally, multiple confirmed complaints called within the same timeframe would qualify for issuance of a Notice of Violation (NOV). For more frequent odor NOVs, conditions, through an Order of Abatement, may be issued to address ongoing odor issues resulting from a facility.

Figure 1-2 contains an overview of SCAQMD's complaint handling process where typically an NOV may be issued if there are six or more confirmed complaints. Where less than an NOV threshold is established or observed but odors can be traced to an activity or equipment, the inspector reviews all applicable rules and permit conditions to determine if the detected odors are attributable to potential non-compliance. In the event that a Rule 402 NOV is issued, the source would be subject to a more thorough and lengthy legal investigation and violation settlement.

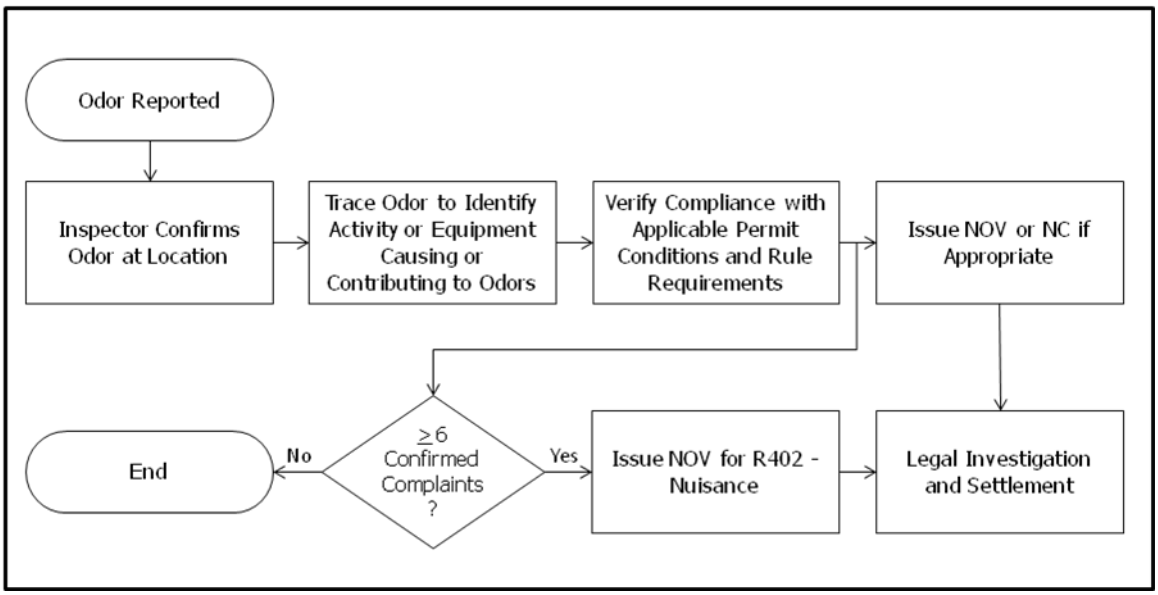


Figure 1-2: Typical SCAQMD Complaint Handling Process

It is not uncommon for complaints to be unconfirmed, or for an odor causing event to fall short of the multiple complaint threshold for issuance of a Rule 402 NOV. Odors may be caused by infrequent or brief activities and are fleeting. Although an inspector responding to a complaint typically communicates a summary of the initial field inspection, in some cases the complainant may have chosen to be anonymous, or the complaint call or email may have occurred after hours or late in the evening. In other cases, especially when the complaint or facility is not confirmed, the complainant may be left with the impression that no action has been or can be taken to address their complaint. Finally, even when an NOV is issued, the subsequent legal investigation process, as indicated in Figure 1-2, may not address the immediate informational needs of a complainant, who may continue to experience exposure to objectionable odors due to another facility that may also be causing a separate odor event. A facility that takes specific correction action to address the complaint driven odor causing activity or operation may similarly not be given credit for their actions should similar odors be detected from another facility or from a separate odor causing event.

TECHNOLOGY OVERVIEW

Oil and gas production involves bringing crude oil from the subsurface to the surface and preparing it for shipment to a refinery. The process of moving oil and gas from underground reservoirs to aboveground storage is described as a "pipeline process" since oil and gas in its natural state uses natural pressure or mechanical forces to move the oil and gas through miles of pipeline to the wellhead and is then transported by more pip~~e~~ing to storage. In the life of an oil well, there are four main phases which dictate the type of equipment to be used and the work practices and maintenance procedures that will be implemented: 1) exploration; 2) well development; 3) production; and, 4) well abandonment. In addition, there are ancillary procedures and equipment that are used across all phases of oil and gas production, including overall facility and equipment maintenance and spill containment and spill response.

During production, sources of fugitive emissions from oil and gas operations are well cellars and wellheads, and separation and treatment activities. For example, fugitive emissions may occur at valves, flanges and threaded connections on the wellhead. Also, well cellars and wellheads are particularly susceptible to liquid leaks especially where maintenance is poor or when large valves are opened and then closed, which often produces a noticeable amount of liquids including hydrocarbons. If the liquid is allowed to stand over an extended period, VOC emissions and related odors may be released to the atmosphere, and may promote odor nuisance complaints from the local community. To reduce fugitive emissions, sources are required to have a routine program of inspection and equipment repair in order to detect and eliminate conditions that may result in a breakdown. Lastly, workover rigs used in maintenance activities rely on internal combustion engines that generate combustion emissions.

Oil and gas operations have been historically regulated and permitted by the California Division of Oil, Gas and Geothermal Resources (DOGGR). Rule 1148.1 applies principally to the production phase, whereas Rule 1148.2 - Notification and Reporting Requirements for Oil and Gas Wells and Chemical Suppliers, applies to the exploration, well development and well rework phases. DOGGR continues to regulate site abandonment activities. The emission-related aspects of ancillary activities such as maintenance and spill containment and spill response are regulated by Rule 1148.1. Figure 1-3 outlines the overall oil and gas well lifecycle and the associated regulatory applicability with respect to activities covered under Rule 1148.1 and Rule 1148.2.

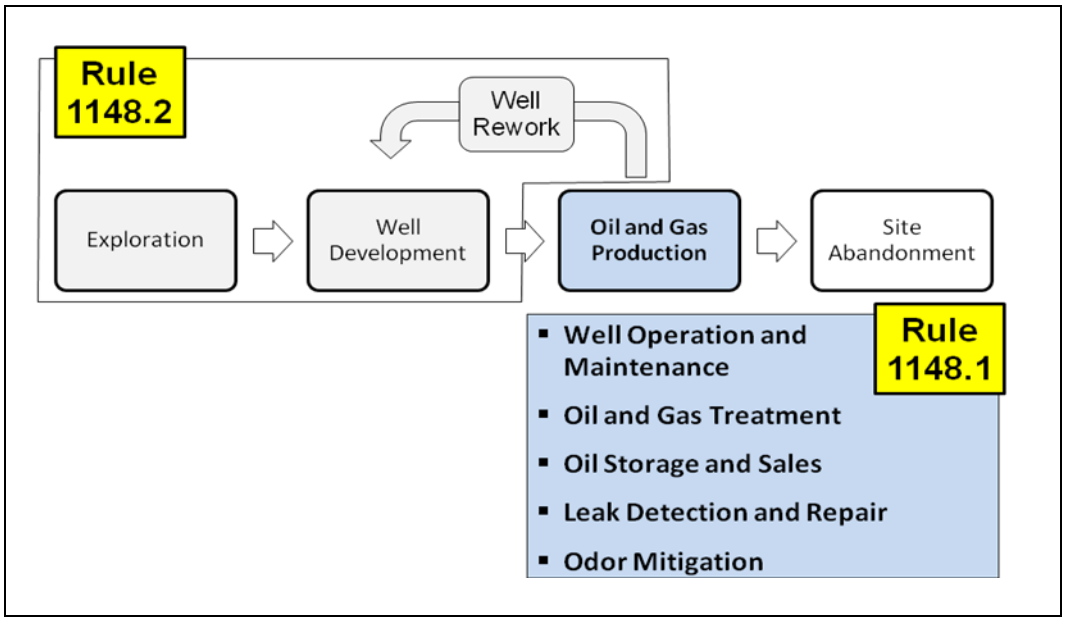


Figure 1-3: Typical Oil and Gas Production Facility
Processes and SCAQMD Rule Applicability

Exploration

The drilling of exploratory wells is subject to Rule 1148.2. When oil deposits are discovered as part of drilling an exploratory well, a crude oil reservoir can contain a mixture of water, as well as oil and gas in the small pore spaces in the reservoir rock. Initially, the reservoir holds these fluids under considerable pressure, caused by the hydrostatic pressure of the groundwater. At this pressure, a large part of the gas is dissolved in the oil. These two fluids, the initial water and

the gas in solution, combine to provide the driving force for moving the oil into the well where it is pushed by the underlying pressure.

Exploratory wells are drilled into unknown geological formations in search of locating a new source of oil or natural gas. This type of well represents a risk for the company conducting the drilling due to the high cost and the uncertainty as to how much oil or natural gas the formation might contain. An exploratory well may turn out to be a profitable new source of fossil fuel, or it may contain noncommercial quantities of fuel that are not worth extracting. In the latter case, the exploratory well may be plugged and abandoned.

Well Development

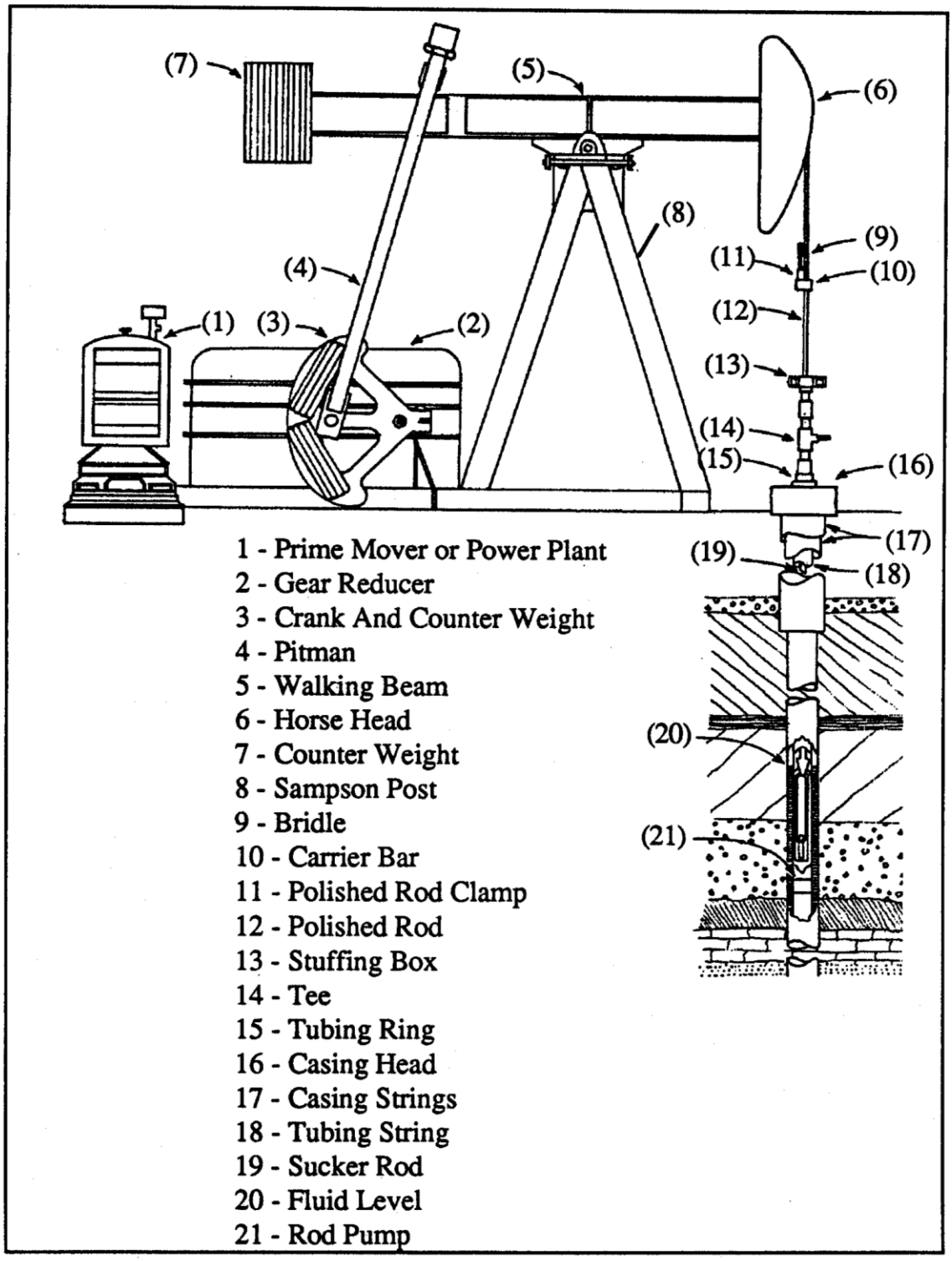
The drilling of development wells is also subject to Rule 1148.2. Development wells are typically drilled within an area that has already proven to be productive. Once oil or gas is discovered in a commercially viable quantity, development wells are drilled to continue to recover as much of the oil or gas as possible. There are also service wells which are drilled for injecting liquids or gases into an underground formation in order to increase the pressure and force the oil toward the producing wells. Service wells also include wells drilled for the underground disposal of salt water produced with the oil and gas. The drilling of service wells is considered to be part of the well development phase.

Production

After completion of the drilling phases, the process enters the production phase which is regulated by Rule 1148.1. The first step of the production phase is to construct an oil well which is essentially a pipeline that reaches from the top of the ground to the oil-producing formation underground. It is through this pipe that oil is brought to the surface. The pipeline is a series of joints of a special kind of pipe (casing) screwed together to form a continuous tube or string for the oil and gas to flow through (see Figure 1-4). Sometimes in drilling a well, more than one commercially productive formation is found. In such cases a separate tubing string is run inside the casing for each productive formation. Production from the separate formations is directed through the proper tubing strings and is isolated from the others by packing that seals the annular space between the tubing strings and casing. These are known as multiple completion wells.

The production stage is the most important stage of a well's life, when the oil and gas are produced. By this time, the rigs used to drill and complete the well have moved off of the wellbore, and the top is usually outfitted with a collection of valves called a “Christmas tree” or production tree. These valves regulate pressures, control flows, and allow access to the wellbore in case further completion work is needed. From the outlet valve of the production tree, the flow can be connected to a distribution network of pipelines and tanks to supply the product to refineries, natural gas compressor stations, or oil export terminals.

As long as the pressure in the reservoir remains high enough, the production tree is all that is required to produce the well. If the pressure depletes and it is considered economically viable, an artificial lift method can be employed to withdraw the remaining product from the reserve (see Figure 1-4). Currently there are four common methods of artificial lift used in the industry today: 1) beam pumping; 2) submersible pumping; 3) gas lift; and, 4) hydraulic pumping.



Source: Figure 301.4, Oil Field Production, Compliance Assistance Program, California Air Resources Board, Compliance Division, July 1992.

Figure 1-4: Artificial Lift Pumping Unit

The artificial lift method of beam pumping is when the pump is designed to be inserted inside the tubing of a well in order to gather fluids from beneath the surface and lift them to the surface. The most important components are the barrel, valves (traveling and fixed) and the piston. The pump is connected to the pumping unit at the surface by a string of sucker rods. Sucker rods are stroked up and down the tubing, activating the pump at the bottom. At the surface, a large mechanical device called the beam pumping unit is attached. Depending on the size of the pump, it generally produces from five to 40 liters of liquid per stroke. Often, the recovered liquid is an emulsion of crude oil and water. One of the advantages of beam pumping is high efficiency; however, it is limited to relatively low production volumes (e.g., less than 1,000 barrels per day (bpd)).

Submersible pumping is when an electrical motor is attached to a pump at the end of the tubing string. The electrical motor turns a centrifugal pump which forces oil from the bottom of the well, up through the inside of the tubing, and out at the surface. The electricity is supplied through an electric cable attached to the side of the tubing and connected to the electric motor. While submersible pumping has high volume and depth capacity and can produce over 1,000 bpd, it has poor ability to pump sand.

Another type of artificial lift is gas lift, which involve a series of devices called gas lift valves that are inserted into the sides of the tubing. The gas is injected into the well through the tubing casing annulus and enters the tubing through the gas lift mandrels and gas lift valves. The fluid in the tubing is made lighter by the gas, and as a result, the mixture is pushed to the surface by the reservoir pressure. The advantage of using gas lift equipment is that the process closely resembles the natural flow process and basically operates as an enhancement or extension of that process. The only major requirement for utilizing gas lift is the need for an available and economical supply of pressurized gas. The draw backs in using this system are high initial capital cost, high level of maintenance and complex operation.

The last artificial lift method, hydraulic pumping, is when high pressure oils are pumped into the well through the tubing string. At the bottom of the well, the pressurized oil enters a mechanical device, causing it to reciprocate. This mechanical device activates a pump which lifts the oil from the producing formation, together with expended powered oil to the surface. The system consists of a surface power fluid system, a prime mover, a surface pump, and a down hole jet or pump. Power fluid from the surface actuates the engine, which in turn drives the pump causing power fluid to return to the surface with the produced oil. The advantages of hydraulic pumping are that there are no moving parts and high volume capability. The downsides are the high initial capital cost and the difficulty of operation.

Site Abandonment

Site abandonment activities are regulated by DOGGR. Once an oil and gas reservoir at a production well is depleted, the well is abandoned and the site is cleaned up. As part of this process, the depleted reservoir hole is plugged with cement to protect all underground strata by preventing any flow or leakage at the surface and protecting the water zone, in accordance with California Code of Regulations (CCR), Subchapter 4 and section 1920.1. Any equipment that is salvageable is removed; pits used in the operation are filled in and the site is re-graded. Wherever practical, the ground is replanted with grass or other kinds of vegetation and sometimes home building sites are constructed.

Maintenance

Maintenance is necessary and required to ensure the smooth and safe operation of oil and gas operations and to minimize emissions during all phases of oil well operations. General maintenance includes the repair or replacement of pull rods or well casings using workover rigs, as well as the inspection and repair of pumps and other equipment used in production.

Spill Containment and Spill Response

Oil and gas production facilities utilize various forms of spill control and countermeasures to address the handling of hazardous materials. Primary containment consists of a permanent structure that holds the hazardous material (oil), such as tanks and piping. In many cases well cellars are used to provide secondary containment. On-shore oil and gas production facilities are also subject to federal requirements for spill control under 40 CFR part 112.

Well Cellars and Wellheads

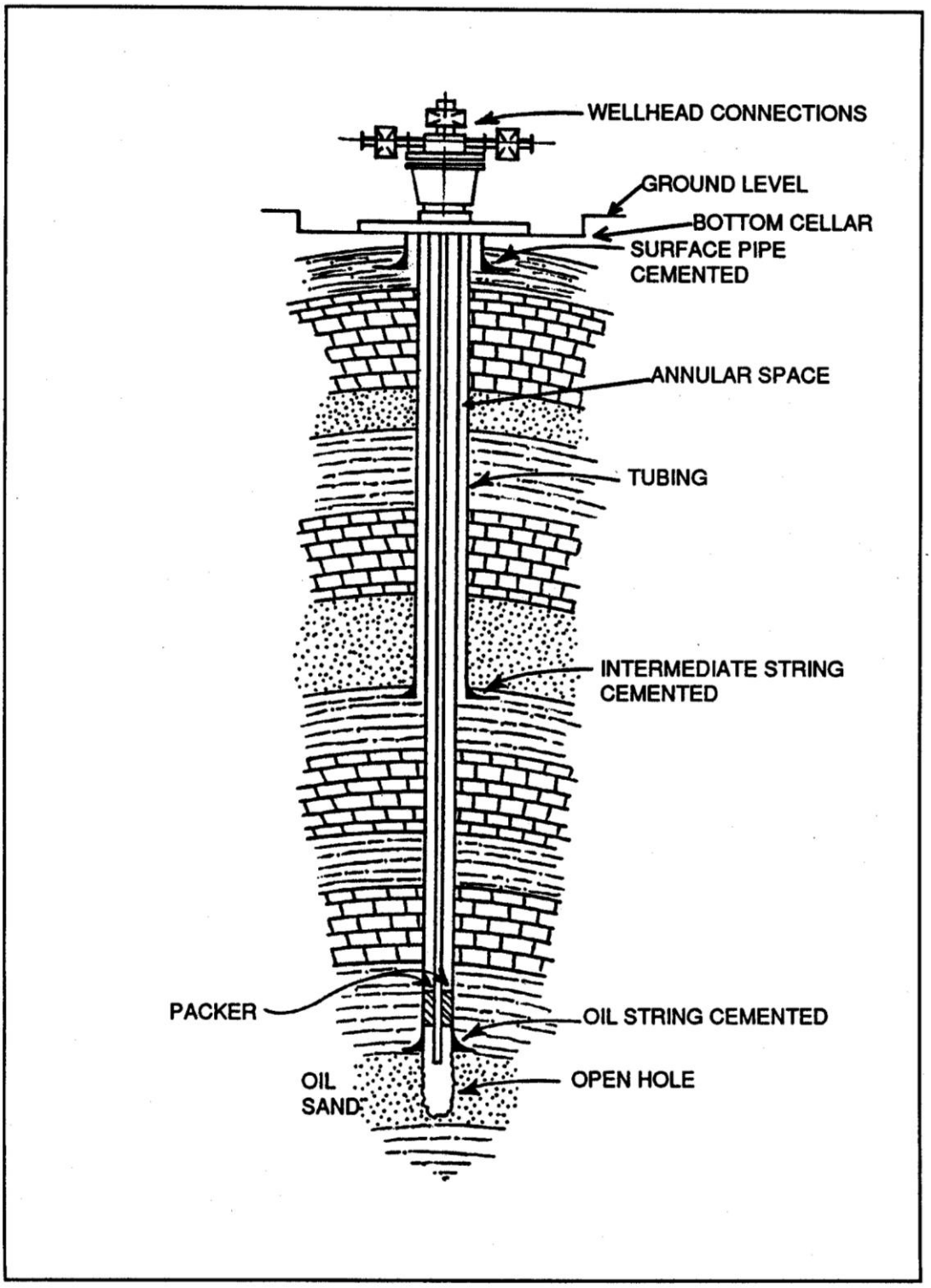
In most cases, the wellhead resides in or above the well cellar which is a small subsurface containment basin used to capture any leaking liquid from oil and gas extraction or maintenance and workover of the well or wellhead (see Figure 1-5).

Well cellars can be lined or unlined and there can be one or more wellheads allocated to a well cellar. On average, a well cellar has approximate dimensions of six feet by six feet with a depth of between five feet and eight feet. In the absence of containers used to catch discarded liquid (crude/water) produced during sampling and maintenance at the wellhead, there is an accumulation of crude oil that falls to the bottom of the well cellar. In order to provide access to wellheads for maintenance and sampling, well cellars are uncovered and become sources of VOC emissions and associated odors when crude oil is collected in this containment.

Separation and Treatment

After the well fluids and gas reach the wellhead they are transferred to a treatment plant. At the treatment plant the crude oil, natural gas, produced water and solid contaminants are separated and treated. A treatment plant may be simple or complex and can take many different forms depending on treatment needs. Typically, the treatment plant includes a well flow-line manifold in addition to separators, free water knockout vessels, heaters (if crude is heavy), heater-treaters, wash tanks, stock tanks, wastewater separators or oil/water separators, sumps, pits, ponds and a vapor recovery unit.

The well fluids (oil/water) and gas mixture flows to a well manifold that connects with each well in the field. From the manifold, the mixture is directed to either a test or a production separator, which separates and measures the three phases and is used to determine the production of each well. Under normal conditions, the mixture flows to a production separator or free water knockout where gas is separated from the mixture. From there, the oil/water stream flows to a free water knockout vessel, a heater treater, a wash tank and an oil/water separation vessel where water is removed from the oil. After it is determined that there is a sufficient reduction of water content, the oil flows to an oil storage or stock tank. Upon sale, the oil flows through Lease Automated Custody Transfer (LACT) units for metering.



Source: Figure 301.2, Oil Field Production, Compliance Assistance Program CARB Compliance Division, July 1992

Figure 1-5: A Typical Well

Gases removed from the oil during treatment may be treated and then either: 1) sold to a utility; 2) used as fuel by the operator; 3) re-injected into the reservoir for pressure maintenance; or, 4) vented to the atmosphere, a practice largely eliminated by the requirements of Rule 1148.1 which provides for the use of air pollution control devices in lieu of venting, except in the case of emergency upset conditions or certain smaller producing wells. Gas collected from separators and oil treaters, along with vapors from storage tanks, may be processed through a glycol dehydration unit to remove the water from the gas before it is put into a sales pipeline or used again in the dehydration process. A common practice to control production gas from small- and medium-sized operations is to use a gas-fired heater to burn the facility's gas and produce heat to reduce the viscosity of the crude oil product. Some facilities use the production gas to fuel micro-turbines for onsite power needs. Reducing the viscosity of crude oil facilitates the handling within the production operation or the transport via pipeline to the refineries.

The oily water collected from the separators and the oil treaters may flow directly to a sump or may flow to a water treatment facility prior to disposal. At the water treatment facility, the oil content of the water is reduced by skimming tanks, dissolved air flotation units, pits, filters or a combination of these. The water may be used on-site, discharged to the surface, or injected back into water injection wells or disposal wells. Vapor recovery is usually on all of the separation vessels and is piped back to the gas pipeline for dehydration.

Some of the separation and treatment equipment that require permits by the SCAQMD include American Petroleum Institute (API) separators, tanks, vessels, heaters, boilers, vapor recovery units, internal combustion engines and clean-out sumps, which are in most cases part of the wastewater system permit unit, oil dehydration unit or water injection facilities. Open ditches also require a permit, but there are no active permits currently in the South Coast Air Basin. Wastewater associated with the separation and treatment process is regulated by Rule 1176 – VOC Emissions from Wastewater Systems.

Workover Rig Operations

Workover rigs are mobile temporary derrick stands that allow the operator to access and replace worn out push rods and piping. These rods are between 32 feet and 46 feet long and are removed and stored vertically. The rods and the piping are pulled up through a casing which is filled with oil and other organic liquid. As a result of their removal, the rods and piping may be wet with hydrocarbon liquid and have the potential to cause odor nuisance complaints. While the amount of VOC emissions released to the atmosphere is minimal, the odor potential is great from these elevated piping, unless measures are taken to wipe excess material during removal.

Workover rigs are used primarily for maintenance on established production wells, and are typically powered by the internal combustion engine used for propulsion. Workover rigs are generally smaller units with lesser power demands than drilling rigs. However, there are occasions where extensive maintenance work would require a supplemental electrical generator to provide additional power. These generators and the portable or temporary internal combustion engines are a potential source of odors and combustion emissions.

PROJECT DESCRIPTION

To make the complaint process more effective for the complainant and to provide enhanced enforceable mechanisms to reduce odor nuisance potential while preventing public nuisance and possible detriment to public health caused by exposure to VOC, TAC, and TOC emissions from the operation and maintenance of oil and gas production facilities, PAR 1148.1 contains a proposal that would: 1) increase the minimum proximity distance to sensitive receptors (e.g., from 100 meters to 1,500 feet) that would trigger additional emission and odor preventative measures; 2) require the use of odor mitigation best practices for operation and maintenance of oil and gas production facilities; 3) require specific cause analysis and reporting for confirmed odor events and confirmed oil deposition events; 4) require Odor Mitigation Plans for facilities with continuing odor issues; and, 5) make administrative changes by removing obsolete rule language and making minor revisions to promote clarity, consistency, and enforceability throughout the rule. The following is a summary of the key components that comprise PAR 1148.1. A copy of the proposed amended rule can be found in Appendix A.

Proposed Amended Rule 1148.1 – Oil and Gas Production Wells

Purpose - subdivision (a)
This subdivision proposes clarifications that include the reduction of TAC and TOC emissions as contaminants, in addition to VOCs, that will contribute to the overall emission reduction goal. In addition, rule language has been inserted to clarify that both operation and maintenance activities of wellheads are part of the purpose. This subdivision also proposes to enhance the purpose of the rule to prevent public nuisance and possible detriment to public health caused by exposure to VOC, TAC, and TOC emissions.

Applicability - subdivision (b)
This subdivision proposes clarifications to include operation and maintenance activities as part of the types of actions that may be applicable to the requirements in the rule. This subdivision also proposes a clarification that identifies other SCAQMD rules that also apply to facilities subject to Rule 1148.1 such as Rule 463 – Organic Liquid Storage, Rule 1173 - Control of Volatile Organic Compound Leaks and Releases From Components at Petroleum Facilities, and, Rule 1176 – VOC Emissions From Wastewater Systems.

Definitions - subdivision (c)
The following definitions are proposed for inclusion in PAR 1148.1: "central processing area," "component," "confirmed odor event," "confirmed odor deposition event," "heavy liquid," "leak," "light liquid," "odor," "organic liquid," "responsible party," "specific cause analysis," "toxic air contaminant (TAC)," "wastewater," and "water injection well.," ~~and "workover rig."~~
In addition, the following existing definitions are proposed for modification in PAR 1148.1: "facility," "sensitive receptor," and "volatile organic compound."

Requirements - subdivision (d)
Paragraph (d)(1) proposes a clarification that would specify that the TOC well cellar concentration limit should be measured in accordance with the test method referenced in paragraph (h)(1) (e.g., USEPA Reference Method 21).

Paragraphs (d)(2), (d)(8~~7~~) and (d)(10~~9~~) propose to delete each obsolete effective date.

New paragraph (d)(3) proposes to require the pump out or removal of organic liquid accumulated in a well cellar within the same day if the well cellar has been verified as a source of odors.

Paragraph (d)(4~~3~~) proposes to clarify that drilling activities would also be subject to the pump out/organic liquid removal requirements for well cellars.

Paragraph (d)(5~~4~~) proposes to clarify the type of activities that would be exempt from having to comply with the TOC limit.

Paragraph (d)(7~~6~~) proposes to extend the proximity distance requirement for triggering additional emission and odor preventative measures for sensitive receptors from 100 meters to 1,500 feet.

New paragraph (d)(11~~10~~) proposes to require the installation of a rubber grommet as part of a maintenance or drill piping, production tubing or sucker rod replacement activity that involves the use of a workover rig.

New paragraph (d)(12~~11~~) proposes to require the operation and maintenance of a centrally located alarmed monitoring system.

New paragraph (d)(13~~12~~) proposes to require the oil and gas production facility to post instructions for the public related to odor complaints.

New paragraph (d)(14) proposes requirements to conduct and report a specific cause analysis for a confirmed oil deposition event.

Operator Inspection Requirements - subdivision (e)

Paragraphs (e)(1) and (e)(3) propose to delete each obsolete effective date.

Subparagraph (e)(1)(C) proposes to extend the proximity distance that would trigger the daily visual inspections requirement of stuffing boxes or produced gas handling and control equipment for sensitive receptors from 100 meters to 1,500 feet.

New paragraph (e)(5) proposes to require monthly TOC measurements on any component identified as a potential odor nuisance and if a qualifying leak is identified, to require the repair, replacement, or removal from service the leaking component.

Odor Mitigation Requirements - subdivision (f)

Paragraph (f)(1) proposes new requirements for conducting a Specific Cause Analysis and preparing a corresponding report for the occurrence of each confirmed odor event. Specifically, for facilities located within 1,500 feet of a sensitive receptor, upon determination by an SCAQMD inspector of a Confirmed Odor Event (confirmed odor from three or more independent complainants), a Specific Cause Analysis would be required and the affected facility would be required to complete and submit a Specific Cause Analysis report within 30 calendar days following receipt of written notification from the Executive Officer. The Specific Cause Analysis would include a review of the activities and equipment at the facility identified as

contributing or causing the odor in question, in order to determine the contributing factors and ultimately the corrective actions associated with the event. In addition, any applicable SCAQMD rule or permit condition would need to be identified and reviewed for compliance with the requirements. Furthermore, the specific cause analysis should assess proper implementation of internal procedures or preventative maintenance schedules to determine if the facility properly implemented them, if the procedures should be updated to address any performance gaps, or if the operators were adequately trained on the proper adherence to them.

Paragraph (f)(2) proposes new requirements for preparing and submitting a new or modified Odor Mitigation Plan. Specifically, for facilities located within 1,500 feet of a sensitive receptor, upon determination by an SCAQMD inspector of the occurrence of three or more Confirmed Odor Events within a six month period, or the issuance of a single odor related NOV under Rule 402 – Nuisance, an Odor Mitigation Plan would be required. The affected facility would be required to complete and submit an Odor Mitigation Plan (OMP) within 90 calendar days following receipt of written notification from the Executive Officer. In addition, for any facility with an existing approved OMP, an update to the plan would be required following the occurrence of an additional three or more Confirmed Odor Events over a subsequent six month period following the last plan approval, or following the issuance of an odor related NOV under Rule 402 – Nuisance following the last plan approval.

Subparagraph (f)(2)(B) proposes new requirements for Odor Mitigation Plan (OMP) Elements. Specifically, in the event when an OMP is required, an approved OMP would need to identify all the activities and equipment that may contribute or may have contributed to a confirmed odor event, and the OMP would need to identify the internal procedures and requirements used to manage the odors. For example, OMPs would need to identify oil and gas production and wastewater generation equipment and activities, including both normal and spill or release management control operations, with corresponding identification of potential or actual sources of emissions, odors, frequency of operator inspection and history of leaks. Also, the OMP would need to identify any activity involving drilling, well completion or rework, repair, or maintenance of a well, as well as note the sources of emissions, odors, odor mitigation measures for responding to odors and odor complaints. In addition, the OMP would need to specify the procedures used for odor monitoring at the site and fence line and to identify emission points and emission or leak monitoring method used for all wastewater tanks, holding, knockout, and oil/water separation vessels, including any pressure relief devices or vacuum devices attached to the vessels, and record the releases from such devices. Finally, any equipment or activity identified as part of any previously submitted Specific Cause Analysis report would also need to be included in the OMP.

Subparagraph (f)(2)(C) proposes new requirements for odor monitoring and mitigation that would need to be included in an OMP. These requirements are summarized in Table 1-1. In accordance with this subparagraph, the owner and operator of an oil and gas production facility would be required to comply with all provisions of an approved OMP and a violation of any of the terms of the plan would be considered a violation of Rule 1148.1.

Table 1-1
Proposed Odor Monitoring and Mitigation Requirements

PAR 1148.1 Odor Monitoring and Mitigation Requirement	Description
Odor Surveillance	Continual odor surveillance downwind at the perimeter of the property at all times during drilling, well completion, or rework, repair, or maintenance of any well, including water injection wells, recorded hourly. Equivalent odor monitoring equipment may be used in lieu of odor surveillance, subject to approval.
	If odors are detected from odor surveillance or odor monitoring at the perimeter of the facility, all drilling, well completion, or rework, repair, or maintenance of any well will discontinue until the source or cause of odors are determined and mitigated in accordance with measures previously approved.
~~Alternative Fuel or Electric Powered Workover Rig~~[4]	~~Any workover rig used to conduct any drilling, well completion, rework, repair or maintenance of any well, including any production or water injection well, shall be electric powered or natural gas (LNG or CNG) , propane (LPG) fired only.~~
Well Piping and Rod Management	Any removed drill piping, production tubing, and ~~drill~~ sucker rods shall be managed through written procedures that ensures that potential odor producing emissions are minimized through means such as ~~use of a tarp or similar covering or~~ by storing within an enclosed area or other equivalent method.
Tighter Leak Detection and Repair (LDAR)	Reduce the required repair times for components subject to Rule 1173 LDAR to the lowest schedule of one calendar day with an extended repair period of three calendar days (rather than the seven day repair time allowance and seven day extended repair period).
Facility Specific Best Practice	Any corrective action identified in a Specific Cause Analysis report previously submitted by the facility.
Feasibility Assessment	For any odor mitigation or monitoring requirement identified above is determined by the facility to not represent an appropriate best practice for inclusion in the OMP, an evaluation and documentation that states the reason why such provision is not feasible to include, subject to approval by the Executive Officer, must be included in the OMP.

Recordkeeping - subdivision (g)

Paragraph (g)(2) proposes to require records of measurements, cleaning and any activities performed in accordance with the exemption criteria in paragraph (i)(2).

[4] Subsequent to the release of the Draft EA for public review and comment, additional revisions were made to PAR 1148.1 that resulted in the removal of the requirement for the use of an alternative fuel or electric powered workover rig as part of an OMP.

Paragraph (g)(3) proposes to clarify the records maintenance requirements to include any referenced established written company safety manual or policy.

New paragraph (g)(4) proposes to require the operator to maintain, for either three years or five years for a Title V facility, all records and other applicable documents as part of an approved OMP.

Test Methods - subdivision (h)

Subdivision (h) proposes to include an introduction that will replace old paragraph (h)(4) to explain that the allowed test methods will be used to determine compliance and that other equivalent test methods, after review and approval, may also be used.

New paragraph (h)(3) proposes to specify test methods for determining VOC content.

New paragraph (h)(4) proposes to specify the test method for determining the flash point of heavy liquids.

Exemptions - subdivision (i)

Paragraph (i)(2) proposes to exempt portable enclosed storage vessel and associated air pollution control equipment undergoing maintenance and repair from the requirements in paragraphs (d)(4), (d)(6), (d)(7), and (d)(8) if the owner or operator can demonstrate that performing maintenance and repair, drilling or abandonment operation would cause the facility to operate in violation of state or federal regulations, applicable industry safety standards, or a written company safety manual or policy developed to comply with applicable industry safety standards provided that the activities minimize emissions to the atmosphere as much as possible.

Paragraph (i)(4) proposes to not allow the small production exemption for production wells that are located within 1,500 feet of a sensitive receptor.

CHAPTER 2

ENVIRONMENTAL CHECKLIST

INTRODUCTION

The environmental checklist provides a standard evaluation tool to identify a project's adverse environmental impacts. This checklist identifies and evaluates potential adverse environmental impacts that may be created by implementing PAR 1148.1.

GENERAL INFORMATION

Project Title:	Final Environmental Assessment for Proposed Amended Rule 1148.1 – Oil and Gas Production Wells
Lead Agency Name:	South Coast Air Quality Management District
Lead Agency Address:	21865 Copley Drive, Diamond Bar, CA 91765
CEQA Contact Person:	Barbara Radlein, (909) 396-2716, bradlein@aqmd.gov
PAR 1148.1 Contact Person:	Dairo Moody, (909) 396-2333, dmoody@aqmd.gov
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 1148.1 would: 1) increase the minimum proximity distance to sensitive receptors (e.g., from 100 meters to 1,500 feet) that would trigger additional emission and odor preventative measures; 2) require the use of odor mitigation best practices for operation and maintenance of oil and gas production facilities; 3) require specific cause analysis and reporting for confirmed odor events; 4) require Odor Mitigation Plans for facilities with continuing odor issues; and, 5) make administrative changes by removing obsolete rule language and making minor revisions to promote clarity, consistency, and enforceability throughout the rule. Analysis of the proposed project in the Final ~~Draft~~ EA did not result in the identification of any environmental topic areas that would be significantly adversely affected by the proposed project.
Surrounding Land Uses and Setting:	Residential, commercial, industrial and/or institutional
Other Public Agencies Whose Approval is Required:	Not applicable

ENVIRONMENTAL IMPACT AREAS POTENTIALLY AFFECTED

The following environmental impact areas have been assessed to determine their potential to be affected by the proposed project. Any checked items represent areas that may be adversely affected by the proposed project, but after completing the analysis, were shown to have less than significant impacts. An explanation relative to the determination of impacts can be found following the checklist for each area.

☑ Aesthetics	☐ Geology and Soils	☐ Population and Housing
☐ Agriculture and Forestry Resources	☐ Hazards and Hazardous Materials	☐ Public Services
☑ Air Quality and Greenhouse Gas Emissions	☐ Hydrology and Water Quality	☐ Recreation
☐ Biological Resources	☐ Land Use and Planning	☐ Solid and Hazardous Waste
☐ Cultural Resources	☐ Mineral Resources	☑ Transportation and Traffic
☑ Energy	☐ Noise	☑ 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 Guideline §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: April 28, 2015 **Signature:** 

Michael Krause
Program Supervisor, CEQA Section
Planning, Rules, and Area Sources

ENVIRONMENTAL CHECKLIST AND DISCUSSION

PAR 1148.1 is undergoing amendments in order to further prevent public nuisance and possible detriment to public health caused by exposure to VOC, TAC and TOC emissions from the operation and maintenance of oil and gas production facilities. PAR 1148.1 would: 1) increase the minimum proximity distance to sensitive receptors (e.g., from 100 meters to 1,500 feet) that would trigger additional emission and odor preventative measures; 2) require the use of odor mitigation best practices for operation and maintenance of oil and gas production facilities; 3) require specific cause analysis and reporting for confirmed odor events and confirmed oil deposition events; 4) require Odor Mitigation Plans for facilities with continuing odor issues; and, 5) make administrative changes by removing obsolete rule language and making minor revisions to promote clarity, consistency, and enforceability throughout the rule.

PAR 1148.1 has been evaluated relative to the environmental topics identified in the following environmental checklist (e.g., aesthetics, agricultural and forestry resources, biological resources, etc.). The primary effect of implementing PAR 1148.1 is to enhance compliance of operations at existing oil and gas facilities. Most of the requirements in PAR 1148.1 are procedural in nature and as such, would not be expected to cause any physical changes that that could have secondary adverse environmental effects. For example, while PAR 1148.1 contains new odor monitoring and mitigation requirements that would require any removed drill piping, production tubing and ~~drill~~ sucker rods to be stored in a manner that would minimize emissions, facility operators would have the option of storing ~~covering~~ the drill piping, production tubing and ~~drill~~ sucker rods ~~with a tarp, for example, or by storing~~ within an enclosed area, or by some other equivalent method (see clause (f)(2)(C)(iv)) to serve as a wind barrier, such as a covering or freestanding wind screen, for example. Because of the available compliance options for storing removed drill piping, production tubing, and ~~drill~~ sucker rods, the analysis in this Final ~~Draft~~ EA assumes that facility operators would not choose to construct new storage areas or modify existing storage areas when an equivalent method and lower cost option that can serve as an effective wind barrier, such as a covering or freestanding wind screen, ~~tarp~~ can be used instead. Thus, the proposed project would not promote the construction of new facilities or structures nor would it cause construction activities to occur at existing facilities. Therefore, potential adverse impacts that result from construction of new structures or modification of existing structures as well as changes in existing land uses are not anticipated to occur as a result of implementing PAR 1148.1.

Of the other enhanced compliance mechanisms that could be triggered by PAR 1148.1, only the requirement in an Odor Mitigation Plan for a workover rig to be powered with electricity, or fueled by natural gas, or propane/liquefied petroleum gas, instead of diesel fuel, could potentially cause a direct physical change to existing oil and gas operations that could have secondary environmental effects. However, at the time of publication of the~~is~~ Draft EA, there were ~~are~~ no known electric or alternative fuel (non-diesel) workover rigs available. In the future, it is possible that electric or alternative fuel workover rigs may become available. Thus, answers to the following checklist items are based on the worst-case assumption that any affected oil and gas facility that becomes subject to the requirements of an Odor Mitigation Plan will be required to utilize an alternative fueled workover rig in lieu of a diesel-fueled workover rig, if available and feasible.

Subsequent to the release of the Draft EA for public review and comment, additional revisions were made to PAR 1148.1 that resulted in the removal of the requirement for the use of an alternative fuel or electric powered workover rig as part of an OMP. While the use of an alternative fuel or electric powered workover rig is no longer a requirement, the analysis relative to the use of an alternative fuel or electric powered workover rig will remain as part of the responses to the environmental checklist to represent a worst-case analysis.

In addition, subsequent to release of the Draft EA, the following modifications were made to the proposed project: 1) new paragraph (d)(3) has been added to require the pump out or removal of organic liquid accumulated in a well cellar the same day in the event the well cellar has been verified as a source of odors; 2) new paragraph (d)(14) has been added to require a facility operator to conduct and report a specific cause analysis for a confirmed oil deposition event; 3) new paragraph (e)(5) has been added to require monthly TOC measurements on any component identified as a potential odor nuisance and if a qualifying leak is identified, to require the repair, replacement, or removal from service the leaking component; and, 4) clause (f)(2)(C)(iv) has been revised to no longer specify covering as part of the new odor monitoring and mitigation requirements that would require any removed drill piping, production tubing and sucker rods to be stored in a manner that would minimize emissions, either within an enclosed area, or by some other equivalent method.

Of these four changes to PAR 1148.1, industry has provided comments relative to item 1) such that requiring the pump out or removal or organic liquid accumulated in a well cellar to occur the same day when the well cellar has been verified as a source of odors may cause an additional vacuum truck trip to the affected facility. Thus, the Draft EA has been revised to include an analysis of what the potential adverse affects of additional vacuum truck trips may cause. These additional assumptions and calculations can be found in Appendix B. The three remaining changes to PAR 1148.1 subsequent to the release of the Draft EA for public review and comment (see items 2 through 4) were determined to be procedural in nature and as such, would not be expected to cause any physical changes that that could cause secondary adverse environmental effects.

Finally, the requirement in paragraph (d)(12) for an operator of an oil and gas production facility to operate and maintain an alarmed monitoring system has been clarified to be applicable to any central processing area that is located within 1,500 feet of a sensitive receptor. This requirement will go into effect within 180 days of July 10, 2015 if the SCAQMD's Governing Board approves the project. Some oil and gas production facilities currently utilize control centers that also allow for monitoring and controlling operating parameters to support efficiency or serve as an indicator for leak related emissions. Industry submitted comments explaining that while oil and gas production facilities currently operate existing monitoring systems to safeguard for fire prevention and emergency response in central processing areas, and that these systems are considered to be centrally located monitoring systems, there are some facilities that may not have monitoring systems for their central processing areas. The SCAQMD staff estimates, based on conversations with industry representatives, that approximately five percent of the 473 facilities (e.g., 24 facilities), currently may not have monitoring systems for their central process areas and would be required to install monitoring systems to comply with this requirement in PAR 1148.1. In order for 24 facilities to install monitoring systems over a 180 day window, this EA assumes that approximately five facilities will have overlapping construction activities on a peak day. Thus, the Draft EA has been revised to include an analysis of what the potential adverse affects

of installing additional monitoring systems may cause and these additional assumptions and calculations can also be found in Appendix B.

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, nor 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 §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?	☐	☐	☐	☑
b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☑
c)	Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☑
d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☑~~☐~~	~~☑~~

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

I. a), b) & c) No Impact. PAR 1148.1 neither requires construction of new facilities nor requires physical modifications at existing facilities that would entail construction activities. Instead, PAR 1148.1 would enhance monitoring and recordkeeping requirements for facilities subject to the rule. In the event that a facility is required to prepare and obtain approval of an Odor Mitigation Plan, the facility operator would be required to utilize a workover rig that is

either electrically powered or fueled by natural gas or propane, in lieu of diesel fuel, if available and feasible.

The oil and gas industry utilizes workover rigs to conduct drilling, well completion, rework, and repair and maintenance of wells. A workover rig is a mobile, self-propelled unit that is driven directly to the well site and is frequently moved from well to well throughout an oil and gas facility. The power from the rig's engine or engines propels the rig on the road. Currently, only diesel-fueled workover rigs are available.

The length of a workover rig with mast extension can reach up to 65 feet. In addition, the height of a workover rig when the mast is extended into a vertical position can range from 50 feet to 86 feet for single-mast workover rigs and from 96 feet to 124 feet for double-mast workover rigs. The required drilling depth is what determines the type and horsepower rating of a workover rig needed for a particular well. Nonetheless, the requirement to utilize an electric or alternative fuel workover rig to comply with an Odor Mitigation Plan would not affect the choice of whether a single- or double-mast rig would be utilized and as such, the height of any replacement workover rig is not expected to change from the existing setting as a result of implementing PAR 1148.1. Thus, the visual appearance between a diesel-fueled workover rig and an electric or alternative fuel workover rig would not be expected to have physical differences that would be discernable from outside of an oil and gas facility's property, regardless of where the workover rig is located within the property at the time of observation.

Typically, oil and gas production wells facilities are located throughout the District within predominantly industrial or commercial areas while some are located adjacent to residential neighborhoods. The visual character of the areas in which the various oil and gas productions wells facilities are located can be quite varied, but would be expected to remain the same because PAR 1148.1 would not require modifications to existing structures or new construction of structures at the affected facilities. Further, in the event that an Odor Mitigation Plan is required and an electric or alternative fuel workover rig is employed at a given facility, scenic vistas, if any are located near an affected facility, would not be expected to change or be adversely affected since the height profile and overall footprint of any replacement workover rig is not expected to be discernably different from a diesel-fueled workover rig.

In addition, in response to industry's comment that an additional vacuum truck may be needed to pump out a well cellar on the same day that it has been verified as a source of odors, the analysis assumes that a peak day of three additional vacuum trucks may be needed. This assumption is based on past complaint data for Rule 1148.1 facilities which has shown that only three facilities experienced the potential equivalent of three or more confirmed odor events or received a Rule 402 NOV. Thus, in the event that three separate facilities would need to have one additional vacuum truck visit the premises to pump out a well cellar, the presence of these vacuum trucks will not be visibly different from the vacuum trucks that currently service well cellars and other equipment at the affected oil and gas facilities.

Finally, in response to industry's comment that some facilities may need to install monitoring equipment, the analysis assumes a total of 24 facilities may be affected and that five facilities on a peak day may undergo light construction activities for one day. The construction activities would involve a work crew of three to install the monitoring equipment and make the electrical connections and one delivery truck to deliver supplies for the workers. The presence of these

work crews will not be visibly different from the work crews currently employed on a day-today basis at the affected oil and gas facilities.

Thus, implementation of PAR 1148.1 would not result in any new construction of buildings or other structures or the modification to existing structures that would obstruct scenic vistas or scenic resources, or degrade the existing visual character of a site, including but not limited to, trees, rock outcroppings, or historic buildings.

I.d) ~~No~~ Less Than Significant Impact. While facilities with oil and gas production wells typically operate 24 hours per day, there are no components in the proposed project that would specifically require new nighttime activities to occur beyond baseline conditions which already have existing permanent night lighting in place for safety and security reasons. Further, workover operations typically occur during daytime and PAR 1148.1 does not contain any provisions that would require facilities to conduct workover operations at night. Nonetheless, in the event that an Odor Mitigation Plan is required and an electric or alternative fuel workover rig is required and that facility operator chooses to operate the equipment at night, the nighttime lighting that would be needed to safely operate an electric or alternative fuel workover rig would not be expected to be any different from the nighttime lighting needs for operating a diesel-fueled workover rig.

However, in response to industry's comment that an additional vacuum truck may be needed to pump out a well cellar on the same day if it has been verified as a source of odors, it is possible that the operation of a vacuum truck may occur at night, depending on what time of day the odor source is verified and the lag time that may occur to get a vacuum truck to the site. In the event that a vacuum truck is needed to operate at night, the analysis assumes that temporary portable lighting equipment may be needed, if lighting does not already exist at or near the affected well cellar, to provide sufficient lighting to safely direct the vacuum hose to the affected location. If temporary portable lighting is required, then a diesel generator set may be needed to supply the power to the lighting equipment.

As discussed earlier in Sections a), b) and c) of this topic area, past complaint data for Rule 1148.1 facilities has shown that only three facilities experienced the potential equivalent of three or more confirmed odor events or received a Rule 402 NOV. Thus, in the event that three separate facilities would each need to have one additional vacuum truck visit the premises to pump out a well cellar, and if circumstances exist that these activities would occur at night, then three additional diesel generator sets to power three portable lighting units could be needed on a peak day. While these circumstances could create a potential for additional nighttime lighting, the lighting would only be needed for as long as each vacuum truck is operating. Vacuum trucks have pumps that can suction up to 4,000 cubic feet per minute of material, so depending on the volume of material needed to be pumped out, the vacuum truck and any needed lighting would likely be needed from five minutes to one hour. However, to be conservative, the analysis assumes that three vacuum trucks and three generator sets to support lighting equipment would each operate for two hours on a peak day.

In the event that nighttime operations of vacuum truck are needed, the nighttime lighting that would be needed to safely operate the vacuum truck would need to be directed downward towards the well cellar. Once the vacuum truck has completed its task, the lighting and associated generator would be shut off.

Finally, in response to industry's comment that some facilities may need to install monitoring equipment, the analysis assumes a total of 24 facilities may be affected and that five facilities on a peak day may undergo light construction activities for one day per facility. The construction activities would involve a work crew of three to install the monitoring equipment and make the electrical connections and one delivery truck to deliver supplies for the workers and these activities are expected to occur during daylight hours. As such, no new nighttime lighting, either temporary or permanent would be needed to install or operate the monitoring equipment.

Thus, even if temporary lighting may be needed under limited circumstances, additional light or glare would not be created which would significantly adversely affect day or nighttime views in the area ~~since no new light generating equipment would be required to comply with the requirements in PAR 1148.1~~.

Based upon these considerations, significant adverse aesthetics impacts are not expected from implementing PAR 1148.1, and thus, this topic will not be further analyzed. 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 FOREST 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?	☐	☐	☐	☑
b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☑
c)	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code §12220(g)), timberland (as defined by Public Resources Code §4526), or timberland zoned Timberland Production (as defined by Government Code §51104 (g))?	☐	☐	☐	☑
d)	Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☑

Significance Criteria

Project-related impacts on agriculture and forest 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 §12220 (g)), timberland (as defined in Public Resources Code §4526), or timberland zoned Timberland Production (as defined by Government Code § 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

II. a), b), c), & d) No Impact. Implementation of PAR 1148.1 would not result in any new construction or modification of buildings or other structures. Similarly, the proposed project would not require affected facility operators to acquire additional land. All compliance activities that would occur as a result of implementing the proposed project are expected to occur within the confines of each existing affected facility. The proposed project would be consistent with the zoning requirements for the existing facilities and there are no agriculture or forest resources or operations on or near the affected facilities. No agricultural resources including Williamson Act contracts are located within or would be impacted by operation activities at the affected facilities. Therefore, the proposed project would not result in any new construction of buildings or other structures that would convert farmland to non-agricultural use or conflict with zoning for agricultural use or a Williamson Act contract. Since the proposed project would not alter any facility or process, there are no provisions in the proposed project 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 will be altered by the proposed project. For these same reasons, PAR 1148.1 would not result in the loss of forest land or conversion of forest land to non-forest use.

Based upon these considerations, significant agricultural and forest resources impacts are not expected from implementing PAR 1148.1, and thus, this topic will not be further analyzed. Since no significant agriculture and forest 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?	☐	☐	☐	☑
b) Violate any air quality standard or contribute to an existing or projected air quality violation?	☐	☐	☑	☐
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)?	☐	☐	☑	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☑	~~☑~~
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☑
f) Diminish an existing air quality rule or future compliance requirement resulting in a significant increase in air pollutant(s)?	☐	☐	☐	☑
g) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☑	☐
h) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☑	☐

Air Quality Significance Criteria

To determine whether or not air quality impacts from implementing PAR 1148.1 are significant, impacts will be evaluated and compared to the criteria in Table 2-1. The project will be considered to have significant adverse air quality 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]**
NOx	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM10	150 lbs/day	150 lbs/day
PM2.5	55 lbs/day	55 lbs/day
SOx	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 ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
GHG	10,000 MT/yr CO2eq 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 μg/m^3 (construction)[e] & 2.5 μg/m^3 (operation) 1.0 μg/m^3	
PM2.5 24-hour average	10.4 μg/m^3 (construction)[e] & 2.5 μg/m^3 (operation)	
SO2 1-hour average 24-hour average	0.25 ppm (state) & 0.075 ppm (federal – 99th percentile) 0.04 ppm (state)	
Sulfate 24-hour average	25 μg/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 μg/m^3 (state) 0.15 μg/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 μg/m^3 = microgram per cubic meter ≥ = greater than or equal to
MT/yr CO2eq = metric tons per year of CO2 equivalents > = greater than

Discussion

III. a) No Impact. Rule 1148.1 was adopted in 2004 to implement portions of the 2003 AQMP Control Measure FUG-05 – Emission Reductions from Fugitive Emission Sources, to reduce VOC emissions from well cellars and sources of untreated process gas located at oil and gas production facilities. PAR 1148.1 would not change any of the current VOC reduction aspects in the rule but instead would improve upon compliance activities in order to minimize the potential for nuisance and odor impacts to local residents and sensitive receptors that are often located nearby from ongoing operations that do not include drilling. As with Rule 1148.1, the proposed project will continue to assist the SCAQMD's progress in attaining and maintaining the ambient air quality standards for ozone. Further, because the 2012 AQMP demonstrates that the effects of all existing rules, in combination with implementing all AQMP control measures (including "black box" measures not specifically described in the 2012 AQMP) would bring the district into attainment with all applicable national and state ambient air quality standards, implementing PAR 1148.1 is not expected to conflict with or obstruct implementation of the applicable air quality control plan. Since no significant impacts were identified for this issue, no mitigation measures are necessary or required.

III. b) Less Than Significant Impact. For a discussion of these items, refer to the following analysis.

PAR 1148.1 neither requires the construction of new facilities nor requires physical modifications at existing facilities that would entail construction activities. Instead, PAR 1148.1 would enhance compliance activities by making monitoring and recordkeeping requirements more stringent for facilities subject to the rule. Thus, since there would be no construction activities that would utilize construction equipment or would require worker trips, equipment delivery trips and other haul trips, no construction emissions would be generated. Thus, there would be no significant construction air quality and GHG impacts from implementing PAR 1148.1.

However, in the event that a facility is required to prepare and obtain approval of an Odor Mitigation Plan, the facility operator would be required to utilize a workover rig that is either electrically powered or fueled by natural gas or propane, in lieu of diesel fuel, if available and feasible. At the time of publication of this Final ~~Draft~~ EA, there are no known electric or alternative fuel workover rigs in existence but it is possible that electric or alternative fuel workover rigs may be developed and become available in the future. Even though CEQA does not require speculation of the unknown, CEQA Guidelines §15144 recognizes that some degree of forecasting is needed in order to prepare a CEQA document. While foreseeing the unforeseeable is not possible, SCAQMD staff is required to use its best efforts to find out and disclose all that it reasonably can. For this reason, this Final ~~Draft~~ EA examines the possibility that electric or alternative fuel workover rigs may become available in the future and makes some assumptions in order to attempt to disclose any potential secondary adverse air quality impacts that may be associated with the reliance on the future use of electricity and/or alternative fuels for implementing an Odor Mitigation Plan.

As explained in Chapter 1, workover rigs are regularly utilized at oil and gas production facilities to conduct well maintenance such as the repair or replacement of pull rods or well casings on an oil or gas well. Workover rigs are equipped with diesel engines that range from 150 horsepower

(hp) to 1,000 hp but on average, workover rigs are rated at 475 hp. In addition, workover rigs have a drilling/casing access capability that can range from 8,000 to 30,000 feet in depth. Fuel usage is dependent on the type and rating of the workover rig and the depth to which the workover rig can access the well casings.

According to the California Air Resources Board (CARB), in 2000, there were 256 workover rigs operating throughout California and these rigs consumed 3,222,000 gallons of diesel fuel[5]. Of this amount, the amount of diesel fuel consumed by workover rigs in Los Angeles, Orange, Riverside and San Bernardino counties combined was 387,748 gallons[6]. On average, each workover rig consumed approximately 12,600 gallons of diesel per year. CARB's CEIDARS database estimates that one workover rig will typically operate up to 3,000 hours per year which translates to consuming an average of approximately 4.2 gallons of diesel fuel per hour per workover rig.

CARB's off-road simulation model projected from the 2010 population of workover rigs in California to be approximately 638[7], with approximately 68 projected to operate in Los Angeles, Orange, Riverside and San Bernardino counties in 2015[8]. If all 68 workover rigs operate for 3,000 hours in 2015, the estimated diesel fuel consumption would be approximately 856,800 gallons in 2015. By applying diesel emission factors, the projected baseline emissions from diesel fuel consumption from 68 workover rigs operating in 2015 in Los Angeles, Orange, Riverside and San Bernardino counties can be calculated. Similarly, based on the amount of fuel consumption, the baseline amount of diesel fuel trucks utilized and the associated emissions can also be calculated. Table 2-2 contains a summary of the baseline emissions of diesel fuel consumption from the operation of workover rigs and the fuel truck deliveries.

Table 2-2
Baseline Emissions from Diesel-Fueled Workover Rigs Operated in Los Angeles, Orange, Riverside, and San Bernardino Counties

Activity	VOC (lb/day)	CO (lb/day)	NOx (lb/day)	SOx (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2eq[1] (MT/yr)
Operation of 68 Workover Rigs (Baseline)	25.47	273.35	1,029.10	16.24	18.43	16.95	4,033.08
Transport emissions from Delivering Diesel Fuel (387,748 gallons = Baseline)	0.36	1.53	4.25	0.01	0.21	0.18	4.36
TOTAL	**25.83**	**271.82**	**1,033.35**	**16.25**	**18.64**	**17.13**	**4,037.44**

[1] 1 metric ton = 2,205 pounds

[5] CARB, Central California Ozone Study II, Emission Inventory Project, Attachment L, January 15, 2003. http://www.arb.ca.gov/ei/areasrc/ccosmeth/att_l_fuel_combustion_for_petroleum_production.doc&sa=U&ei=mHUoVeGYJo7aoATo3YD4CA&ved=0CAUQFjAC&client=internal-uds-cse&usg=AFQjCNHh2Bt0d7LDdY4Y3s8JtTVwWud-Hg

[6] CARB, Central California Ozone Study II, Emission Inventory Project, Attachment L spreadsheet calculations, December 10, 2002. http://www.arb.ca.gov/ei/areasrc/ccosmethods.htm

[7] CARB, Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Proposed Amendments to the Regulation for In-Use Off-Road Diesel-Fueled Fleets and the Off-Road Large Spark-Ignition Fleet Requirements, Appendix D, Table D-5, page D-7, October 2010.

[8] CARB's Almanac Emission Projection Data by EIC (published in 2009).

PAR 1148.1 contains a requirement for an owner/operator of a facility that is located within 1,500 feet of a sensitive receptor to prepare and submit for approval an Odor Mitigation Plan in the event that the facility either receives one Rule 402 NOV or three confirmed odor events within six consecutive months. An element of the Odor Mitigation Plan requires the use of a workover rig that is either powered by electricity or by an alternative fuel (e.g., natural gas or propane). Past ~~compliance~~ complaint data for Rule 1148.1 facilities has shown that only three facilities experienced the potential equivalent of ~~more than~~ three or more confirmed odor events or received a Rule 402 NOV. Thus, if PAR 1148.1 is implemented, it is possible that there could be as many as three Odor Mitigation Plans that would require the use of three electric or alternative fuel workover rigs in lieu of diesel-fueled workover rigs. By applying this potential reduction in use of three diesel workover rigs, the 2015 baseline for diesel-fueled workover rigs would be slightly reduced. Thus, a small reduction in diesel-based combustion emissions would be expected from the replacement of three diesel-fueled workover rigs with non-diesel workover rigs at the three facilities that would be subject to an Odor Mitigation Plan. Further, the baseline amount of diesel fuel needed to operate the remaining workover rigs would be reduced by 37,800 gallons per year. Tanker trucks carrying diesel fuel typically carry about 8,500 gallons per load. Thus, an annual reduction of diesel fuel used for workover rigs of 37,800 gallons would mean that there would be five less trucks per year delivering diesel fuel in the region which in turn would reduce the amount of diesel fuel to operate the truck and the associated combustion emissions. However, depending on the source of fuel obtained for the alternative fuel workover rigs, these reductions in delivery trips and the associated combustion emissions could be offset by delivery trips of alternative fuels to supply the non-diesel workover rigs. Table 2-3 contains a summary of what the adjusted baseline emissions could be after PAR 1148.1 is implemented (e.g., three less diesel-fueled workover rigs) and Table 2-4 contains a summary of the net emissions reductions between the current baseline and the adjusted baseline after PAR 1148.1 is implemented. Appendix B contains the spreadsheets for the proposed project with the results based on the assumptions used by the SCAQMD staff for this analysis.

Table 2-3
Emissions from Diesel-Fueled Workover Rigs Operated in Los Angeles, Orange, Riverside, and San Bernardino Counties After Implementing PAR 1148.1

Activity	VOC (lbs/day)	CO (lbs/day)	NOx (lbs/day)	SOx (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	CO2eq[1] (MT/yr)
Operation of 65 Workover Rigs (Reduction due to PAR 1148.1)	24.35	261.29	983.70	15.52	17.61	16.21	3,855.15
Transport emissions from Reduced Deliveries of Diesel Fuel (349,948 gallons due to PAR 1148.1)	0.36	1.53	4.25	0.01	0.21	0.18	3.93
TOTAL	**24.71**	**262.82**	**987.95**	**15.53**	**17.82**	**16.39**	**3,859.08**

[1] 1 metric ton = 2,205 pounds

Table 2-4
Net Difference Between Baseline and PAR 1148.1 Emissions from Diesel-Fueled Workover Rigs Operated in Los Angeles, Orange, Riverside, and San Bernardino Counties

Activity	VOC (lbs/day)	CO (lbs/day)	NOx (lbs/day)	SOx (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	CO2eq[1] (MT/yr)
Baseline	25.83	271.82	1,033.35	16.25	18.64	17.13	4,037.44
PAR 1148.1	24.71	262.82	987.95	15.53	17.82	16.39	3,859.08
NET DIFFERENCE[2]	**(1.12)**	**(9.00)**	**(45.40)**	**(0.72)**	**(0.82)**	**(0.74)**	**(178.36)**
SIGNIFICANCE THRESHOLD	**55**	**550**	**55**	**150**	**150**	**55**	**10,000**
SIGNIFICANT?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

[1] 1 metric ton = 2,205 pounds
[2] ( ) means a reduction

While there currently are no known electrically powered or alternative fuel workover rigs available at the time of publication of this document, if they become available, additional infrastructure to support electric and alternative fuel workover rigs may be needed for any facility that becomes subject to an Odor Mitigation Plan. Secondary impacts to air quality could occur from increased electricity usage for electric workover rigs and from increased production and use of alternative fuels (e.g., source of natural gas or propane) for non-diesel workover rigs.

For example, an increase in the use of electric workover rigs would require the generation of additional electricity at each affected oil and gas facility or at the grid. Many oil and gas facilities produce their own electricity using generators, fuel cells, cogeneration units, or combined heat and power units by burning their own source of fuel onsite (e.g., field gas or treated natural gas). If an electric workover rig is developed and becomes commercially available, some facilities may be able to tie into their existing electricity supply to provide power to an electric workover rig. However, since workover rigs move around within an oil and gas facility from well to well, electricity may not be available near every well location, so it may not be practical or feasible to employ an electric workover rig in all cases since the availability of electricity generated by an oil and gas facility and its proximity from wells will vary from facility to facility. For this reason, facility operators will need to determine on a case-by-case basis whether an electric workover rig could be tied-in to existing electricity supplies.

If existing electricity supplies are insufficient, then facility operators could choose to install electricity generating equipment in order to support the operation of an electric workover rig. However, electricity generation within the district is subject to applicable SCAQMD rules and permitting requirements such as Rule 1134 – Emissions of Oxides of Nitrogen from Stationary Gas Turbines, Rule 1135 – Emissions of Oxides of Nitrogen from Stationary Gas Turbines, and Regulation XX – RECLAIM. These rules and regulations focus on regulating NOx emissions (the primary pollutant of concern from natural gas combustion to generate electricity) from existing power generating equipment. Although emissions from electric utilities in the district are capped under the RECLAIM program (and under Rule 1135), any new power generating facilities in the district to accommodate increased electricity demand would be subject to SCAQMD Regulation XIII – New Source Review, or Rule 2005 which requires installation of BACT, air quality modeling would be required to demonstrate that new emissions would not result in significant ambient air quality impacts (so there would be no localized impacts), and emission offsets (through either emission reduction credits or RECLAIM trading credits) before

permits could be issued. Emission offsets for NOx emissions, for example, would be at a ratio of 1.2 to 1.0, or 1.2 pounds of emission reduction credits required for every new pound of NOx emitted from the power generating source (or a ratio of 1.0 to 1.0 for RECLAIM sources). A separate CEQA evaluation would be required to evaluate the effects of any proposal to install new electricity generating equipment. Further, emissions from the combustion of diesel fuel are generally the emissions that would be reduced when electrification is proposed and replaced with emissions from the combustion of natural gas (as would generally occur from electricity generating equipment and facilities in the district). Emissions from diesel combustion are an order of magnitude higher than emissions from the combustion of natural gas. So overall, criteria pollutant and GHG emissions would be expected to decrease.

While there could be an increase in emissions from generators that may be used to charge batteries in remote locations within an oil and gas facility where no grounded power source is available, generators are also regulated sources in the district. Existing SCAQMD regulations that apply to generators and emergency generators would apply to generators used to charge batteries. New generators would be subject to Regulation XIII or Rule 2005. Existing generators are subject to SCAQMD Rule 1110.2 – Emissions from Gaseous and Liquid Fueled Internal Combustion Engines. Rule 1110.2 does not establish a facility emission cap, but establishes a stringent NOx emission rate. Truly portable equipment may also be regulated under the state registration program, which establishes emission limitations on NOx, VOCs, and CO.

The SCAQMD does not regulate electricity generating facilities outside of the district so the rules and regulations discussed above do not apply to electricity generating facilities outside of the district. In 2010, about 71 percent of the electricity used in California was generated in-state and about 29 percent was imported (see Section 3.2.3). While these electricity generating facilities would not be subject to SCAQMD rules and regulations, they would be subject to the rules and regulations of the state or local air pollution control district in which they are located and the U.S. EPA. These agencies also have established New Source Review regulations for new and modified facilities that generally require compliance with BACT or lowest achievable emission reduction technology. Most in-state electricity generating plants use natural gas, which provides a relatively clean source of fuel (as compared to coal- or diesel-fueled plants). The emissions from these power plants would also be controlled by local, state, and federal rules and regulations, minimizing overall air emissions.

Power plants in California provided approximately 71 percent of the total in-state electricity demand in 2010 of which 15 percent came from renewable sources such as biomass, geothermal, small hydro, solar, and wind, which are clean sources of energy. These sources of electricity generate little, if any, air emissions. Increased use of these and other clean technologies will continue to minimize emissions from the generation of electricity. State law requires increasing the use of renewable energy to 20 percent by 2017 and to 33 percent by 2020.

One gallon of diesel is equivalent to 0.027 kWh of electricity, so utilizing 12,600 gallons of diesel to operate one 1,000 hp workover rig for 3,000 hours per year would be equivalent to using approximately 340 kilowatt-hours (kWh) of electricity[9] in one electric workover rig. Thus, if three diesel-fueled workover rigs are replaced with three electric workover rigs, the total

[9] California Energy Commission, Energy Almanac, Gasoline Gallon Equivalents (GGE) for Alternative Fuels, accessed April 24, 2015. http://www.energyalmanac.ca.gov/transportation/gge.html

electricity demand would be approximately 1,021 kWh. Electricity impacts from energy demand are analyzed and found in the energy section of this chapter.

Although the secondary air quality impacts from construction of infrastructure projects cannot be quantified at this time due to speculation, construction to install an electrical distribution network within an oil and gas facility could potentially require an intensive effort and substantial expense that may also incur short-term significant air quality impacts depending on the extent of construction and the location(s) where the electric workover rigs would be needed. If this ends up being the case, an affected facility operator may explore utilizing alternative fuel workover rigs in lieu of an electric workover rig if it is more economical and convenient. As such, this incremental increase in electricity demand is not expected to create significant adverse air quality impacts compared to emission reductions that would occur from utilizing non-diesel workover rigs.

If an electric tie-in is not feasible, then facility operators may explore utilizing alternative fuel workover rigs, if available. To estimate what the fuel use may be for one alternative fueled workover rig, one gallon of diesel fuel is equivalent to using approximately 0.558 gallons of liquefied natural gas (LNG), 0.729 therm of compressed natural gas (CNG), and 0.653 gallons of liquefied petroleum gas/propane (LPG)[8]. Thus, replacing one diesel workover rig with an alternative fuel workover rig, would utilize approximately 7,031 gallons per year of LNG, or 9,185 therms per year of CNG, or 8,228 gallons per year of LPG. Similarly, if three diesel-fueled workover rigs are replaced with three alternative fuel workover rigs, the total demand would be approximately 21,092 gallons per year of LNG, or 27,556 therms per year of CNG, or 24,683 gallons per year of LPG.

To understand what the air quality and GHG impacts would be from burning these alternative fuels in workover rigs, the peak daily emissions from operating three workover rigs for each alternative fuel was estimated, the alternative fuel with the highest values were compared to the reduction in peak daily emissions due to reducing diesel fuel use. These values are summarized in Table 2-5.

Table 2-5
Estimated Emissions from Alternative Fuel Workover Rigs
Based on Diesel Fuel Usage Equivalency

Activity	VOC (lbs/day)	CO (lbs/day)	NOx (lbs/day)	SOx (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	CO2eq[1] (MT/yr)
Operation of 3 LNG Workover Rigs	0.44	N/A	1.38	N/A	0.07	0.06	0.15
Operation of 3 CNG Workover Rigs	4.25	N/A	13.45	N/A	0.67	0.62	1.5
Operation of 3 LPG Workover Rigs	0.51	N/A	1.61	N/A	0.08	0.07	0.18
PEAK DAILY INCREASE FROM ALTERNATIVE FUEL (CNG)	**4.25**	**N/A**	**13.45**	**N/A**	**0.67**	**0.62**	**1.5**
PEAK DAILY DECREASE FROM REDUCING DIESEL FUEL[2]	**(1.12)**	**(9.00)**	**(45.40)**	**(0.72)**	**(0.82)**	**(0.74)**	**(178.36)**
NET DIFFERENCE[2]	**3.13**	**(9.00)**	**(31.95)**	**(0.72)**	**(0.15)**	**(0.12)**	**(176.86)**
SIGNIFICANCE THRESHOLD	**55**	**550**	**55**	**150**	**150**	**55**	**10,000**
SIGNIFICANT?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

N/A = Not calculated due to lack of available emission factors
[1] 1 metric ton = 2,205 pounds
[2] ( ) means a reduction

Subsequent to the release of the Draft EA, industry commented that an additional vacuum truck may be needed to pump out a well cellar on the same day if it has been verified as a source of odors. In addition, if the operation of a vacuum truck occurs at night, temporary portable lighting equipment may be needed, if lighting does not already exist at or near the affected well cellar, to provide sufficient lighting to safely direct the vacuum hose to the affected location. If temporary portable lighting is required, then a diesel generator set may be needed to supply the power to the lighting equipment.

As explained in Section I - Aesthetics, past complaint data for Rule 1148.1 facilities has shown that only three facilities experienced the potential equivalent of three or more confirmed odor events or received a Rule 402 NOV. Thus, in the event that three separate facilities would each need to have one additional vacuum truck visit the premises to pump out a well cellar, and if circumstances exist that these activities would occur at night, then three additional diesel generator sets to power three portable lighting units could be needed on a peak day. While these circumstances could create a potential for additional nighttime lighting, the lighting would only be needed for as long as each vacuum truck is operating. Vacuum trucks have pumps that can suction up to 4,000 cubic feet per minute of material, so depending on the volume of material needed to be pumped out of a well cellar, the vacuum truck and any needed lighting would likely be needed from five minutes to one hour. However, to be conservative, the analysis assumes that three vacuum trucks and three generator sets to support lighting equipment would each operate for two hours on a peak day.

Table 2-6 contains a summary of what the emissions could be in the event three vacuum trucks and three generator sets operate on a peak day. Appendix B contains the spreadsheets for the proposed project with the results based on the assumptions used by the SCAQMD staff for this analysis.

Table 2-6
Estimated Emissions from Vacuum Trucks and Generator Sets

Activity	VOC (lbs/day)	CO (lbs/day)	NOx (lbs/day)	SOx (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	CO2eq[1] (MT/yr)
Operation of 3 Vacuum Trucks	0.27	1.15	3.18	0.01	0.16	0.13	0.29
Operation of 3 Generator Sets	0.01	0.05	0.13	0.00	0.01	0.01	0.01
PEAK DAILY INCREASE	0.28	1.20	3.31	0.01	0.17	0.14	0.30
SIGNIFICANCE THRESHOLD	**55**	**550**	**55**	**150**	**150**	**55**	**10,000**
SIGNIFICANT?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

[1] 1 metric ton = 2,205 pounds

Finally, in response to industry's comment that some facilities may need to install monitoring equipment, the analysis assumes a total of 24 facilities may be affected and that five facilities on a peak day may undergo light construction activities for one day per facility. For each affected facility, the construction activities would be expected to involve a work crew of three to install the monitoring equipment and make the electrical connections and one delivery truck to deliver supplies for the workers. Table 2-7 contains a summary of what the construction emissions would be in the event that five facilities install five monitoring systems on a peak day. Table 2-8 contains a summary of what the GHG construction emissions would be in the event that all 24 facilities have 24 monitoring systems installed. Appendix B contains the spreadsheets for the proposed project with the results based on the assumptions used by the SCAQMD staff for this analysis.

Table 2-7
Estimated Construction Emissions from Installing Monitoring Systems on a Peak Day

Activity	VOC (lbs/day)	CO (lbs/day)	NOx (lbs/day)	SOx (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)
5 facilities each with 3 Construction Worker Vehicles	0.30	2.75	0.25	0.00	0.04	0.03
5 facilities each with 1 delivery truck	0.45	2.90	3.20	0.00	0.13	0.10
PEAK DAILY INCREASE	0.75	5.65	3.45	0.00	0.17	0.13
SIGNIFICANCE THRESHOLD	**75**	**550**	**100**	**150**	**150**	**55**
SIGNIFICANT?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

[1] 1 metric ton = 2,205 pounds

Table 2-8
Estimated GHG Construction Emissions from Installing Monitoring Systems at 24 Facilities

Activity	CO2eq [1, 2] (MT/yr)
24 facilities each with 3 Construction Worker Vehicles	0.04
24 facilities each with 1 delivery truck	0.05
TOTAL PROJECT INCREASE	0.09
SIGNIFICANCE THRESHOLD	**10,000**
SIGNIFICANT?	**NO**

1 1 metric ton = 2,205 pounds
2 GHGs from temporary construction activities are amortized over 30 years

In conclusion, less than significant adverse operational impacts to air quality and GHGs are expected from a slight increased demand for electricity to operate three electric workover rigs or from a slight increased demand in the use of alternative fuels to operate three alternative fuel workover rigs. In addition, less than significant adverse operational impacts to air quality and GHGs are also expected from operating vacuum trucks and generator sets on a peak day. Finally, less than significant adverse construction impacts to air quality and GHGs are also expected from constructing five monitoring systems on a peak day. Further, since no significant impacts were identified for this issue, no mitigation measures are necessary or required.

III. c) Less Than Significant Impact. As the Lead Agency under CEQA, the SCAQMD uses the same significance thresholds for project-specific and cumulative impacts for all environmental topics analyzed. Projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable; conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant[10].

With respect to air quality, no cumulative impacts are anticipated from the proposed project. Emissions resulting with implementation of the proposed project will be below the SCAQMD's thresholds for all criteria air pollutants. Although the proposed project may contribute additional air pollutants to an existing nonattainment area, these increases are below the SCAQMD air quality significance criteria. Therefore, the proposed project will not cause a significant environmental effect, nor result in an unavoidable cumulatively considerable contribution to an air quality impact[11].

Emissions relative to GHG emissions from the proposed project will also be below the SCAQMD's cumulatively considerable significance threshold for GHGs. Thus, no significant adverse impacts are expected, either individually or cumulatively.

[10] 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/hb/2003/030929a.html

[11] Refer also to *Citizens for Responsible Equitable Environmental Development c. City of Chula Vista* (2011) 197 Cal. App. 4th 327, 334 and *Rialto Citizens for Responsible Growth v. City of Rialto* (2102) 208 Cal. App. 4th 899 pertaining to the determination of significant impacts and whether a project is considered to be cumulatively considerable.

Consistent with CEQA Guidelines §15064.7, a "lead agency may rely on a threshold of significance standard to determine whether a project will cause a significant environmental effect." Further, CEQA Guidelines §15064 (h)(1) requires that a "lead agency consider whether the cumulative impact is significant and whether the effects of the project are cumulatively considerable." Where a lead agency is examining a project with an incremental effect that is not cumulatively considerable, a lead agency need not consider the effect significant, but must briefly describe the basis for concluding that the incremental effect is not cumulatively considerable. As stated above, projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable; projects that do not exceed the project-specific significance thresholds are not considered to be cumulatively considerable. Therefore the proposed project's contribution to air quality and GHGs are not cumulatively considerable, and thus not significant. This conclusion is consistent with CEQA Guidelines §15064 (h)(4), which states, "The mere existence of cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable."

III. d) ~~No~~ Less Than Significant Impact. Affected facilities are not expected to increase exposure to sensitive receptors with substantial pollutant concentrations from the implementation of PAR 1148.1 for the following reasons: 1) PAR 1148.1 would not change any of the VOC/TOC/TAC reduction aspects ~~in~~ currently in the rule but instead would improve upon compliance activities in order to minimize the potential for nuisance and odor impacts to local residents and sensitive receptors that are often located nearby from ongoing operations that do not include drilling; 2) the use of non-diesel workover rigs will be required for any facility that is located within 1,500 feet of a sensitive receptor and that is required to prepare and submit for approval an Odor Mitigation Plan in the event that the facility either receives one Rule 402 NOV or three confirmed odor events within six consecutive months; and, 3) the use of non-diesel workover rigs would actually reduce the amount of emissions of criteria pollutants, diesel PM (a TAC) and GHGs for facilities located the closest to sensitive receptors when compared to current baseline emissions from workover rig activities (see Table 2-4). In addition, while the potential increase in the use of vacuum trucks and generator sets rely on diesel fuel for operation, the emission calculations for a peak day as summarized in Table 2-6 show less than significant increases in operational emissions. Similarly, while there may be a need for some facilities to install monitoring equipment, the emission calculations as summarized in Tables 2-7 and 2-8 show less than significant increases in construction emissions.

Therefore, no significant adverse air quality impacts to sensitive receptors are expected from implementing PAR 1148.1. Since no significant impacts were identified for this issue, no mitigation measures are necessary or required.

III. e) No Impact. Historically, the SCAQMD has enforced odor nuisance complaints through SCAQMD Rule 402 - Nuisance. Sulfur compounds such as hydrogen sulfide (H2S) and mercaptans are the primary sources of odors from existing oil and gas operations. PAR 1148.1 would further assist in minimizing emissions to the atmosphere by improving upon compliance and monitoring requirements to minimize the potential for odors. For example, the use of non-diesel workover rigs will be required for any facility that is located within 1,500 feet of a sensitive receptor and that is required to prepare and submit for approval an Odor Mitigation Plan in the event that the facility either receives one Rule 402 NOV or three confirmed odor events within six consecutive months. Currently, workover rigs operate with diesel fuel which 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. Because the operation of workover rigs, vacuum trucks, and generator sets will occur within the confines of existing affected facilities, sufficient dispersion of diesel emissions over distance generally occurs such that odors associated with diesel emissions may be discernable to offsite receptors, depending on the location of the equipment ~~workover rig~~ and its distance relative to the nearest offsite receptor. Further, the use of construction worker vehicles and delivery trucks as part of construction activities associated with installing monitoring equipment will not be idling at the affected facilities once onsite, so odors from these vehicles would not be expected. However, in the event that an Odor Mitigation Plan is required, implementation of PAR 1148.1 may cause a limited replacement of diesel workover rigs with non-diesel workover rigs, when they become available, such that odors associated with diesel combustion will be reduced from baseline conditions whenever and wherever a non-diesel workover rig is employed. Further, the operation of non-diesel workover rigs is not expected to be a substantial source of odors because non-diesel workover rigs would either rely on electricity or be directly fueled by cleaner, less odorous fuels such as natural gas or propane, when compared to diesel. Finally, in the event that a vacuum truck is required to pump out a well cellar and even if these operations require nighttime lighting necessitating the use of a generator set at an affected facility, an overall improvement in odors would be expected because the need for the pumping out of a well cellar would be triggered because it has been verified as a source of odors. Thus, the proposed project is not expected to create significant adverse objectionable odors. Since no significant impacts were identified for this issue, no mitigation measures are necessary or required.

III. f) No Impact. Upon implementation, the proposed project would be required to comply with all applicable SCAQMD, CARB, and USEPA rules and regulations. Thus, the proposed project would not be expected to diminish an existing air quality rule or future compliance requirements. Further, by amending Rule 1148.1 as proposed, the proposed project would enhance existing air pollution control rules that assist the SCAQMD in its efforts to attain and maintain with a margin of safety the state and federal ambient air quality standards for ozone and PM2.5 because VOCs are considered to be precursor pollutants that contribute to the formation of ozone and PM2.5. Accordingly, the proposed project would not diminish any air quality rules or regulations. Since no significant impacts were identified for this issue, no mitigation measures are necessary or required.

III. g) & h) Less Than Significant Impact. Changes in global climate patterns have been associated with global warming, an average increase in the temperature of the atmosphere near the Earth's surface, recently 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[12]. State law defines GHG to include the following: carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF6) (HSC

[12] Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.). 2007. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007. Cambridge University Press. http://www.ipcc.ch/publications_and_data/ar4/wg1/en/contents.html

§38505(g)). The most common GHG that results from human activity is CO2, followed by CH4 and N2O.

GHGs and other global warming pollutants are perceived as solely global in their impacts in that that increasing emissions anywhere in the world contributes to climate change anywhere in the world. However, this perception may not be completely correct. A study conducted on the health impacts of CO2 "domes" that form over urban areas concluded that they cause increases in local temperatures and local criteria pollutants, which have adverse health effects[13].

The analysis of GHGs is a different analysis 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 which means 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 (e.g., annual emissions). GHG emissions are typically considered to be cumulative impacts because they contribute to global climate effects. GHG emission impacts from implementing the proposed project were calculated at the project-specific level. For example, installation and subsequent operation of compressor and steam ejector technology has the potential to increase the electricity, fuel, and water use which will in turn increase CO2 emissions.

On December 5, 2008, the SCAQMD adopted an interim CEQA GHG Significance Threshold for projects where SCAQMD is the lead agency (SCAQMD, 2008). This interim threshold is set at 10,000 metric tons (MT) of CO2 equivalent emissions (CO2eq) per year. Projects with incremental increases below this threshold will not be cumulatively considerable.

As discussed earlier in Sections b) and c) of this topic area, the analysis shows that there may be a slight reduction in GHG emissions from the combustion of diesel fuel in workover rig engines in the event that an Odor Mitigation Plan requiring the use of a non-diesel workover rig occurs. However, the combustion of natural gas or propane in workover rigs will generate GHG emissions but the GHG emissions generated will be lower because the CO2eq emission factors for natural gas and propane are much lower than the CO2eq emission factors for diesel. Nonetheless, with a reduction in diesel-fueled workover rigs, a slight, overall reduction in GHG emissions would be expected at any facility that would be required to have an Odor Mitigation Plan and to utilize a non-diesel workover rig as part of plan implementation.

Specifically, as summarized in Table 2-4, the utilization of up to three non-diesel workover rigs would reduce GHGs generated from diesel combustion by approximately 178 MT/yr of CO2eq emissions when compared to the existing setting. As shown in Table 2-5, this decrease would be offset by slight increases in GHGs from utilizing alternative fuels in three workover rigs by the following amounts: 0.15 MT/yr CO2eq for LNG fuel; 0.50 MT/yr CO2eq for CNG fuel; and, 0.18 MT/yr CO2eq for LPG fuel. Thus, despite these slight increases, overall a net reduction in

[13] 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 emissions would be expected from utilizing alternative fuel workover rigs in lieu of diesel fuel workover rigs.

The analysis mainly focuses on directly emitted CO2 because this is the primary GHG pollutant emitted during the combustion process and is the GHG pollutant for which emission factors are most readily available. CO2eq data derived from CO2 emissions reported specific to workover rigs was provided by CARB. In addition, CH4 and N20 emissions were also estimated and included in the overall GHG calculations. No other GHGs are expected to be emitted because the proposed project does not affect equipment or operations that have the potential to emit other non-fuel combustion generated GHGs such as SF6, HFCs or PFCs. Appendix B contains the spreadsheets for the proposed project with the results based on the assumptions used by the SCAQMD staff for this analysis.

While implementing the proposed project could potentially achieve a reduction in GHG emissions for any facility that becomes subject to an Odor Mitigation Plan, in the event that more than three non-diesel workover rigs are employed due to multiple Odor Mitigation Plans, there potentially could be more GHG reductions. In the event that vacuum trucks and generator sets are needed to pump out well cellars that have been verified as a source of odors, the GHG emission calculations during operation, as summarized in Table 2-6, show a very slight, less than significant increase of 0.30 MT/year of GHGs. Further, as summarized in Table 2-8, if 24 facilities have monitoring systems installed, the amortized GHG emission calculations for construction show a less than significant increase of 0.09 MT/year of GHGs. Lastly, PAR 1148.1 is not subject to a GHG reduction plan. Thus, implementation of PAR 1148.1 would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing GHG emissions.

Thus, as shown in Tables 2-5, 2-6, and 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.

Conclusion

Based upon these considerations, significant air quality and GHG emissions impacts are not expected from implementing PAR 1148.1. Since no significant air quality and GHG emissions impacts were identified, no mitigation measures are necessary or required.

		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?	☐	☐	☐	☑
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?	☐	☐	☐	☑
c)	Have a substantial adverse effect on federally protected wetlands as defined by §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?	☐	☐	☐	☑
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?	☐	☐	☐	☑
e)	Conflicting with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☑
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?	☐	☐	☐	☑

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

IV. a), b), c), & d) No Impact. PAR 1148.1 would only affect compliance activities at existing oil and gas production facilities which have already been greatly disturbed. In general, these areas currently do not typically support riparian habitat, federally protected wetlands, or migratory corridors. Additionally, special status plants, animals, or natural communities are not expected to be found in close proximity to the affected facilities. Areas immediately around the oil and gas production wells subject to PAR 1148.1 are expected to be devoid of all biological activity for safety and fire prevention reasons. Therefore, the proposed project 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's jurisdiction. The current and expected future land use development to accommodate population growth is primarily due to economic considerations or local government planning decisions. A conclusion in the Program Environmental Impact Report (EIR) for the 2012 AQMP was that population growth in the region would have greater adverse effects on plant species and wildlife dispersal or migration corridors in the basin than SCAQMD regulatory activities, (e.g., air quality control measures or regulations). The current and expected future land use development to accommodate population growth is primarily due to economic considerations or local government planning decisions.

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 the proposed project. Additionally, the proposed project 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 the proposed project 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 for the proposed project, has found that, when considering the record as a whole, there is no evidence that the proposed project 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 §753.5 (d), Title 14 of the California Code of Regulations.

Based upon these considerations, significant biological resource impacts are not expected from implementing PAR 1148.1, and thus, this topic will not be further analyzed. 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 §15064.5?	☐	☐	☐	☑
b)	Cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5?	☐	☐	☐	☑
c)	Directly or indirectly destroy a unique paleontological resource, site, or feature?	☐	☐	☐	☑
d)	Disturb any human remains, including those interred outside formal cemeteries?	☐	☐	☐	☑

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 to a community or ethnic or social group.
- Unique paleontological resources are present that could be disturbed by construction of the proposed project.
- The project would disturb human remains.

Discussion

V. a) 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. Even if there are any oil and gas wells that are older than 50 years, they would 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. Further, since PAR 1148.1 is focused mainly on improving compliance to minimize odors at oil and gas production facilities, the proposed project would not require any facility modifications that would adversely impact any existing structures that would be considered historically significant, that have contributed to California history, or that pose high artistic values. Therefore, the proposed project is not expected to cause any impacts to significant historic cultural resources.

V. b), c), & d) No Impact. PAR 1148.1 would only affect compliance activities at existing oil and gas production facilities which have already been greatly disturbed due to existing oil and gas drilling activities at each affected facility. As such, PAR 1148.1 would not require the construction of new buildings or structures, increasing the floor space of existing buildings or structures, or any other construction activities that would require disturbing soil that may contain cultural resources. Further, because the compliance activities are expected to be confined within the existing footprint of these affected facilities, the proposed project 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, the proposed project has no potential to cause a substantial adverse change to a historical or archaeological resource, directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, or disturb any human remains, including those interred outside a formal cemeteries. The proposed project 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.

Based upon these considerations, significant adverse cultural resources impacts are not expected from implementing PAR 1148.1, and thus, this topic will not be further analyzed. 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?	☐	☐	☐	☑

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
b)	Result in the need for new or substantially altered power or natural gas utility systems?	☐	☐	☑	☐
c)	Create any significant effects on local or regional energy supplies and on requirements for additional energy?	☐	☐	☑	☐
d)	Create any significant effects on peak and base period demands for electricity and other forms of energy?	☐	☐	☑	☐
e)	Comply with existing energy standards?	☐	☐	☐	☑

Significance Criteria

Impacts to energy ~~and mineral~~ 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

VI. a) & e) No Impact. The proposed project is not subject to any existing energy conservation plans. For any facility that is subject to PAR 1148.1 and is also subject to an energy conservation plan, it is not expected that the proposed project would affect in any way or interfere with a facility's ability to comply with its energy conservation plan or energy standards. In addition, energy information, as it relates to the replacement of diesel workover rigs with non-diesel workover rigs operating at any facility that would be required to have an Odor Mitigation Plan, was derived as part of the air quality analysis in this chapter and is summarized in the following discussion in sections b), c) and d). The following sections conclude that the amount of energy that may be needed to accommodate non-diesel workover rig operations as part of an Odor Mitigation Plan, to operate vacuum trucks and generator sets, and to install monitoring systems at affected facilities would be less than significant. Further, since non-diesel workover rig technology does not currently exist, it is expected that when this technology is developed and becomes commercially available, the technology would be designed to comply with all applicable existing energy standards. Thus, the proposed project would not utilize non-renewable energy resources in a wasteful or inefficient manner.

VI. b), c) & d) Less Than Significant Impact. As previously explained in Section III. b) & c), in the event that a facility is required to prepare and obtain approval of an Odor Mitigation Plan, the facility operator would be required to utilize a workover rig that is either electrically powered or fueled by LNG, CNG or LPG, in lieu of diesel fuel, if available and feasible. According to CARB's database, each workover rig consumes approximately 12,600 gallons of diesel per year for 3,000 hours of operation. Thus, if three diesel-fueled workover rigs are replaced with three non-diesel workover rigs at the three facilities that would be subject to an Odor Mitigation Plan, then a small reduction in the amount of diesel fuel needed (e.g., approximately 37,800 gallons per year) to operate these workover rigs would be expected. In addition, a slight reduction in the demand for diesel fuel will reduce the number of trucks per year delivering diesel fuel by five truck trips. Five diesel delivery trucks per year would utilize approximately 1,087 gallons of diesel fuel. Thus, the total amount of diesel fuel that would no longer be utilized if three diesel workover rigs are replaced with non-diesel workover rigs is approximately 38,897 gallons per year. Since there would be no increase in the amount of diesel fuel consumed, a reduction in the amount of diesel fuel would not be considered a significant adverse energy impact. In addition, if three electric workover rigs replace three diesel-fueled workover rigs, a slight increase in electricity would be needed but the increase would not exceed the significance threshold of one percent of electricity supply. Table 2-9~~6~~ summarizes the estimated electricity usage in the event that three electric workover rigs replace three diesel-fueled workover rigs.

Table 2-9~~6~~
Electricity Usage Summary

No. of Electric Workover Rigs	Instantaneous Electricity Usage (MW)	Significance Threshold: 1% of supply (MW)	Percent Increase (%)	Significant?
3	0.0003	8,362	0%	NO

The decrease in the amount of diesel fuel demand would be offset by an increase in the use of LNG, CNG or LPG depending on the type of non-diesel workover rig employed. As previously analyzed in Section III b) and c), if three diesel-fueled workover rigs are replaced with three alternative fuel workover rigs, the total demand would be approximately 21,092 gallons per year of LNG, or 27,556 therms per year of CNG, or 24,683 gallons per year of LPG as compared to a reduction in the use of diesel fuel by 37,600 gallons. In order to determine peak impacts for a worst-case analysis, Table 2-10~~7~~ summarizes the estimated alternative fuel usage in the event that three diesel workover rigs are replaced by three workover rigs fueled by 100 percent of either LNG, CNG or LPG. None of the increased use of alternative fuels individually or cumulatively would exceed the significance threshold of one percent of supply. The energy calculations are shown in Appendix B of this Final ~~Draft~~ EA.

Table 2-10~~7~~
Total Projected Alternative Fuel Use

Fuel Type	Total Energy Usage per Type of Alternative Fuel		
	LNG	CNG	LPG
Projected Annual Use	21,092 gallons = 0.003 MMcf [a]	27,556 therms = 2.76 MMcf [b]	24,683 gallons
Threshold Fuel Supply	9,330 MMcf [c]	9,330 MMcf [c]	25 MMgallons[d]
% of Fuel Supply	0 %	0.03%	0.1%
Significant (Yes/No) [e]	NO	NO	NO

[a] 1 cubic foot (cf) = 0.000001 million cubic feet (MMcf) = 7.481 gallons
[b] 1 therm = 100 cubic feet (cf) = 0.0001 million cubic feet (MMcf)
[c] Natural Gas Infrastructure Draft Staff Paper, California Energy Commission, May 2009 (CEC-200-2009-004-SD). http://www.energy.ca.gov/2009publications/CEC-200-2009-004/CEC-200-2009-004-SD.PDF
[d] Retail Fuel Report and Data for California, California Energy Commission, August 2014. http://energyalmanac.ca.gov/gasoline/piira_retail_survey.html
[e] SCAQMD's Energy Threshold for both Fuel Use is 1% of Supply.

In the event that vacuum trucks and generator sets are needed to pump out well cellars that have been verified as a source of odors, the additional diesel fuel needed to operate this equipment is approximately 47 gallons per year. Further, if affected facilities install monitoring systems, approximately 200 gallons of diesel fuel and 108 gallons of gasoline would be needed to operate delivery haul trucks and construction worker vehicles during construction. Table 2-11 summarizes the estimated increase in diesel fuel and gasoline usage from these activities.

Table 2-11
Total Projected Fuel Use From Vacuum Trucks, Generator Sets, Delivery Trucks, and Construction Worker Vehicles

Fuel Type	Diesel	Gasoline
Projected Use	47 gallons/year plus 200 gallons/project	108 gallons/project
Threshold Fuel Supply [a]	1,587,000,000 gallons	6,579,000,000 gallons
% of Fuel Supply	0 %	0 %
Significant (Yes/No) [b]	NO	NO

[a] 2012 California Retail Sales by County; California Energy Commission http://energyalmanac.ca.gov/gasoline/retail_fuel_outlet_survey/retail_diesel_sales_by_county.html http://energyalmanac.ca.gov/gasoline/retail_fuel_outlet_survey/retail_gasoline_sales_by_county.html
[b] SCAQMD's Energy Threshold for both Fuel Use is 1% of Supply.

As shown in Table 2-11, the increased use of diesel fuel and gasoline would not exceed the significance threshold of one percent of supply. Since the proposed project would not exceed the SCAQMD's energy threshold of one percent of supply for electricity, ~~and~~ alternative fuel, diesel fuel and gasoline usage, implementation of PAR 1148.1 is expected to have less than significant energy impacts.

Based upon these considerations, significant energy impacts are not expected from implementing PAR 1148.1. 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:	☐	☐	☐	☑
	• 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?	☐	☐	☐	☑
	• Strong seismic ground shaking?	☐	☐	☐	☑
	• Seismic–related ground failure, including liquefaction?	☐	☐	☐	☑
b)	Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☑
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?	☐	☐	☐	☑
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?	☐	☐	☐	☑
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?	☐	☐	☐	☑

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

VII. a) No Impact. Other than the possible replacement of three diesel-fueled workover rigs with three-non-diesel workover rigs, the use of vacuum trucks and generator sets for well cellar clean out, or the operation of construction worker vehicles and delivery trucks during monitoring equipment installation, no substantial physical modifications to buildings or structures are expected to occur as a result of implementing PAR 1148.1. Since workover rigs, vacuum trucks, construction worker vehicles, and delivery trucks are mobile sources that can be driven on-road and generator sets are off-road equipment, any replacement of diesel-fueled workover rigs with non-diesel workover rigs, the use of vacuum trucks and generator sets, the use of construction worker vehicles and delivery trucks would be a matter of logistics to either schedule the switch out, use the equipment, or schedule the installation of monitoring equipment at an affected facility. Thus, no heavy-duty diesel-fueled construction equipment would be required and no soils would be disturbed. Therefore, the replacement of diesel-fueled workover rigs with non-diesel workover rigs, the use of vacuum trucks and generator sets, or the use of construction worker vehicles and delivery trucks is not expected to affect geology or soils, or existing geophysical conditions at the affected facilities.

Southern California is an area of known seismic activity. 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 Uniform Building Code requirements operate on the

principle that providing appropriate foundations, among other aspects, helps to protect buildings from failure during earthquakes. 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 at existing affected facilities are likely to conform to the Uniform Building Code and all other applicable state codes in effect at the time they were constructed. Further, as with the current use of diesel workover rigs, the use of non-diesel workover rigs at existing affected facilities to comply with the proposed project would also be expected to conform to the Uniform Building Code and all other applicable state and local building codes.

Thus, since implementation of PAR 1148.1 would be expected to affect operations at existing facilities and would not involve any additional drilling, digging or construction, the proposed project 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 and will not be further analyzed.

VII. b) No Impact. Other than the possible replacement of three diesel-fueled workover rigs with three-non-diesel workover rigs, the use of vacuum trucks and generator sets, or the use of construction worker vehicles and delivery trucks as part of installing monitoring equipment, no physical modifications to buildings or structures are expected to occur as a result of implementing PAR 1148.1. Since workover rigs, vacuum trucks, construction worker vehicles, and delivery trucks are mobile sources that can be driven on-road and generator sets are off-road equipment, any replacement of diesel-fueled workover rigs with non-diesel workover rigs would be a matter of logistics to schedule the switch out, the use of vacuum trucks and generator sets during well cellar pump out, or the installation of monitoring equipment at an affected facility. Since the existing facilities are generally flat and have previously been graded and paved, no excavating or grading activities would be needed and no temporary erosion would be expected as part of implementing PAR 1148.1.

Further, wind erosion is not expected to occur to any appreciable extent, because operators of the affected facilities would be required to comply with the best available control measure (BACM) requirements of SCAQMD Rule 403 – Fugitive Dust. In general, operators must control fugitive dust through a number of soil stabilizing measures such as watering the site, using chemical soil stabilizers, revegetating inactive sites, et cetera. The proposed project would not change how operators currently comply with these requirements. Thus, since implementation of PAR 1148.1 would be expected to affect operations at existing facilities and would not involve any additional drilling, digging or construction, no unstable earth conditions or changes in geologic substructures are expected to result from implementing the proposed project.

VII. c) No Impact. As explained in Section VII. b), since no excavation, grading, or filling activities would occur at affected facilities, PAR 1148.1 would not be expected to affect the soil types present at the affected facilities in a way that would cause them to be further susceptible to

expansion or liquefaction. For the same reasons, subsidence is also not anticipated to be a problem. Further, the proposed project would not cause any new drilling or the removal of underground products (e.g., water, crude oil, et cetera) that could produce subsidence effects. While the affected facilities engage in drilling, the proposed project (e.g., amending Rule 1148.1) will not increase drilling. Additionally, the affected areas are not envisioned to be prone to landslides or have unique geologic features since the affected industrial facilities are located in areas that have been previously disturbed and where such features have already been altered or removed.

Finally, since implementation of PAR 1148.1 would be expected to affect operations at existing facilities and would not involve any additional drilling, digging or construction, the proposed project would not be expected to alter or make worse any existing potential for subsidence, liquefaction, et cetera.

VII. d) & e) No Impact. Since the proposed project would affect compliance activities at existing oil and gas facilities, it is expected that people or property would not be exposed to new impacts related to expansive soils or soils incapable of supporting water disposal. Further, typically each affected facility has some degree of existing wastewater treatment systems that would continue to be used and would be expected to be unaffected by the proposed project. Sewer systems are available to handle wastewater produced and treated by each affected facility. Each existing facility affected by the proposed project would not require installation of septic tanks or alternative wastewater disposal systems. As a result, the proposed project would not require facility operators to utilize or install new or modify existing septic systems or alternative wastewater disposal systems. Thus, since implementation of PAR 1148.1 would be expected to affect operations at existing facilities and would not involve any additional drilling, digging or construction, implementation of the proposed project would not adversely affect soils associated with a septic system or alternative wastewater disposal system.

Based upon these considerations, significant geology and soils impacts are not expected from implementing PAR 1148.1, and thus, this topic will not be further analyzed. 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?	☐	☐	☑	☐

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
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?	☐	☐	☑	☐
c)	Emit hazardous emissions, or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☑
d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would create a significant hazard to the public or the environment?	☐	☐	☐	☑
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?	☐	☐	☐	☑
f)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☑
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?	☐	☐	☐	☑
h)	Significantly increased fire hazard in areas with flammable materials?	☐	☐	☑	☐

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

VIII. a), & b) Less Than Significant Impact. PAR 1148.1 would not introduce, require, or change the amount of hazardous materials: 1) routinely transported to or from the oil and gas facilities; 2) processed by the oil and gas facilities; and, 3) disposed of as hazardous waste by the oil and gas facilities. However, PAR 1148.1 may have the effect of reducing odorous emissions vented to the atmosphere, which include HAPs such as H2S, via the enhanced compliance requirements. While the reduction of H2S vented to the atmosphere would be beneficial for air quality and odor, because H2S is also explosive, a reduction in H2S emissions would lessen the current explosion hazards associated with operation activities at oil and gas facilities.

VIII. c) & e) No Impact. Compliance activities from implementing the proposed project are expected to occur within the existing confines of the affected facilities. However, some of these facilities may be located within one-quarter mile of a sensitive receptor (e.g., a school) or in close proximity to a public/private airport and are located within an airport land use plan. Nonetheless, the replacement of diesel-fueled workover rigs with non-diesel workover rigs at facilities that would be subject to an Odor Mitigation Plan, would not cause the height of the required workover rig to change since the height of the workover rig is dependent on the depth of the oil or gas well to be serviced. Similarly, oil and gas facilities currently use vacuum trucks and generator sets with low heights, so the slight increase in use of these equipment, would not alter the height profiles of these equipment. Further, the height of construction worker vehicles and delivery trucks needed for the purpose of installing monitoring equipment at affected facilities is not expected to be any taller than vehicles currently in use throughout the district. Thus, implementation of PAR 1148.1 would not interfere with plane flight paths consistent with Federal Aviation Regulation, Part 77. Such codes are designed to protect the public from hazards associated with normal operation.

Further, operation of workover rigs, vacuum trucks and generator sets at oil and gas facilities would be required to comply with all appropriate building, land use and fire codes. Finally, the implementation of PAR 1148.1 is not expected to generate significant adverse new hazardous emissions in general (see the discussions under Section III) or increase the manufacture or use of hazardous materials (see discussion VIII. a) & b) above).

Since PAR 1148.1 would not create any new hazards or increase existing hazards above the existing baseline, no significant impacts from use and potential accidental release of acutely hazardous materials, substances and wastes near sensitive receptors and public/private airports are expected to occur. Therefore, the proposed project would not be expected to result in a safety hazard for people residing or working in the area of the affected facilities even within the vicinity of a sensitive receptor or airport. Thus, PAR 1148.1 is not expected to increase or create

any new safety hazards to people working or residing in the vicinity of public/private airports or within one-quarter mile of an existing or proposed school.

VIII. d) No Impact. Government Code §65962.5 typically refers to a list of facilities that may be subject to Resource Conservation and Recovery Act (RCRA) permits. Since PAR 1148.1 would improve compliance activities applies to oil and gas activities, PAR 1148.1 is not expected to have direct impacts on facilities affected by Government Code §65962.5. However, if affected facilities are subject to Government Code §65962.5, they would still need to comply with any regulations relating to that code section. The replacement of diesel-fueled worker rigs with non-diesel workover rigs is not expected to generate increased hazardous waste above the existing baseline or interfere with existing hazardous waste management programs. Further, because the use of additional vacuum trucks and generator sets would merely expedite the removal of odorous materials from any well cellar identified as a verified odor source, no increases in the amount of hazardous waste collected and disposed of would be expected to occur. Accordingly, PAR 1148.1 is not expected to result in a new significant impact to the public or environment from sites on lists compiled pursuant to Government Code §65962.5.

Lastly, if any of the affected facilities are designated pursuant to Government Code §65962.5 as a large quantity generator of hazardous waste, complying with PAR 1148.1 would not alter in any way how the affected facilities manage their hazardous wastes. Further, they would be expected to continue to manage any and all hazardous materials and hazardous waste in accordance with all applicable federal, state, and local rules and regulations.

VIII. f) No Impact. Health and Safety Code §25506 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 minimum 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. The existing facilities affected by the proposed project would typically already have their own emergency response plans in place and implementation of PAR 1148.1 would not be expected to require an update to any affected facility's emergency response plan. Thus, the proposed project is not expected to impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. As such, this impact issue will not be further analyzed.

VIII. g) No Impact. The proposed project is not expected to increase the existing risk of fire hazards in areas with flammable brush, grass, or trees since the affected oil and gas facilities are located at on existing industrial sites in urban areas where wildlands are not prevalent. In addition, no substantial or native vegetation typically exists on or near the affected facilities (specifically because they could be a fire hazard) so the proposed project is not expected to expose people or structures to wild fires. Thus, risk of loss or injury associated with wildland fires is not expected.

VIII. h) Less Than Significant Impact. The Uniform Fire Code and California 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, because businesses are required to report increases in the storage or use of flammable and otherwise hazardous materials, including any increased storage of alternative fuels such as LNG, CNG or LPG as part of utilizing alternative fuel workover rigs, to local fire departments. Local fire departments ensure that adequate permit conditions are in place to protect against potential risk of upset. Also, because the projected increase in diesel fuel needed to supply the vacuum trucks, generator sets, and delivery trucks is so small (e.g., 47 gallons per year for the vacuum trucks plus 200 gallons per project for the delivery trucks), increased on-site storage of

diesel fuel will not be needed as existing storage capacities should be sufficient. Similarly, because the projected increase in gasoline that will be needed to operate construction worker vehicles as part of installing monitoring equipment at affected facilities is also small (e.g., 108 gallons per project), increased on-site storage of gasoline will not be needed as this supply can be provided by existing gasoline fueling facilities.

As mentioned in the earlier discussion for section VIII a) & b), PAR 1148.1 may have the effect of reducing the amount of H2S vented to the atmosphere. Because H2S is explosive, a reduction in H2S emissions would lessen the current explosion hazards associated with the operation activities at oil and gas facilities. Thus, PAR 1148.1 may improve the existing fire risk of existing oil and gas operations.

Based upon the above considerations, significant hazards and hazardous materials impacts are not expected from implementing PAR 1148.1. 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?	☐	☐	☐	☑
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)?	☐	☐	☐	☑

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☑
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?	☐	☐	☐	☑
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?	☐	☐	☐	☑
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?	☐	☐	☐	☑
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?	☐	☐	☐	☑
h)	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☑

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☑

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

IX. a), b), c), d), g), h) & i) No Impact. PAR 1148.1 neither requires construction of new facilities nor requires physical modifications at existing facilities that would entail construction activities that would require water for dust mitigation. Instead, PAR 1148.1 would enhance monitoring and recordkeeping requirements for facilities subject to the rule. In the event that a facility is required to prepare and obtain approval of an Odor Mitigation Plan, the facility operator would be required to utilize a non-diesel workover rig, in lieu of a diesel-fueled

workover rig, if available and feasible. In addition, in the event of a well cellar that has been identified as a verified odor source that requires same day pump out, the facility operator would also be required to utilize a vacuum truck and if pump out is required during nighttime, a generator set to supply electricity to lights, if existing lighting is insufficient.

Since diesel-fueled workover rigs do not utilize water, non-diesel workover rigs would also be expected to not need water for their operation. Similarly, vacuum trucks and generator sets also do not need water for their operation. Thus, swapping out a diesel-fueled workover rig with a non-diesel workover rig at an affected facility subject to an Odor Mitigation Plan or utilizing a vacuum truck and generator set would not create an additional water demand and would not generate wastewater from simply complying with PAR 1148.1. Because PAR 1148.1 has no provision that would increase demand for water or increase the generation of wastewater, the proposed project would not require the construction of additional water resource facilities, increase the need for new or expanded water entitlements, or alter existing drainage patterns. For these same reasons the proposed project would not substantially deplete groundwater supplies. Consequently, the proposed project is not expected to interfere substantially with groundwater recharge. Therefore, no water demand impacts are expected as the result of implementing PAR 1148.1.

Further, PAR 1148.1 would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Since compliance with PAR 1148.1 does not involve water that would generate wastewater processes, there would be no change in the composition or volume of existing wastewater streams from the affected facilities. Thus, PAR 1148.1 is not expected to require additional wastewater disposal capacity, violate any water quality standard or wastewater discharge requirements, or otherwise substantially degrade water quality.

Since PAR 1148.1 project is not expected to generate significant adverse water quality impacts, no changes to existing wastewater treatment permits, for those facilities that have them, are expected to be necessary. As a result, it is expected that operators of affected facilities would continue to comply with existing wastewater treatment requirements of the applicable Regional Water Quality Control Boards or sanitation districts.

IX. e) No Impact. Once implemented, PAR 1148.1 is not expected to require additional workers at affected facilities. Further, the proposed project is not expected to involve construction activities and does not include the construction of any new housing so it would not place new housing in 100-year flood areas as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood delineation map. It is likely that most affected facilities are not located within a 100-year flood hazard area. Any affected facilities that may be located in a 100-year flood area could impede or redirect 100-year flood flows, but this would be considered part of the existing setting and not an effect of the proposed project. Since the proposed project would not require locating new facilities within a flood zone, it is not expected that implementation of the proposed project would expose people or property to any new known water-related flood hazards. As a result, PAR 1148.1 is not expected to expose people or structures to significant flooding risks. Accordingly, this impact issue will not be further evaluated in this Final ~~Draft~~ EA.

IX. f) No Impact. The proposed project does not require construction of new facilities in areas that could be affected by tsunamis. Of the oil and gas facilities affected by the proposed project, some are located near the Ports of Long Beach, Los Angeles, and San Pedro. The port areas are protected from tsunamis by the construction of breakwaters. Construction of breakwaters combined with the distance of each facility from the water is expected to minimize the potential impacts of a tsunami or seiche so that no significant impacts are expected. The proposed project does not require construction of facilities in areas that are susceptible to mudflows (e.g., hillside or slope areas). Existing affected facilities that are currently located on hillsides or slope areas may be susceptible to mudflow, but this would be considered part of the existing setting. As a result, the proposed project is not expected to generate significant adverse mudflow impacts. Finally, PAR 1148.1 will not affect in any way any potential flood hazards inundation by seiche, tsunami, or mud flow that may already exist relative to existing facilities. Accordingly, this impact issue will not be further evaluated in this Final ~~Draft~~ EA.

Based upon the aforementioned considerations, significant hydrology and water quality impacts are not expected from implementing PAR 1148.1. 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?	☐	☐	☐	☑
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?	☐	☐	☐	☑

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

X. a) No Impact. The proposed project would not require the construction of new facilities at new locations, but any physical effects (e.g., the swapping of some diesel-fueled workover rigs with non-diesel workover rigs) that will result from the proposed project, would occur at existing oil and gas facilities and would not be expected to go beyond existing boundaries. Thus,

implementing the proposed project would not result in physically dividing any established communities.

X. b) No Impact. There are no provisions in the proposed project 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 will be altered by the proposed project. Further, the proposed project would be consistent with the typical industrial setting of the affected facilities. The swapping of some diesel-fueled workover rigs with non-diesel workover rigs and the use of vacuum trucks and generator sets are expected to occur within the confines of the existing facilities. Further, the use of construction worker vehicles and delivery trucks will occur on established roadways. The proposed project would not affect in any way habitat conservation or natural community conservation plans, agricultural resources or operations, and would not create divisions in any existing communities. Further, no new development or alterations to existing land designations will occur as a result of the implementation of the proposed project. Therefore, present or planned land uses in the region will not be affected as a result of implementing the proposed project.

Based upon these considerations, significant land use and planning impacts are not expected from implementing PAR 1148.1. 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?	☐	☐	☐	☑
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?	☐	☐	☐	☑

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

XI. a) & b) No Impact. There are no provisions in PAR 1148.1 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.

Based upon these considerations, significant mineral resource impacts are not expected from implementing PAR 1148.1 and, thus, will not be further analyzed. 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?	☐	☐	☐	☑
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☑
c) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☑
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?	☐	☐	☐	☑

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

XII. a), b), c), & d) No Impact. The proposed project would not require the construction of new facilities at new locations, but any physical effects (e.g., the swapping of some diesel-fueled workover rigs with non-diesel workover rigs or the increased use of vacuum trucks and generator sets) that will result from the proposed project, would occur at existing oil and gas facilities and would not be expected to go beyond existing boundaries. The existing noise environment at each of the affected oil and gas facilities is typically dominated by noise from existing equipment onsite, vehicular traffic around the facilities, and trucks entering and exiting facility premises.

Operation of workover rigs generates some noise, but the noise profile would not be expected to be substantially different for diesel-fueled workover rigs than for non-diesel fueled workover rigs. Similarly, since the operation of vacuum trucks and generator sets at oil and gas facilities is part of current day-to-day activities that generate some noise, the noise profile of these equipment, will not change as a result of implementing the proposed project. Thus, noise from the proposed project is not expected to produce noise in excess of current operations at each of the existing facilities. In addition, any operator of an oil and gas facility that becomes subject to the requirements in an Odor Mitigation Plan and is subsequently required to utilize a non-diesel workover rig in lieu of a diesel-fired workover rig in accordance with PAR 1148.1 or is required to utilize a vacuum truck and generator set to pump out materials collected in a well cellar on an expedited basis would be expected to continue to comply with all existing noise control laws or ordinances. In particular, Occupational Safety and Health Administration (OSHA) and California-OSHA (Cal/OSHA) have established noise standards to protect worker health when noise levels exceed specified noise levels (see for example 29 CFR Part 1910). In addition, noise generating activities are required to be within the allowable noise levels established by the local noise ordinances, and thus are expected to be less than significant.

Even if some of the facilities affected by the proposed project are located at sites within an airport land use plan or within two miles of a public airport, the operation of non-diesel workover rigs in lieu of diesel-fueled workover rigs would not expose people residing or working in the project area to any increased excessive noise levels associated with airplanes.

Based upon these considerations, significant noise impacts are not expected from implementing PAR 1148.1, and thus, this topic will not be further analyzed. 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)?	☐	☐	☐	☑
b)	Displace substantial numbers of people or existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑

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

XIII. a) & b) No Impact. PAR 1148.1 neither requires construction of new facilities nor requires physical modifications at existing facilities that would entail construction activities. Instead, PAR 1148.1 would enhance monitoring and recordkeeping requirements for facilities subject to the rule. In the event that a facility is required to prepare and obtain approval of an Odor Mitigation Plan, the facility operator would be required to utilize a non-diesel workover rig, in lieu of a diesel-fueled workover rig, if available and feasible. The act of swapping a workover rig (from diesel to non-diesel) would not change the number of employees needed to operate the workover rig. Similarly, in the event that a vacuum truck and generator set is needed to pump out materials collected in a well cellar on an expedited basis, no additional employees would be needed to operate the equipment. However, in order to install monitoring equipment at the affected facilities, three temporary workers per facility may be needed to handle the install process but these workers are expected to be available from the local labor force. Thus, any compliance actions taken by an operator of an affected facility would not expected to involve the relocation of individuals, require new housing or commercial facilities, or change the distribution of the population. Human population within the jurisdiction of the SCAQMD is anticipated to grow regardless of implementing the proposed project. As a result, the proposed project is not anticipated to generate any significant adverse effects, either direct or indirect, on population growth in the district or population distribution.

Further, the proposed project is not expected to result in the creation of any industry that would affect population growth, directly or indirectly induce the construction of single- or multiple-family units, or require the displacement of people or housing elsewhere in the district.

Based upon these considerations, significant population and housing impacts are not expected from implementing PAR 1148.1, and thus, this topic will not be further analyzed. 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?	☐	☐	☐	☑
b) Police protection?	☐	☐	☐	☑
c) Schools?	☐	☐	☐	☑
d) Other public facilities?	☐	☐	☐	☑

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

XIV. a) & b) No Impact. PAR 1148.1 neither requires construction of new facilities nor requires physical modifications at existing facilities that would entail construction. Instead, PAR 1148.1 would enhance monitoring and recordkeeping requirements for facilities subject to the rule. In the event that a facility is required to prepare and obtain approval of an Odor Mitigation Plan, the facility operator would be required to utilize a non-diesel workover rig, in lieu of a diesel-fueled workover rig, if available and feasible. The act of swapping a workover rig (from

diesel to non-diesel), the increased use of vacuum trucks and generator sets, or the temporary use of construction worker vehicles and delivery trucks would not be expected to 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 impact to these existing services is anticipated.

XIV. c) & d) No Impact. As noted in the previous "Population and Housing" discussion, the proposed project 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 any swaps of diesel workover rigs for non-diesel workover rigs, the increased use of vacuum trucks and generator sets and operation of these equipment ~~non-diesel workover rigs~~ is not expected to require additional employees. However, as previously explained in Section XIII – Population and Housing, in order to install monitoring equipment at the affected facilities, three temporary workers per facility may be needed to handle the install process but these workers are expected to be available from the local labor pool. Therefore, there would be no increase in local population and thus, no impacts would be expected to local schools or other public facilities.

The proposed project could result in some facilities becoming subject to an Odor Mitigation Plan in the event of compliance problems. Besides SCAQMD's review and approval process associated with an Odor Mitigation Plan, there would be no need for other types of government services. Further, the proposed project 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. There would be no increase in population and, therefore, there would be no need for physically altered government facilities.

Based upon these considerations, significant public services impacts are not expected from implementing PAR 1148.1, and thus, this topic will not be further analyzed. 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?	☐	☐	☐	☑
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?	☐	☐	☐	☑

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

XV. a) & b) No Impact. As discussed earlier under the topic of "Land Use and Planning," there are no provisions in the PAR 1148.1 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 will be altered by the proposed requirements in PAR 1148.1. The proposed project would not increase the demand for or use of existing neighborhood and regional parks or other recreational facilities or require the construction of new or expansion of existing recreational facilities that might have an adverse physical effect on the environment because it would not directly or indirectly increase or redistribute population.

Based upon these considerations, significant recreation impacts are not expected from implementing PAR 1148.1, and thus, this topic will not be further analyzed. 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?	☐	☐	☐	☑
b) Comply with federal, state, and local statutes and regulations related to solid and hazardous waste?	☐	☐	☐	☑

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

XVI. a) & b) No Impact. PAR 1148.1 neither requires construction of new facilities nor requires physical modifications at existing facilities that would entail construction. Instead, PAR

1148.1 would enhance monitoring and recordkeeping requirements for facilities subject to the rule. In the event that a facility is required to prepare and obtain approval of an Odor Mitigation Plan, the facility operator would be required to utilize a non-diesel workover rig, in lieu of a diesel-fueled workover rig, if available and feasible. The act of swapping a workover rig (from diesel to non-diesel) would not be expected to alter or increase existing waste or generate new waste, either solid or hazardous. Similarly, because the use of additional vacuum trucks and generator sets would merely expedite the removal of odorous materials from any well cellar identified as a verified odor source, no increases in the amount or type of hazardous waste collected and disposed of would be expected to occur.

Operators of affected facilities subject to PAR 1148.1 would be expected to handle their existing waste in the same manner as the currently do, which depends on the classification of the waste and the type of landfill (e.g., Class II landfill for industrial waste or Class III landfill for municipal waste. A Class II landfill can handle wastes that exhibit a level of contamination not considered hazardous, but that are required by the State of California to be managed for disposal to a permitted Class II landfill. For this reason, Class II landfills are specially designed with liners to reduce the risks of groundwater contamination from industrial wastes, also known as California-regulated waste. Similarly, a Class III landfill can handle non-hazardous or municipal waste. Municipal waste is typically generated through day-to-day activities and does not present the hazardous characteristics of hazardous, industrial, or radioactive wastes. There are 32 active Class III landfills within the SCAQMD's jurisdiction, many of which have liners that can handle both Class II and Class III wastes. According to the Final Program EIR for the 2012 AQMP (SCAQMD, 2012), total Class III landfill waste disposal capacity in the district is approximately 116,796 tons per day.

Thus, implementation of PAR 1148.1 is not expected to require additional waste disposal capacity or interfere or undermine an oil and gas facility's ability to comply with existing federal, state, and local regulations for solid and hazardous waste handling and disposal.

Based upon these considerations, significant solid and hazardous waste impacts are not expected from implementing PAR 1148.1, and thus, this topic will not be further analyzed. 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?	☐	☐	☑	☐
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?	☐	☐	☑	☐
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?	☐	☐	☐	☑
d)	Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?	☐	☐	☐	☑
e)	Result in inadequate emergency access?	☐	☐	☐	☑
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?	☐	☐	☐	☑

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

XVII. a) & b) Less Than Significant Impact. PAR 1148.1 neither requires construction of new facilities nor requires physical modifications at existing facilities that would entail construction. Instead, PAR 1148.1 would enhance monitoring and recordkeeping requirements for facilities subject to the rule. In the event that a facility is required to prepare and obtain approval of an Odor Mitigation Plan, the facility operator would be required to utilize a non-diesel workover rig, in lieu of a diesel-fueled workover rig, if available and feasible. As explained in the following paragraphs, the act of swapping three diesel workover rigs to three non-diesel workover rigs would not be expected to cause a significant increase in traffic relative to the existing traffic load and capacity of the street systems surrounding the affected facilities. Similarly, a peak daily operational increase of three vacuum trucks would not be expected to cause a significant increase in traffic relative to the existing traffic load and capacity of the street systems surrounding the affected facilities. Further, a temporary increase of three construction worker vehicles and one delivery trip as part of installing monitoring systems at five facilities on a peak day or at 24 facilities within one six-month period would also not be expected to cause a significant increase in traffic relative to the existing traffic load and capacity of the street systems surrounding the affected facilities. Also, the proposed project is not expected to exceed, either individually or cumulatively, the current LOS of the areas surrounding the affected facilities as explained in the following paragraphs.

For a worst-case analysis, three non-diesel workover rigs with three drivers were assumed to replace three diesel workover rigs with three drivers. Even if it is assumed that all six workover rigs are being moved on the same day (which represents an average vehicle ridership equal to 1.0) not all of the workers would be driving to/from the same facility. In addition, if three additional vacuum trucks drive to and from three separate facilities on the same day and another three construction worker vehicles with one delivery truck drives to and from five separate facilities on the same (which also represents an average vehicle ridership equal to 1.0) not all of the workers would be driving to/from the same facility. For these reasons, it is unlikely that these vehicle trips would substantially affect the LOS at any intersection because the trips would be dispersed over a large area and the workers would not all arrive at the site at the exact same time. Therefore, the construction work force at each affected facility is not expected to significantly increase as a result of the proposed project.

Further, since new, permanent additional employees would not be needed to operate and maintain the replacement workover rigs, drive the vacuum trucks, construction worker vehicles, or delivery trucks, the work force at each affected facility is not expected to significantly increase as a result of implementing PAR 1148.1. As a result, no significant increases in traffic are expected.

XVII. c) No Impact. Workover rigs, vacuum trucks and generator sets are all currently in use by the oil and gas industry. As explained in Section I., the height profile and overall footprint of any non-diesel workover rig is not expected to be discernably different from a diesel-fueled workover rig because the height of the workover rig is dependent on the depth of the oil or gas well to be serviced. Similarly, oil and gas facilities currently use vacuum trucks and generator sets with low heights, so the slight increase in use of these equipment, would not alter the height profiles of these equipment. In addition, as explained in Section VIII c), the height of workover rigs, vacuum trucks and generator sets currently in operation does not interfere with plane flight paths consistent with Federal Aviation Regulation, Part 77. Thus, even if some facilities are located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, actions that would be taken to comply with the proposed project (e.g., the act of swapping a workover rig from diesel to non-diesel unit or using a vacuum truck and generator set) would not be expected to significantly influence or affect air traffic patterns or navigable air space. Thus, the proposed project would not result in a change in air traffic patterns including an increase in air traffic levels or a change in location that results in substantial safety risks. As such, this specific topic will not be further evaluated in the Final Draft EA.

XVII. d) & e) No Impact. The siting of each affected facility is consistent with surrounding land uses and traffic/circulation in the surrounding areas of the affected facilities. Thus, the proposed project is not expected to substantially increase traffic hazards, create incompatible uses at or adjacent to the affected facilities. Further, PAR 1148.1 is not expected to require a modification to circulation, thus, no long-term impacts on the traffic circulation system are expected to occur. The proposed project is not expected to involve the construction of any roadways, so there would be no increase in roadway design feature that could increase traffic hazards. Emergency access at each affected facility is not expected to be impacted by the proposed project because each affected facility is expected to continue to maintain their existing emergency access gates. Thus, these impacts will not be evaluated further in this Final Draft EA.

XVII. f) No Impact. Because the compliance activities that may occur in response to an Odor Mitigation Plan or the identification of a well cellar as a verified odor source will occur at existing industrial facilities, implementation of the proposed project (e.g., requiring the use of non-diesel workover rigs or requiring the expedited pump out of a well cellar) is not expected to conflict with policies supporting alternative transportation since the proposed project does not involve or affect alternative transportation modes (e.g., bicycles or buses).

Based upon these considerations, significant transportation and traffic impacts are not expected from implementing PAR 1148.1. 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?	☐	☐	☐	☑
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)	☐	☐	☑	☐
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☑	☐

Discussion

XVIII. a) No Impact. As discussed in the "Biological Resources" section, PAR 1148.1 is not expected to adversely affect plant or animal species or the habitat on which they rely because the workover rigs are operated at existing oil and gas facilities on industrial sites which have already been greatly disturbed and that currently do not support such habitats. Furthermore, the oil and gas facilities are located on industrial sites that are already either devoid of significant biological resources or whose biological resources have been previously disturbed. Lastly, special status plants, animals, or natural communities are not expected to be found within oil and gas facilities that would be subject to PAR 1148.1 because the affected sites are generally devoid of plants and natural communities that could support animals for fire safety reasons.

Further, as explained in Section X, the proposed project would not require the acquisition of land to comply with the provisions of PAR 1148.1. Also, while implementation of PAR 1148.1 may require some facilities to comply with an Odor Mitigation Plan and utilize a non-diesel workover rig in lieu of a diesel workover rig, the placement and movement of workover rigs are expected to occur entirely with the boundaries of existing oil and gas facilities. In addition, implementation of PAR 1148.1 may require some facilities to expedite the pump out of any well cellar identified as a verified odor source but this work will also occur entirely within the boundaries of existing oil and gas facilities. Similarly, implementing PAR 1148.1 would not require compliance activities to occur in areas where special status plants, animals, or natural communities and important examples of the major periods of California history or prehistory exist. As a result, implementing PAR 1148.1 is not expected to adversely affect in any way habitats that support riparian habitat, are federally protected wetlands, or are migratory corridors. Therefore, these areas would not be expected to be adversely affected by the proposed project.

XVIII. b) Less Than Significant Impact. As the Lead Agency under CEQA, the SCAQMD uses the same significance thresholds for project-specific and cumulative impacts for all environmental topics analyzed. Projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable; conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant[14].

Based on the preceding analyses in discussion topics I. through XVII., PAR 1148.1 is not expected to generate any project-specific significant adverse environmental impacts for the following reasons. None of the 17 environmental topics analyzed were checked as areas potentially affected by the proposed project (e.g., aesthetics, agriculture and forestry resources, air quality and GHG emissions, biological resources, cultural resources, energy, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, solid and hazardous waste, and, transportation and traffic). All 17 environmental topic areas were found to have 'No Impact' or 'Less Than Significant Impact' and would not be expected to make any contribution to potential cumulative impacts whatsoever. For the environmental topics checked as areas having a 'Less Than Significant Impact,' the analysis indicated that the proposed project impacts

[14] 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/hb/2003/030929a.html

would be less than significant because they would not exceed any project-specific significance thresholds.

With respect to air quality, no cumulative impacts are anticipated from the proposed project. Emissions resulting with implementation of the proposed project will be below the SCAQMD's thresholds for all criteria air pollutants. Although the proposed project may contribute additional air pollutants to an existing nonattainment area, these increases are below the SCAQMD air quality significance criteria. Therefore, the proposed project will not cause a significant environmental effect, nor result in an unavoidable cumulatively considerable contribution to an air quality impact[15].

Emissions relative to GHG emissions from the proposed project will also be below the SCAQMD's cumulatively considerable significance threshold for GHGs. Thus, no significant adverse impacts are expected, either individually or cumulatively.

With respect to energy, no cumulative energy impacts are expected because the potential increase in electricity demand and alternative fuels from the proposed project is well within available supplies. Therefore, the amount of electricity, diesel fuel, gasoline, and alternative fuel demand will not cause a significant adverse impact to existing energy generation and supplies. Therefore, no significant increase in energy is expected at the affected sites, and no cumulative energy impacts are expected.

Consistent with CEQA Guidelines §15064.7, a "lead agency may rely on a threshold of significance standard to determine whether a project will cause a significant environmental effect." Further, CEQA Guidelines §15064 (h)(1) requires that a "lead agency consider whether the cumulative impact is significant and whether the effects of the project are cumulatively considerable." Where a lead agency is examining a project with an incremental effect that is not cumulatively considerable, a lead agency need not consider the effect significant, but must briefly describe the basis for concluding that the incremental effect is not cumulatively considerable. As stated above, projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable; projects that do not exceed the project-specific significance thresholds are not considered to be cumulatively considerable. Therefore the proposed project's contribution to air quality and GHGs are not cumulatively considerable, and thus not significant. This conclusion is consistent with CEQA Guidelines §15064 (h)(4), which states, "The mere existence of cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable."

Based on these conclusions, incremental effects of the proposed project would be minor and, therefore, are not considered to be cumulatively considerable as defined by CEQA Guidelines §15064 (h)(1). Since impacts from the proposed project are not considered to be cumulatively considerable, the proposed project has no potential for generating significant adverse cumulative impacts.

[15] Refer also to *Citizens for Responsible Equitable Environmental Development c. City of Chula Vista* (2011) 197 Cal. App. 4th 327, 334 and *Rialto Citizens for Responsible Growth v. City of Rialto* (2102) 208 Cal. App. 4th 899 pertaining to the determination of significant impacts and whether a project is considered to be cumulatively considerable.

XVIII. c) Less Than Significant Impact. Based on the preceding analyses, PAR 1148.1 is not expected to cause adverse effects on human beings, either directly or indirectly. For the environmental topics of aesthetics, air quality and GHG emissions, energy, and, transportation and traffic, less than significant impacts from implementing PAR 1148.1 were identified.

The net effect of implementing PAR 1148.1 is to further prevent public nuisance and possible detriment to public health caused by exposure to VOC, TAC and TOC emissions from the operation and maintenance of oil and gas production facilities by enhancing compliance at these facilities. While the potential air quality benefits of enhancing compliance of oil and gas facilities in accordance with PAR 1148.1 cannot be quantified, for every diesel workover rig that is replaced with a non-diesel workover rig, the analysis in Table 2-5 demonstrates that an overall direct air quality and GHG benefit would be expected. In the event that a vacuum truck and generator set is needed to pump out materials collected in a well cellar on an expedited basis, Table 2-6 shows that while there may be slight increases in criteria pollutant and GHG emissions, the potential increases are well below the significance thresholds. Similarly, while there may be a need for some facilities to install monitoring equipment, the emission calculations as summarized in Tables 2-7 and 2-8 show less than significant increases in construction emissions. Further, the prevention of future releases of VOC, TAC and TOC emissions via the enhanced compliance requirements in PAR 1148.1, less VOC, TAC and TOC emission release will not only reduce odors but assist the SCAQMD's progress in attaining and maintaining the ambient air quality standards for ozone.

Based on the discussion in items I through XVIII, the proposed project is not expected to have the potential to cause significant adverse environmental effects to any environmental topic.

APPENDIX A

PROPOSED AMENDED RULE 1148.1 – OIL AND GAS PRODUCTION WELLS

In order to save space and avoid repetition, please refer to the latest version of Proposed Amended Rule 1148.1 located elsewhere in the Governing Board Package. The version of Proposed Amended Rule 1148.1 that was circulated with the Draft EA and released on April 29, 2015 for a 30-day public review and comment period ending May 28, 2015 was identified as "par1148-1-pw.docx."

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 calling (909) 396-2039.

APPENDIX B

ASSUMPTIONS AND CALCULATIONS

Emission Factors for Diesel Fuel Consumed (lb/thousand gallons except for CO2eq)

Diesel Burned (gal/hr)	Operating Schedule per Rig (hr/yr)	NOx (lb/1,000 gallons)	VOC (lb/1,000 gallons)	CO (lb/1,000 gallons)	SOx* (lb/1,000 gallons)	PM10 (lb/1,000 gallons)	CO2eq^ (metric tons/yr/rig)
4.2	3,000	438.4	10.8504	116.45	6.9185	7.8501	59.31

* Corrected for 0.05% sulfur.

^CARB, 2007 Oil and Gas Industry Survey Results, Final Report (Revised), Table 7-3, October 2013.

No. of Workover Rigs in LA, OR, RV, & SB Counties in 2015	**Workover Rig Emissions**	**NOx (lb/day)**	**VOC (lb/day)**	**CO (lb/day)**	**SOx (lb/day)**	**PM10 (lb/day)**	**PM2.5# (lb/day)**	**CO2eq (metric tons/yr)**
68	for 68 rigs	1,029.10	25.47	273.35	16.24	18.43	16.95	4,033.08
	for 1 rig	15.13	0.37	4.02	0.24	0.27	0.25	59.31
	for 3 rigs	45.40	1.12	12.06	0.72	0.81	0.75	177.93
	for 65 rigs (after 3 rigs are replaced with electric or alt fuel (lb/day)	983.70	24.35	261.29	15.52	17.61	16.21	3,855.15

SCAQMD, Final –Methodology to Calculate Particulate Matter (PM) 2.5and PM 2.5 Significance Thresholds, October 2006.
Table A, PM2.5 Fraction of PM10 for off-road diesel-fueled equipment.

Worksheet B-2: Diesel Delivery Trips

Baseline Diesel Fuel Deliveries to Los Angeles, Orange, Riverside and San Bernardino Counties for fueling 68 rigs **387,748 gallons per year** **8,500 gallons hauled per truck** **46 trucks/year**

On-Road Equipment Type	Fuel	Number Needed per year	Number Needed per day	Round- trip Distance (miles/ delivery)	Mileage Rate (miles/ gallon)	2015 Mobile Source Emission Factors							
						VOC (lb/mile)	CO (lb/mile)	NOx (lb/mile)	SOx (lb/mile)	PM10 (lb/mile)	PM2.5 (lb/mile)	CO2 (lb/mile)	CH4 (lb/mile)
Offsite (Heavy-Heavy Duty Fuel Delivery Truck)	diesel	46	4	50	4.89	0.0018	0.0077	0.0212	0.00004	0.0010	0.0009	4.2090	0.0001

Baseline Combustion Emissions from Diesel Fuel Delivery Trucks	VOC (lb/day)	CO (lb/day)	NOx (lb/day)	SOx (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2 (lb/yr)	CH4 (lb/yr)	CO2eq* (lb/yr)	CO2eq* (MT/yr)
Offsite (Heavy-Heavy Duty Fuel Delivery Truck)	0.36	1.53	4.25	0.01	0.21	0.18	9,600	0.19	9,604	4.36
TOTAL	**0**	**2**	**4**	**0**	**0**	**0**	**9,600**	**0**	**9,604**	**4**

Equation: No. of Vehicles x Emission Factor (lb/mile) x No. of Round-Trips/Day x Round-Trip length (mile) = Offsite Construction Emissions (lb/day)

*1 metric ton (MT) = 2,205 pounds

Diesel Fuel to operate Fuel Delivery Trucks (Baseline)	Equipment Type	Total Miles Driven (miles/year)	Mileage Rate (miles/gal)	Total Diesel Fuel Usage (gal/year)
Offsite (Heavy-Heavy Duty Fuel Delivery Truck)	Fuel Delivery Truck (HHD)	2,281	4.89	11,153
TOTAL Diesel Fuel needed to operate 46 Diesel Tanker Trucks				**11,153**

Worksheet B-2: Diesel Delivery Trips

Reduction in Diesel Fuel Deliveries to Los Angeles, Orange, Riverside and San Bernardino Counties for fueling 65 rigs (Reduction of 37,800 gallons per year - 5 trucks per year less)

349,948 gallons per year | **8,500 gallons hauled per truck** | **41 trucks/year**

Construction On-Road Equipment Type	Fuel	Number Needed per year	Number Needed per day	Round- trip Distance (miles/ delivery)	Mileage Rate (miles/ gallon)	2015 Mobile Source Emission Factors VOC (lb/mile)	CO (lb/mile)	NOx (lb/mile)	SOx (lb/mile)	PM10 (lb/mile)	PM2.5 (lb/mile)	CO2 (lb/mile)	CH4 (lb/mile)
Offsite (Heavy-Heavy Duty Fuel Delivery Truck)	diesel	41	4	50	4.89	0.0018	0.0077	0.0212	0.00004	0.0010	0.0009	4.2090	0.0001

PAR 1148.1 Combustion Emissions from Diesel Fuel Delivery Trucks	VOC (lb/day)	CO (lb/day)	NOx (lb/day)	SOx (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2 (lb/yr)	CH4 (lb/yr)	CO2eq* (lb/yr)	CO2eq* (MT/yr)
Offsite (Heavy-Heavy Duty Fuel Delivery Truck)	0.36	1.53	4.25	0.01	0.21	0.18	8,664	0.17	8,668	3.93
TOTAL	**0**	**2**	**4**	**0**	**0**	**0**	**8,664**	**0**	**8,668**	**4**

Equation: No. of Vehicles x Emission Factor (lb/mile) x No. of Round-Trips/Day x Round-Trip length (mile) = Offsite Construction Emissions (lb/day)

*1 metric ton (MT) = 2,205 pounds

Diesel Fuel to operate Fuel Delivery Trucks (after PAR 1148.1)	Equipment Type	Total Miles Driven (miles/year)	Mileage Rate (miles/gal)	Total Diesel Fuel Usage (gal/year)
Workers' Vehicles - Offsite Delivery/Haul	Fuel Delivery Truck (HHD)	2,059	4.89	10,066
TOTAL Diesel Fuel needed to operate 41 Diesel Tanker Trucks				**10,066**

Sources:

On-Road Mobile Emission Factors (EMFAC 2007 v2.3), Scenario Year 2015

http://www.aqmd.gov/ceqa/handbook/onroad/onroad.html/onroadEF07_26.xls

http://www.aqmd.gov/ceqa/handbook/onroad/onroad.html/onroadEFHHDT07_26.xls

Net Difference Between Baseline and PAR 1148.1 Combustion Emissions from Diesel Fuel Delivery Trucks - Peak Day	VOC (lb/day)	CO (lb/day)	NOx (lb/day)	SOx (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)
Baseline - 4 trucks/day peak	0.36	1.53	4.25	0.01	0.21	0.18
PAR 1148.1 - 4 trucks per day peak	0.36	1.53	4.25	0.01	0.21	0.18
NET DIFFERENCE	**0**	**0**	**0**	**0**	**0**	**0**

Worksheet B-2: Diesel Delivery Trips

Net Difference Between Baseline and PAR 1148.1 Combustion Emissions from Diesel Fuel Delivery Trucks - Annual	VOC (lb/yr)	CO (lb/yr)	NOx (lb/yr)	SOx (lb/yr)	PM10 (lb/yr)	PM2.5 (lb/yr)	CO2 (lb/yr)	CH4 (lb/yr)	CO2eq* (lb/yr)	CO2eq* (MT/yr)
Baseline - 46 trucks per year	4.07	17.49	48.42	0.09	2.39	2.01	9,600.24	0.19	9,604.24	4.36
PAR 1148.1 - 41 trucks per year	3.68	15.79	43.70	0.08	2.16	1.81	8,664.35	0.17	8,667.96	3.93
NET DIFFERENCE	**0.40**	**1.71**	**4.72**	**0.01**	**0.23**	**0.20**	**935.89**	**0.02**	**936.28**	**0.42**

Net Difference Between Baseline and PAR 1148.1 Diesel Fuel Needed to Operate Delivery Trucks - Annual	Total Miles Driven (miles/year)	Total Diesel Fuel Usage (gal/year)
TOTAL Diesel Fuel needed to operate 46 Diesel Tanker Trucks	2,281	11,153
TOTAL Diesel Fuel needed to operate 41 Diesel Tanker Trucks	2,059	10,066
NET DIFFERENCE	222	1,087

Electricity demand if 3 diesel workover rigs are replaced with 3 electric workover rigs

Number of Electric Workover Rigs	Max Rating (hp)	Max Rating (kw)	Load Factor	Peak Daily Operating Schedule (hr/day)	Peak Annual Operating Schedule (hr/yr)	Diesel Use (gal/yr)^	Electricity Use (kWh/yr)	CO2eq (MT/yr)	Peak Electricity Use (kWh/day)	Electricity Use (MWh/day)	Instantaneous Electricity Peak Day (MW)
1	1,000	746	0.75	24	3,000	12,600	340.2	0.17	3	0.0027	0.0001
3	1,000	746	0.75	24	3,000	37,800	1020.6	0.51	8	0.0082	0.0003

Note: Instantaneous Electricity Equation: 40 MWh/day x 1 work day/24 hr = 1.68 MW
^CARB, 2007 Oil and Gas Industry Survey Results, Final Report (Revised), Table 7-3, October 2013.
1 gallon diesel - 0.027 kwh electricity
California Energy Commission, Energy Almanac, Gasoline Gallon Equivalents (GGE) for Alernative Fuels, accessed April 24, 2015
http://www.energyalmanac.ca.gov/transportation/gge.html

GHG Emission Factors:
1 metric ton (MT) = 2,205 pounds
1,110 lb CO2eq/MWh for electricity when source of power is not identified
(CEC, September 6, 2007 - Reporting and Verification of Greenhouse Gas Emissions in the Electricity Sector)

Worksheet B-4: Alternative Fuel Use

Alternate Fuel Demand: If 3 diesel workover rigs are replaced with 3 alternate fuel workover rigs

Number of Workover Rigs	Max Rating (hp)	Max Rating (kw)	Load Factor	Peak Daily Operating Schedule (hr/day)	Peak Annual Operating Schedule (hr/yr)	Diesel Use (gal/yr)^	LNG Use (gal/yr)	CNG Use (therm/yr)	CNG Use (galyr)	LPG Use (gal/yr)
1	1,000	746	0.75	24	3,000	12,600	7,031	9,185	68,716	8,228
3	1,000	746	0.75	24	3,000	37,800	21,092	27,556	206,148	24,683

1 therm = 7.481 gallons = 1 cf

1 gallon diesel = 0.558 gallons LNG = 0.729 therms CNG = 0.653 gallons LPG

California Energy Commission, Energy Almanac, Gasoline Gallon Equivalents (GGE) for Alernative Fuels, accessed April 24, 2015
http://www.energyalmanac.ca.gov/transportation/gge.html

Emission Factors for Alternative Fuel Consumed (g/gal except for CO2, N20, CH4 & CO2eq)*

Type of Alternative Fuel Burned	Amount of Alternative Fuel Burned per day per rig (gallons)	NOx (g/gal)	VOC (g/gal)	PM10 (g/gal)	CO2 (lb/MMscf)	CH4 (lb/MMscf)	N2O (lb/MMscf)	CO2eq (lb/MMscf)
LNG	56.25	3.7	1.17	0.185	120,000	2.3	0.64	120246.7
CNG	549.73	3.7	1.17	0.185	120,000	2.3	0.64	120246.7
LPG	65.82	3.7	1.17	0.185	120,000	2.3	0.64	120246.7

*Carl Moyer Guidance, Emission Factors for Alternative Fuel Heavy-Duty Engines, Appendix D, Table D-2, July 2014.
http://www.arb.ca.gov/msprog/moyer/guidelines/current.htm

GHG Emission Factors:
120,000 lb CO2/MMscf fuel burned
0.64 lb N20/MMscf fuel burned
2.3 lb CH4/MMscf fuel burned
CO2eq = CO2 + 21*CH4 + 310*N2O

LNG Workover Rig Emissions	NOx (lb/day)	VOC (lb/day)	PM10 (lb/day)	PM2.5# (lb/day)	CO2eq (MT/yr)
for 1 rig	0.46	0.15	0.02	0.02	0.05
for 3 rigs	1.38	0.44	0.07	0.06	0.15

1 g= 453.6 lb

1 metric ton (MT) = 2,205 pounds

CNG Workover Rig Emissions	NOx (lb/day)	VOC (lb/day)	PM10 (lb/day)	PM2.5# (lb/day)	CO2eq (MT/yr)
for 1 rig	4.48	1.42	0.22	0.21	0.50
for 3 rigs	13.45	4.25	0.67	0.62	1.50

LPG Workover Rig Emissions	NOx (lb/day)	VOC (lb/day)	PM10 (lb/day)	PM2.5# (lb/day)	CO2eq (MT/yr)
for 1 rig	0.54	0.17	0.03	0.02	0.06
for 3 rigs	1.61	0.51	0.08	0.07	0.18

SCAQMD, Final –Methodology to Calculate Particulate Matter (PM) 2.5and PM 2.5 Significance Thresholds, October 2006. Table A, PM2.5 Fraction of PM10 for off-road diesel-fueled equipment.

Additional vacuum trucks needed to conduct same day well cellar pump out if verified odor source **3 trucks/year** **Peak Day: 3 trucks/day**

On-Road Equipment Type	Fuel	Number Needed per year	Number Needed per peak day	Round- trip Distance (miles/ delivery)	Mileage Rate (miles/ gallon)	2015 Mobile Source Emission Factors							
						VOC (lb/mile)	CO (lb/mile)	NOx (lb/mile)	SOx (lb/mile)	PM10 (lb/mile)	PM2.5 (lb/mile)	CO2 (lb/mile)	CH4 (lb/mile)
Offsite (Heavy-Heavy Duty Vacuum Truck)	diesel	3	3	50	4.89	0.0018	0.0077	0.0212	0.00004	0.0010	0.0009	4.2090	0.0001

Peak Combustion Emissions from Additional Vacuum Trucks	VOC (lb/day)	CO (lb/day)	NOx (lb/day)	SOx (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2 (lb/yr)	CH4 (lb/yr)	CO2eq* (lb/yr)	CO2eq* (MT/yr)
Offsite (Heavy-Heavy Duty Vacuum Truck)	0.27	1.15	3.18	0.01	0.16	0.13	631	0.01	632	0.29
TOTAL	**0**	**1**	**3**	**0**	**0**	**0**	**631**	**0**	**632**	**0**

Equation: No. of Vehicles x Emission Factor (lb/mile) x No. of Round-Trips/Day x Round-Trip length (mile) = Offsite Construction Emissions (lb/day)

*1 metric ton (MT) = 2,205 pounds

`	Equipment Type	Total Miles Driven (miles/day)	Total Miles Driven (miles/year)	Mileage Rate (miles/gal)	Total Diesel Fuel Usage (gal/day)	Total Diesel Fuel Usage (gal/year)
Offsite (Heavy-Heavy Duty Fuel Delivery Truck)	Vacuum Truck (HHD)	150	150	4.89	30.67	30.67
TOTAL Diesel Fuel needed to operate 3 additional vacuum trucks					**31**	**31**

Additional temporary lighting for potential nighttime operations of vacuum trucks

Off-Road Equipment Type	Fuel	Number Needed per year	Number Needed per peak day	Operating Schedule (hours/day)	2015 Mobile Source Emission Factors							
					VOC (lb/hr)	CO (lb/hr)	NOx (lb/hr)	SOx (lb/hr)	PM10 (lb/hr)	PM2.5 (lb/hr)	CO2 (lb/hr)	CH4 (lb/hr)
Generator Set to support portable lighting equipment (composite)	diesel	3	3	2	0.0018	0.0077	0.0212	0.00004	0.0010	0.0009	4.2090	0.0001

Peak Combustion Emissions from Operating generator sets	VOC (lb/day)	CO (lb/day)	NOx (lb/day)	SOx (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2 (lb/yr)	CH4 (lb/yr)	CO2eq* (lb/yr)	CO2eq* (MT/yr)
Generator Set to support portable lighting equipment (composite)	0.0107	0.0460	0.1274	0.0002	0.0063	0.0053	25.2541	0.0005	25.2647	0.0115
TOTAL	**0.01**	**0.05**	**0.13**	**0.00**	**0.01**	**0.01**	**25.25**	**0.00**	**25.26**	**0.01**

Equation: No. of Vehicles x Emission Factor (lb/mile) x No. of Round-Trips/Day x Round-Trip length (mile) = Offsite Construction Emissions (lb/day)

*1 metric ton (MT) = 2,205 pounds

Incremental Increase in Diesel Fuel Usage From Operating Generator Sets to support portable lighting equipment	Total Operating Hours/day (peak)	Total Operating Hours/year	Diesel Fuel Usage (gal/hr)	Total Diesel Fuel Usage - Peak Day (gal/day)	Total Diesel Fuel Usage (gal/yr)
Operation of Generator Sets	6	6	2.68	16.08	16.08
TOTAL Diesel Fuel needed to operate 3 additional generator sets				16	16

Monitoring System Installation in last six months of Year 2015

Activity	No. of Facilities affected	No. of Facilities under construction on a peak day	Days of construction per system installation	Total Days of Construction per facility	Crew Size per installation
Construction	24	5	1.0	1.00	3
			Total	**1.00**	

Construction On-Road Equipment Type	Fuel	Number Needed	Round- trip Distance (miles/day)	Mileage Rate (miles/ gallon)	2015 Mobile Source Emission Factors VOC (lb/mile)	CO (lb/mile)	NOx (lb/mile)	SOx (lb/mile)	PM10 (lb/mile)	PM2.5 (lb/mile)	CO2 (lb/mile)	CH4 (lb/mile)
Offsite (Construction Worker Vehicle)	gasoline	3	30	20	0.0007	0.0061	0.0006	0.00001	0.0001	0.0001	1.1019	0.0001
Offsite (Delivery Truck - Medium Duty)	diesel	1	50	6	0.0017	0.0117	0.0129	0.00003	0.0005	0.0004	2.8125	0.0001

Incremental Increase in Combustion Emissions from On-Road Construction Vehicles	VOC (lb/day)	CO (lb/day)	NOx (lb/day)	SOx (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2 (lb/day)	CH4 (lb/day)	CO2eq* (lb/day)	CO2eq* (MT/project)
Offsite (Construction Worker Vehicle)	0.06	0.55	0.05	0.0010	0.0083	0.0054	99.17	0.01	99.29	0.0015
Offsite (Delivery Truck)	0.09	0.58	0.64	0.0014	0.0252	0.0206	140.62	0.00	140.71	0.0021
SUBTOTAL	**0.15**	**1.14**	**0.70**	**0.0023**	**0.0335**	**0.0260**	**239.80**	**0.01**	**239.99**	**0.0036**

Equation: No. of Vehicles x Emission Factor (lb/mile) x No. of Round-Trips/Day x Round-Trip length (mile) = Offsite Construction Emissions (lb/day)

*SCAQMD Regulation XXVII - Climate Change, Rule 2700 - General, Table 1 - Global Warming Potentials, CO2 = 1 and CH4 = 21

*1 metric ton (MT) = 2,205 pounds; GHGs from temporary construction activities are amortized over 30 years

Construction Emissions Summary	VOC (lb/day)	CO (lb/day)	NOx (lb/day)	SOx (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO2 (lb/day)	CH4 (lb/day)	CO2eq (lb/day)	CO2eq (MT/project*)
Combustion Emissions from On-Road Construction Vehicles	0.15	1.14	0.70	0.00	0.0335	0.0260	239.80	0.01	239.99	0.0036
TOTAL for 1 Facility	**0**	**1**	**1**	**0**	**0**	**0**	**240**	**0**	**240**	**0**
Significance Threshold	75	550	100	150	150	55	n/a	n/a	n/a	n/a
Exceed Significance?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**n/a**	**n/a**	**n/a**	**n/a**

*1 metric ton (MT) = 2,205 pounds; GHGs from temporary construction activities are amortized over 30 years

											CO2eq (MT/for 24 facilities*)
TOTAL for 5 Facilities Overlapping Construction in 2015 on a peak day	**0.73**	**5.69**	**3.48**	**0.01**	**0.17**	**0.13**	**1198.99**	**0.05**	**1199.97**	**0.02**	0.09
Significance Threshold	75	550	100	150	150	55	n/a	n/a	n/a	n/a	10,000
Exceed Significance?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**	**n/a**	**n/a**	**n/a**	**n/a**	**NO**

*1 metric ton (MT) = 2,205 pounds; GHGs from temporary construction activities are amortized over 30 years

Incremental Increase in Fuel Usage From Construction Equipment and Workers' Vehicles	Total Construction Hours for Project	Equipment Type	Total Diesel Fuel Usage (gal/day)	Total Gasoline Fuel Usage (gal/day)
Workers' Vehicles - Commuting	N/A	Light-Duty Vehicles	N/A	4.50
Workers' Vehicles - Offsite Delivery/Haul	N/A	Delivery Truck	8.33	N/A
TOTAL for 1 Facility			**8**	**5**
TOTAL for 5 Facilities Overlapping Construction in 2015			**42**	**23**

	Total Diesel Fuel Usage (gal/project)	Total Gasoline Fuel Usage (gal/project)
TOTAL for all 24 Facilities	**200**	**108**

Source:

On-Road Mobile Emission Factors (EMFAC 2011), Scenario Year 2015

http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/emfac-2007-(v2-3)-emission-factors-(on-road)

APPENDIX C

COMMENT LETTERS RECEIVED ON THE DRAFT EA AND RESPONSES TO COMMENTS

INTRODUCTION

The Draft EA was released for a 30-day public review and comment period from April 29, 2015 to May 28, 2015 which identified the topics of air quality and greenhouse gases, and energy as environmental topic areas that may be adversely affected by the proposed project, but after completing the analysis, were shown to have less than significant impacts. The SCAQMD received two comment letters from the public regarding the analysis in the Draft EA during the public comment period.

The comment letters have been numbered (see Table C-1 below) and individual comments within each letter have been bracketed and numbered. Following each comment letter is SCAQMD's responses to the individual comments.

Table C-1
List of Comment Letters Received Relative to the Draft EA

Comment Letter	Commentator
#1	Western States Petroleum Association
#2	Joyce Dillard

Western States Petroleum Association
Credible Solutions • Responsive Service • Since 1907

Sandra Burkhart
Senior Coastal Coordinator

Comment Letter 1

May 28, 2015

Ms. Barbara Radlein
c/o Office of Planning, Rule Development and Area Sources
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765-4178

Subject: Notice of Completion of a Draft Environmental Assessment –
Proposed Amended Rule 1148.1 – Oil and Gas Production Wells

Dear Ms. Radlein:

Western States Petroleum Association (WSPA) appreciates the opportunity to comment on the abovementioned Draft EA. WSPA is a non-profit trade association representing companies that explore for, produce, refine, transport and market petroleum, petroleum products, natural gas and other energy supplies in California and four other western states. 1-1

Overall, WSPA is concerned that the amended regulation does nothing to improve air quality in the South Coast Air Basin. Further, the regulation adds voluminous requirements, paperwork, notification and compliance testing while there has been no determination of an odor nuisance from this source category and there are already odor nuisance regulations in place should the need arise. The regulation is duplicative and does not further the agency's mission of attaining Ambient Air Quality Standards in any way. 1-2

Draft EA Specific Comments

The comments below highlight specific concerns about the amendment and the associated Draft EA. 1-3

The document states that "By statute, the SCAQMD is required to adopt an air quality management plan (AQMP) demonstrating compliance will all federal and state ambient air quality standards for the district. Furthermore, the SCAQMD must adopt rules and regulations that carry out the AQMP." WSPA agrees with this assertion but is unclear how this amendment carries out the AQMP or the agency's mission in any way. *There are no emission reductions associated with the amendment.* 1-4

The introduction presents background information about the health effects of VOCs including "coughing, sneezing, headaches…." *Again, it is unclear what the relevance of this information is as there are no emission reductions associated with this amendment.* 1-5

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The Draft EA states that the regulation is being revisited "*due to an increased awareness of oil and gas production wells by the community….*" Please clarify what this means and how it has any relevance to the necessity of a regulation amendment. There is no evidence to suggest that this industry has had a problem in the past or created a significant odor nuisance. 1-6

"To prevent public odor nuisance and possible detriment to public health caused by exposure to VOC, TAC, and total organic compound emissions (TOC) from the operation and maintenance of oil and gas production facilities…." (page 1-1) Again, there appears to be no emission inventory presented to suggest that there are any emission reductions associated this amendment so this statement is misleading and erroneous. 1-7

The California Environmental Quality Act (CEQA) defines a "Project" as the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment. WSPA requests clarification as to what the physical change on the environment is as a result of the project. SCAQMD staff indicated at the Stationary Source Committee that the proposed amendments result in emission reductions; however, there is no inventory provided to allow for an adequate analysis. 1-8

The document states that "To date, there are 473 oil and gas production facilities operating within SCAQMD's jurisdiction that are either currently subject to Rule 1148.1 or registered via Rule 222." Of these facilities, District staff indicated that more than 1,000 wells were drilled throughout the last twelve months. It is further WSPA's understanding that there were no violations issued to this industry throughout the last twelve months. Therefore, the necessity of this amendment is unclear. 1-9

Please clarify that in addition to the list of regulations subject to this industry, oil and gas production facilities are also subject to Rule 402 – Nuisance. This regulation is already being complied with by this industry making the rule amendment duplicative and unnecessary. 1-10

"This subdivision proposes clarifications that include the reduction of TAC and TOC emissions as contaminants, in addition to VOCs, that will contribute to the overall emission reduction goal." (page 1-14).

Page 2-4 states, "PAR 1148.1 is undergoing amendments in order to further prevent public nuisance and possible detriment to public health caused by exposure to VOC, TAC and TOC emissions from the operation and maintenance of oil and gas production facilities."

Again, if there are emission reductions associated with the proposed amendments, they should be quantified and included herein. If there are no emission reductions associated with the amendment, statements such as the abovementioned need to be corrected as they are misleading in nature. 1-11

WSPA is unclear about the installation of a rubber grommet as part of a maintenance or drill piping replacement activity and its relevance to a potential odor nuisance. 1-12

Please clarify what instrumentation is being used to determine the occurrence of each confirmed odor event. 1-13

Table 1-1 – Proposed Odor Monitoring and Mitigation Requirements, lists the requirement of an alternative fuel or electric powered workover rig. This table's title is misleading as there are allegedly no mitigation measures associated with this Draft EA nor are there any significant adverse environmental impacts. 1-14

Appendix B in the Draft EA highlights emission reductions that appear to be exclusive to the requirement related to the electric workover rig. It is WSPA's understanding that this requirement has been removed from 1-15

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the proposed amended regulation. If this is the case, potential emission reductions associated with this proposed amendment were the premise for the entire analysis. WSPA respectfully requests that a new emission inventory be developed and that this document be recirculated so that the public has sufficient time to review this significant new information presented therein. 1-15 cont.

Table 1-1 also lists leak detection and repair (LDAR) requirements. The document accurately states that LDAR requirements are contained in Rule 1173. However, this rule is not the subject of this analysis nor is it being amended at this time. It is unclear why it is being referenced and why a change to Rule 1173 would be reflected in Rule 1148.1. 1-16

Air Quality

There are two methods of piping controls listed as Mitigation Plan Improvement Measures in the Staff Report as well as the Draft EA. It is unclear how enclosures or tarping has anything to do with reducing odor. Further, if enclosure is a compliance option, why is the analysis of enclosure completely missing from the Draft EA? The Draft EA states that *"Because of the available compliance options for storing removed drill piping and drill rods, the analysis in this Draft EA assumes that facility operators would not choose to construct new storage areas or modify existing storage areas when a tarp can be used instead. Thus, the proposed project would not promote the construction of new facilities or structures nor would it cause construction activities to occur at existing facilities."* (page 2-4) 1-17

The rule specifically lists an enclosed structure as a potential compliance option but no environmental analysis is provided. CEQA requires that all indirect environmental impacts be evaluated that result from the proposed project. WSPA is further unclear what measures were taken to determine "that facility operators would not choose to construct new storage areas…." Which facilities were surveyed or questioned relative to their compliance determination under this clause? The analysis should have conservatively assumed that even a portion of the facilities would choose this option and the indirect impacts should have been evaluated. This analysis would have demonstrated that the proposed amendments have potential adverse environmental impacts associated with the construction of storage units to house piping. 1-18

The Staff Report indicates that covering drill rods and piping with plastic tarping will be the preferred option; again it unclear how this determination was made. However, the staff report further indicates that "each potentially affected facility would use up to six tarps, twice a year for six wells." (Staff Report page 21) Using this estimate provided, it appears that 473 facilities would each need six tarps twice a year. This would result in the delivery and installation of 5,676 tarps per year throughout the Basin. Since drilling schedules and facilities vary greatly, it would have to be assumed that these tarps may be delivered individually as needed. Therefore, it is again unclear why there is no analysis of the secondary air quality impacts associated with these tarp deliveries. This analysis would indicate that there are adverse environmental impacts associated with the project and no air quality benefits. 1-19

WSPA takes exception to several unsubstantiated statements in this section. First, that the rule amendment seeks to *"minimize the potential for odor and nuisance and odor impacts to local residents and sensitive receptors that are often located nearby from ongoing operations that do not include drilling."* Again, there is no history of nuisance impacts from this sector nor has any substantiation been provided in the Staff Report. WSPA is also requesting substantiation as to how SCAQMD knows that these facilities are often located nearby sensitive receptors. These statements are misleading particularly when there is no evidence that any sensitive receptors have even found this source category to be a nuisance. 1-20

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Another sentence that requires revision or clarification states that *"….the proposed project will continue to assist the SCAQMD's progress in attaining and maintaining the ambient air quality standards for ozone."* This statement is completely false and needs to be removed from the Draft EA. 1-21

Another statement that is concerning to WSPA says, *"PAR 1148.1 neither requires the construction of new facilities nor requires physical modifications at existing facilities that would entail construction activities."* The proposed amended regulation specifically requires an enclosure for used rods. CEQA requires an analysis of this mandatory component and we request that emissions from the construction of these structures being included in the Final EA. 1-22

The utilization of an electric workover rig assumed in the analysis has been removed from the regulation. The Final EA needs to reflect that Appendix B and Tables 2-2, 2-3 2-4 and 2-5 are no longer valid and there are no emission reductions associated with this amendment. As such, there are now no environmental benefits associated with the amendment yet there are several potential adverse environmental impacts that have yet to be adequately addressed. 1-23

The air quality analysis indicates that *"past compliance data for Rule 1148.1 facilities has shown that only three facilities experienced more than three confirmed odor events…."* There are no dates indicated to determine when these confirmed odor incidents occurred but WSPA knows of no odor incidents within the last year at its more than 473 facilities. This begs the question as to the necessity of this amendment. One of the mandatory findings under California Health and Safety Code Section 40727 is a finding of Necessity. WSPA is unclear how this finding can possibly be made when there is no evidence to suggest there is a nuisance problem that needs to be addressed. 1-24

Although it is WSPA's understanding that the electric workover rig component of the amendment has been removed, the statement that *"facility operators could choose to install electricity generating equipment in order to support the operation of an electric workover rig"* is concerning. The SCAQMD finds it more environmentally beneficial to generate more power in order to reduce potential odor impacts that have not occurred nor have they occurred in the past. If a new power generating source is required as a result of this regulation, it should have been evaluated under this CEQA analysis. It is part of this rule amendment and not including it is considered "piece mealing" under CEQA and prohibited. 1-25

Any reference to an electric work over rig or clean fuel work over should be removed if this component has been taken out of the amendment. If this component remains in the amendment, this analysis is flawed and must evaluate all secondary impacts associated with this change including the installation or creation of new power generating facilities. 1-26

The Air Quality Section includes a statement that *"PAR 1148.1 would not change any of the VOC/TOC/TAC reduction aspects in [SIC] currently in the rule…."* WSPA agrees with this statement and requests that a clarification be made throughout the document to indicate that there are no emission reductions associated with the rule. Any references to furthering the goals of the AQMP or attaining ozone standards are misleading, false and should be removed. 1-27

Energy

If the electric work over rig component remains in the rule amendment, then the Energy analysis needs revisions and recirculation under CEQA. There is an estimate of approximately 68 workover rigs that may need to be converted to electric. If so, there is a potential for an increase in the demand for utilities that exceed current capacities. WSPA is unclear why the analysis assumes only three workover rigs that may need 1-28

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conversion since the rule amendment applies to the entire industry. Table 2-6 should be revised to accurately reflect the number of work over rigs operating in the Basin. 1-28 cont.

Geology and Soils

The proposed amended rule allows for the use of a storage shed. As such WSPA requests clarification as to why this section states that *"Other than the possible replacement of three diesel-fueled workover rigs with three non-diesel workover rigs, no physical modifications to buildings or structures are expected to occur as a result of implementing PAR 1148.1"* The rule specifically allows for the construction of a storage shed as a compliance option so this option is required to be evaluated under CEQA. 1-29

WSPA also requests substantiation as to how SCAQMD knows that all of these sites are flat or have all been previously graded? Any facility choosing to install the storage shed would need to excavate and grade the site as part of compliance. 1-30

Hazards and Hazardous Materials/Solid and Hazardous Waste

WSPA requests further analysis relative to VIII a-b. If SCAQMD requires the use of 5,676 oversized tarps that could come in contact with crude oil or by-products, these tarps would be required to be disposed of as hazardous waste. This is costly and there is a significant shortage of landfills permitted to accept hazardous materials. An analysis should be conducted as to the trips generated and the site location of that these tarps would need to be transported to. This is a potential adverse impact that has not been addressed or quantified in any way. The significance criteria for Solid and Hazardous Waste states that the project can be significant if "the generation and disposal of hazardous and non-hazardous waste exceeds the capacity of designated landfills." It is unclear how a non-significance determination can be made lacking any quantification or analysis of local capacity to handle hazardous materials. 1-31

If hydrogen sulfide (H2S) vented to the atmosphere is being reduced as a result of the proposed amended regulation as the analysis asserts, this should have been quantified. No quantification of emission reductions (of any pollutant) is provided to allow for an adequate analysis. 1-32

Hydrology and Water Quality

Please see the comments above. The proposed amendments specifically allow for the construction of a storage shed as part of mandatory rule compliance. WSPA disagrees with the statement that *"PAR 1148.1 neither requires construction of new facilities nor requires physical modifications at existing facilities that would entail construction activities that would require water for dust mitigation."* 1-33

This analysis is inadequate and requires quantification.

Land Use and Planning

Please see the comments above. This analysis is inadequate and requires quantification. 1-34

Transportation and Traffic

The delivery and removal of approximately 5,767 tarps needs to be addressed. WSPA is unclear what vendor can supply these oversized tarps and how far they would need to travel for delivery and then subsequent 1-35

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removal as a hazardous waste. Quantification is needed before this analysis can adequately find no significant impacts from the environmental sector.
If the tarps are not delivered, it is because a facility has chosen to comply with the construction of a storage shed. There are workers, equipment and deliveries associated with this construction that should have been addressed. 1-35 cont.

Mandatory Findings of Significance

The Draft EA lacks the detail or quantification to make an adequate finding of significance under CEQA. The SCAQMD's own footnote highlighting documentation that is more than 12 years old should indicate that this type of documentation is outdated and not an effective tool for determining cumulative significance. 1-36

WSPA requests that the reference to "possible detriment to public health caused by exposure to VOC, TAC and TOC emissions…." be removed. This is false and misleading and contradicts many other statements that confirm that the amendments are administrative and do not reduce emissions in any way. 1-37

WSPA appreciates the opportunity to comment on the Draft EA for PAR 1148.1. We request that the analysis be re-done and recirculated to remove the reference to the electric workover rig as well as include an adequate analysis related to the thousands of tarps and storage sheds that are required to be included as part of this rule amendment. 1-38

WSPA also requests the removal of any reference to emission reductions associated with this amendment and finally, would encourage the SCAQMD to focus on rule development that actually attains and maintains ambient air quality standards necessary to protect public health. This amendment is an administrative, costly burden with no environmental benefits whatsoever. 1-39

Sincerely,

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Senior Coordinator, Coastal Region, State Marine, Waste, and Property Tax Issues

CC: Barry Wallerstein, D.Env.
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RESPONSES TO COMMENT LETTER #1
(Western States Petroleum Association – May 28, 2015)

1-1 This comment introduces the nature of the commentator's affiliation with the oil and gas industry. No response is necessary.

1-2 This comment claims that PAR 1148.1 does nothing to improve air quality and instead adds voluminous requirements, paperwork, notification, and compliance testing even though there has been no determination of an odor nuisance and other odor nuisance regulations are already in place. This comment claims that PAR 1148.1 is duplicative and does not further SCAQMD's mission of attaining ambient air quality standards.

The SCAQMD has a responsibility for not only achieving a reduction in criteria pollutants leading to attainment of the ambient air quality standards, but also for preventing public nuisance under the Health and Safety Code. Odor issues affecting a single complainant may be better described as a private nuisance and would not be covered by this authorization. The criteria used to establish a public nuisance is a relatively high bar, generally requiring six or more independent complainants and verification by SCAQMD personnel. PAR 1148.1 seeks to improve awareness over the issues involved with the complaint handling process, the efforts by the regulated industry, and the concerns from the local community, especially as they pertain to exposures from potentially toxic components of crude oil. Unlike as the commenter asserts, the proposed amended rule is not duplicative, as further described in the following paragraphs.

Appendix B of the Staff Report for PAR 1148.1 includes a five-year complaint history summary for a sample of the 473 oil and gas production facilities, which identifies three odor nuisance notices of violation as well as eight additional notices of violations that were identified during the investigation process for the complaints. The current complaint handling process used by the SCAQMD as part of the implementation of Rule 402 – Nuisance, involves the confirmation by an agency inspector of any odor identified in a complaint. The confirmation includes identification of the odor at the complainant location, traced back to a source. Although not every complaint call is a verifiable event, the complaint itself can be a community outreach opportunity, either as an indicator of dissatisfaction with perceived responses, actions, or of the desire for more information and awareness of the activities, including frequency and timeframes. In this way, management of potential private nuisance issues can help avoid escalation into a possible public nuisance situation.

SCAQMD Rule 410 –– Odors from Transfer Stations and Material Recovery Facilities, currently establishes odor management practices and requirements to reduce odors from municipal solid waste transfer stations and material recovery facilities. In addition, Proposed Rule 415 –– Odors from Rendering Facilities, seeks to establish odor mitigation requirements applicable to Rendering Facilities, and is scheduled for adoption later this year. PAR 1148.1 represents a

continuation of the effort to further minimize the potential for public nuisance due to odors from specific industries. PAR 1148.1 consists of two parts: 1) basic requirements for all covered facilities which are not burdensome; and, 2) Odor Mitigation Plan requirements which only go into effect once a triggering event occurs, meaning that there is a heightened potential for public nuisance. While there are various regulations that address accidental releases or breakdowns, it is not certain that potential nuisance can be solely attributed to upset conditions, or to other non-upset conditions from routine or preventative maintenance activities, or to otherwise compliant but inefficient operational or maintenance practices.

The provisions of PAR 1148.1 seek to strengthen the preventative measures some facilities may currently be taking and formalizing them in order to improve communication and transparency between the regulated community and their local residential community. As such, SCAQMD staff believes that only facilities with ongoing odor nuisance issues will become subject to the more stringent OMP requirements contained in the proposed amendment, whereas the community will benefit overall from the increased level of assurance provided from improved communication and improved overall awareness of the operations and practices conducted by the majority within the industry.

Lastly, some VOC and Toxic Air Contaminants (TACs) may be reduced as a result of incorporating additional best practices to reduce odors, but quantification of these benefits is difficult for State Implementation Plan (SIP) submittals, and thus PAR 1148.1 is not being considered for inclusion in the SIP.

1-3 This comment explains that the letter highlights specific concerns about the proposed project and the Draft EA. The comment letter has been bracketed and individual responses to the specific concerns raised are contained in responses 1-4 through 1-39.

1-4 This comment points out that because there are no emission reductions associated with PAR 1148.1, it is unclear as to how PAR 1148.1 carries out the goals of the AQMP to demonstrate compliance with federal and state ambient air quality standards. The District has a responsibility to protect community members from objectionable odors as well as attaining ambient air quality standards.

Although PAR 1148.1 is not driven by the AQMP, the current version of Rule 1148.1 implements Control Measure FUG-05 – Emission Reductions from Fugitive Emission Sources of the 2003 AQMP, and as such information on the achieved reductions under the rule is relevant to the background discussion. For additional discussion, see also Response 1-2.

1-5 This comment points out that because there are no emission reductions associated with PAR 1148.1, it is unclear why the adverse health effects of VOCs is described in the Draft EA.

This comment repeats sentiments previously expressed in Comments 1-2 and 1-4. See Responses 1-2 and 1-4.

1-6 This comment requests clarification as to what the phrase "*due to an increased awareness of oil and gas production wells by the community…*" means and why Rule 1148.1 needs to be amended. This comment also claims that there is no evidence to suggest that the oil and gas industry has a past problem or has created a significant odor nuisance.

Appendix B of the Staff Report identifies a sampling of complaint history for oil and gas production facilities which is reflective of the local communities' awareness and interest in the activities associated with them. Thus, page 1-1 of the Final EA has been clarified as follows: "However, due to an increased awareness of oil and gas production wells by the community, leading to multiple complaints and public comments requesting more proactive and preventative measures, SCAQMD staff has revisited the requirements in Rule 1148.1 to see what, if any, improvements can be made to the rule in order to minimize air quality and odor impacts to local residents and sensitive receptors that are often located nearby from ongoing operations that do not include drilling or well stimulation." See also Response 1-2.

1-7 This comment claims that because no emission inventory was presented to suggest that there would be emission reductions associated with PAR 1148.1, the following statement on page 1-1 of the Draft EA is misleading and erroneous:

> *"To prevent public odor nuisance and possible detriment to public health caused by exposure to VOC, TAC, and total organic compound (TOC) emissions from the operation and maintenance of oil and gas production facilities…"*

PAR 1148.1 includes rule language clarification as part of the purpose subdivision to indicate that TAC and TOC emission are reduced concurrent with the VOC emission reductions achieved by the existing rule and do not represent any additional reductions targeted as part of the proposed amendment. In addition, the purpose subdivision of PAR 1148.1 includes a reference "to prevent public nuisance and possible detriment to public health caused by exposure to such emissions." As such, the possible detriment specifically refers to exposure to emissions related to a public nuisance. See also Responses 1-2 and 1-4.

1-8 This comment restates how CEQA defines a project and requests clarification as to what the physical change on the environment would be as a result of the project. This comment also claims that even though there is no inventory provided to allow for an adequate analysis, SCAQMD staff indicated at the Stationary Source Committee meeting that PAR 1148.1 would result in emission reductions.

PAR 1148.1 was discussed at two Stationary Source Committee meetings held on February 20, 2015 and April 17, 2015, but emission reductions from reducing odor nuisance potential was only discussed at the latter meeting. From the minutes of the April 17th meeting, SCAQMD staff explained that the proposal (PAR 1148.1) is focused on reducing odor nuisance potential which in turn would have the potential to reduce emissions. However, the potential to reduce emissions through odor minimization cannot be quantified. Nonetheless, CEQA does not preclude the use of a qualitative analysis to evaluate the potential environmental effects of a proposed project. As such, the analysis in the Final EA quantifies the environmental effects whenever data is available and qualitatively analyzes the remainder based on available information at the time of publication.

1-9 This comment claims that the necessity for amending Rule 1148.1 is unclear because more than 1,000 wells were drilled within the last 12 months and there were no violations issued during this time frame for the 473 oil and gas facilities that operate within SCAQMD's jurisdiction.

This comment repeats sentiments previously expressed in Comment 1-2. See Response 1-2.

1-10 This comment claims that the proposal to amend Rule 1148.1 is duplicative and unnecessary because the oil and gas industry is also subject to and complies with SCAQMD Rule 402 –Nuisance.

Page 1-6 of the Final EA includes a discussion on Rule 402 - Nuisance, which is included as being applicable to oil and gas production facilities. See also Response 1-2.

1-11 This comment claims that if there are emission reductions associated with PAR 1148.1 then they should be quantified and included or the statements that refer to reductions in VOC, TAC, and TOC emissions should be removed from the EA.

This comment repeats sentiments previously expressed in Comment 1-2. See Response 1-2.

1-12 This comment requests clarification as to how the installation of a rubber grommet during maintenance or drill piping replacement activities is relevant to a potential odor nuisance.

The use of a rubber grommet has been established through operating permits as a best practice for removing excess liquid from outside of drill piping, production tubing and sucker rods during removal. Excess volatile liquid is a contributor to emissions and related odorous emissions during such activities, and as such, is a potential odor nuisance source.

1-13 This comment requests clarification as to what instrumentation is used to determine a confirmed odor event.

A confirmed odor event is defined by PAR 1148.1 as "an occurrence of odor resulting in three or more complaints by different individuals from different addresses, and the source of the odor is verified by District personnel." Odor has been defined by PAR 1148.1 as "the perception experienced by a person when one or more chemical substances in the air come into contact with the human olfactory nerves." As such, a confirmed odor event is determined by the complainants and verified by District personnel through their respective sense of smell, consistent with the underlying investigative process used to address complaints under Rule 402 – Nuisance, for odors.

1-14 This comment claims that Table 1-1 is misleading because it identifies the requirement for an alternative fuel or electric powered workover rig. This comment also claims that the title of Table 1-1 is misleading because there are no significant adverse effects and no mitigation measures identified in the Draft EA.

Subsequent to the release of the Draft EA for public review and comment, additional revisions were made to PAR 1148.1 that resulted in the removal of the requirement for the use of an alternative fuel or electric powered workover rig as part of an OMP. As such, Table 1-1 no longer contains the requirement for an alternative fuel or electric powered workover rig. Relative to the comment that the title is misleading, the commentator has confused the odor monitoring and mitigation requirements that are in PAR 1148.1 and are part of the project's design versus requiring mitigation and monitoring in response to significant adverse effects identified in a CEQA analysis as a result of implementing the project. The commentator is correct in that no significant adverse effects were identified in the Draft EA. Because PAR 1148.1 would not be expected to cause significant adverse environmental impacts for any topic area, mitigation measures are not required and therefore, were not included in the Draft EA.

The Odor Monitoring and Mitigation Requirements of Table 1-1 refer to PAR 1148.1 requirements associated with an Odor Mitigation Plan and not to any CEQA related elements. Please note that the latest version of PAR 1148.1 no longer includes alternative-fuel or electric powered workover rigs as an element of an Odor Mitigation Plan.

1-15 This comment claims that the analysis in Appendix B of the Draft EA contains emission reductions that are exclusive to the use of an electric workover rig and were the premise for the entire analysis even though this requirement was removed from the rule. This comment requests the development of a new emission inventory and a recirculation of the Draft EA so that the public has sufficient time to review the significant new information.

Emission reductions from alternative-fuel or electric rigs was not the basis for the proposed amendment and the emission inventory presented is only for CEQA purposes to discuss potential environmental impacts. As the commenter noted as a part of several comments, PAR 1148.1 is not expected to yield quantifiable emission reductions.

While it is correct that the calculations in Appendix B focus on the consequences of utilizing an electric workover rig, Appendix B also analyzes the adverse effects of utilizing alternate fuel workover rigs. Thus, the analysis shows both the potential benefits and adverse effects that may occur. However, as explained in Response 1-14, subsequent to the release of the Draft EA for public review and comment, additional revisions were made to PAR 1148.1 that resulted in the removal of the requirement for the use of an alternative fuel or electric powered workover rig as part of an OMP. By removing this requirement from PAR 1148.1, the adverse effects and benefits analyzed in Appendix B will not occur. Nonetheless, the analysis remains in the EA because it represents a worst-case analysis.

Other changes to PAR 1148.1 subsequent to the release of the Draft EA were proposed and the analysis has been revised to reflect these changes. In particular, the following modifications were made to the proposed project: 1) new paragraph (d)(3) has been added to require the pump out or removal of organic liquid accumulated in a well cellar the same day in the event the well cellar has been verified as a source of odors; 2) new paragraph (d)(14) has been added to require a facility operator to conduct and report a specific cause analysis for a confirmed oil deposition event; 3) new paragraph (e)(5) has been added to require monthly TOC measurements on any component identified as a potential odor nuisance and if a qualifying leak is identified, to require the repair, replacement, or removal from service the leaking component; and, 4) clause (f)(2)(C)(iv) has been revised to no longer specify covering of drill piping, production tubing and sucker rods; instead the new odor monitoring and mitigation plan specifications would require any removed drill piping, production tubing and sucker rods to be stored in a manner that would minimize emissions, either within an enclosed area, or by some other equivalent method.

Of these four changes to PAR 1148.1, industry has provided comments relative to item 1) to the effect that requiring the pump out or removal or organic liquid accumulated in a well cellar to occur the same day when the well cellar has been verified as a source of odors may cause an additional vacuum truck trip to the affected facility. Thus, the Draft EA has been revised to include an analysis of the potential adverse affects of additional vacuum truck trips and these additional assumptions and calculations can also be found in Appendix B.

Finally, the three remaining changes to PAR 1148.1 subsequent to the release of the Draft EA for public review and comment (see items 2 through 4) were determined to be procedural in nature and as such, would not be expected to cause any physical changes that that could cause secondary adverse environmental effects.

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, nor 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 minor revisions do not require recirculation of the document pursuant to CEQA Guidelines §15073.5 and §15088.5.

See also Response 1-2 regarding the purpose of PAR 1148.1.

1-16 This comment claims that Table 1-1 is confusing because it includes leak detection and repair (LDAR) requirements even though LDAR requirements are contained in Rule 1173.

Oil and gas production facilities are currently subject to Rule 1173. PAR 1148.1 includes requirements that are more stringent than Rule 1173 as part of the Odor Mitigation Requirements under an Odor Mitigation Plan and does not reflect any amendment to Rule 1173. It is also noted that recent revisions to PAR 1148.1 add even more stringency to LDAR requirements above and beyond Rule 1173 if certain conditions are met. Specifically, Table 1-1 proposes more stringent LDAR requirements for PAR 1148.1 than what is currently required by Rule 1173 by reducing the required repair times for components subject to Rule 1173 LDAR to the lowest schedule of one calendar day with an extended repair period of three calendar days instead of the seven day repair time allowance and seven day extended repair period.

1-17 This comment requests clarification as to how enclosures or tarping have anything to do with reducing odor from removed drill piping and drill rods. This comment also asks for the reasoning behind why the Draft EA does not contain an analysis employing an enclosure as a compliance method.

As explained in Response 1-12, excess volatile liquid is a contributor to emissions and related odorous emissions during workover activities, and as such, is a potential odor nuisance source. For this reason, PAR 1148.1 requires the use of a grommet to remove any excess liquid from outside of the drill piping, production tubing, and sucker rods during removal. Further, managing the removed drill piping, production tubing and sucker rods through means such as storing within an enclosed area or other equivalent method to minimize exposure to crosswinds will reduce evaporation rates from any residue, thereby reducing peak releases and associated potential odor impacts. This requirement would apply only to those facilities subject to an Odor Mitigation Plan and where the facility identifies the removed drill piping, production tubing or sucker rods as a potential odor nuisance source, and the use of an enclosure or equivalent is determined to be feasible and effective in addressing the specific cause of the confirmed odor events or notice(s) of violation that resulted in the requirement for plan submittal.

When removing drill piping, production tubing or sucker rods during maintenance, the drill piping, production tubing and sucker rods are first temporarily staged (e.g., stored vertically) on the rig until they can be moved to an area on the property that has enough space to handle drill piping, production

tubing and sucker rod lengths up to 30 feet. Facilities already have designated areas where removed drill piping, production tubing and sucker rods are stored. Some facilities have an existing enclosed storage area for this purpose while others store the removed drill piping, production tubing and sucker rods out in the open. The proposed requirement in PAR 1148.1 for an enclosure or equivalent for storing the removed drill piping, production tubing and sucker rods would only apply in the following circumstances: 1) the facility is subject to an OMP; 2) the facility identifies the removed drill piping, production tubing or sucker rods as a potential odor nuisance source; and, 3) the use of an enclosure or equivalent is determined to be feasible. The purpose of the enclosure or equivalent would serve as a wind barrier to minimize the potential for a crosswind to disperse odors from any residue on the drill piping, production tubing and sucker rods across and offsite the property.

Subsequent to the release of the Draft EA, PAR 1148.1 was revised to clarify that an operator, would have the option of storing the removed drill piping, production tubing and sucker rods either within an enclosed area, or by some other equivalent method that acts as a wind barrier such as a covering or a freestanding wind screen, for example, in lieu of limiting the type of an equivalent method option in PAR 1148.1 to just a tarp. The Draft EA does not contain an analysis of constructing a new enclosed storage area because if an affected facility already has an enclosed storage area, a new one would not be needed since the existing enclosure would suffice. Further, if an affected facility already has a storage area on the property, all the facility would need to do is employ an equivalent method such as a covering or freestanding wind screen to provide a wind barrier. Because these would be the easiest and least expensive options, the analysis assumes that an affected facility would likely employ some kind of equivalent covering or wind screen in lieu of constructing an enclosed storage area.

1-18 This comment claims that even though the rule specifically lists an enclosed structure as a potential compliance option, no environmental analysis of the enclosed structure was included in the Draft EA. This comment also claims the CEQA requires all indirect environmental impacts to be evaluated and to be conservative, the analysis should have assumed that some portion of the affected facilities would build enclosures and the analysis should have evaluated those construction impacts. This comment inquires as to what measures were taken to support the claim that facility operators would not construct new storage areas. This comment inquires as to whether facilities were surveyed or questioned about what actions their operators might take to comply with this part of the rule.

Contrary to the comment, the language in PAR 1148.1 does not require or specify a building or storage shed as an enclosure. An enclosure can be a simple, temporary, portable wind barrier such as a covering or freestanding wind screen and does not need to be a permanent building, per se. Further, as explained in Response 1-17, an enclosure or equivalent for removed drill piping, production tubing and sucker rods would only be required under limited circumstances. Considering that workover activity is typically limited in duration, temporary

portable tenting may be also considered a feasible option in lieu of a more permanent enclosure. Certain facilities, especially those in urban areas, already store removed drill piping, production tubing and sucker rods in areas that minimize exposure to crosswinds.

The Draft EA assumed that there could be three facilities that may become subject to an OMP based on their past complaint histories. Thus, for these three facilities, if the removed drill piping, production tubing or sucker rods are identified as a potential odor nuisance source, then each facility operator would need to determine if the use of an enclosure or equivalent would be feasible and effective to prevent crosswinds flowing across the removed drill piping, production tubing and sucker rods while these items are being stored.

1-19 This comment requests clarification as to how the determination was made in the Staff Report which claims that covering drill rods and piping with plastic tarping is the preferred option. The comment extrapolates the data provided in the Staff Report to say that 473 facilities would each need six tarps twice a year and that the deliveries of these tarps along with the associated air emissions was not analyzed in the Draft EA.

Reference to the use of tarps has been removed from the Final Staff Report and PAR 1148.1, and this language is no longer included in the Final EA. Contrary to the comment, as explained in Response 1-18, the Draft EA assumed, based on past complaint histories, that there could be three facilities that may become subject to an OMP and that each facility could have six wells that would be maintained or reworked twice each year. Thus, only three facilities would be expected to use either an enclosure or equivalent to provide an effective wind barrier, such as a covering or freestanding wind screen, in lieu of an enclosed area in the event that the removed drill piping, production tubing and sucker rods are identified as a potential odor nuisance source, and the use of an enclosure equivalent such as a covering or freestanding wind screen may be feasible in preventing crosswinds from flowing across the removed drill piping, production tubing and sucker rods while these items are being stored.

If a facility operator chooses to utilize a covering such as a tarp as an equivalent enclosure, then one covering per well would be needed twice per year (e.g., 1 covering x 6 wells x 2 workovers = 12 coverings). Further, if all three facility operators choose to utilize coverings, then a total of 36 coverings per year would be needed instead of the commentator's alleged 5,676 coverings. Because the OMP would be prepared in advance, facility operators would have advance knowledge to be able to coordinate amongst their existing supply trips or delivery schedules to also include the purchase of 12 coverings per facility that may be needed for future removal and storage of drill piping, production tubing and sucker rods. Thus, any trips to purchase the coverings would be covered by existing maintenance trips to obtain supplies.

In the event that each facility operator would need to make an unplanned trip to obtain coverings or have the coverings delivered by a supplier for the aforementioned purpose, the amount of unplanned trips needed per year could be one additional round-trip per facility. Even if three additional trips are needed to obtain or supply coverings over the course of one year, these trips would not be expected to occur on the same day for three separate facilities. Finally, because the calculations in Appendix B are very conservative in that they are based on the assumption that there could be three heavy duty vacuum trucks visiting three facilities on a peak day, any additional unplanned trips that may occur in order to obtain or supply coverings, would not be expected to exceed the peak daily trips currently analyzed in the document.

1-20 This comment claims that because there is no history of nuisance impacts from the oil and gas industry, PAR 1148.1 and its Staff Report do not contain substantiation to justify the goal to "minimize the potential for nuisance and odor impacts to local residents and sensitive receptors that are often located nearby from ongoing operations that do not include drilling." This comment also claims that there is no evidence that any sensitive receptors have found the oil and gas source category to be a nuisance and therefore, requests substantiation as to how the SCAQMD knows that these facilities are located near sensitive receptors.

PAR 1148.1 defines sensitive receptor to "mean any residence including private homes, condominiums, apartments, and living quarters; education resources such as preschools and kindergarten through grade twelve (k-12) schools; licensed 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." Appendix B of the Staff Report identifies facilities with a complaint history and also identifies the proximity to sensitive receptors as defined in PAR 1148.1. See also Response 1-2.

1-21 This comment claims that the following statement in the Draft EA is false and needs to be removed: *"…the proposed project will continue to assist the SCAQMD's progress in attaining and maintaining the ambient air quality standards for ozone."*

PAR 1148.1 includes additional rule language clarifications that improve the enforceability of the existing rule requirements, and as such, serve to continue to assist the SCAQMD's progress in attaining and maintaining the ambient air quality standards for ozone. (Examples include: strengthening the safety exemption language, providing cross-references to other rules applicable to oil and gas production facilities, and clarifying recordkeeping requirements).

PAR 1148.1 is designed to enhance compliance activities in order to prevent emissions from hydrocarbons which are also a source of odors when released to the atmosphere. Thus, the prevention of odors is directly related to preventing

emissions that would otherwise contribute to the formation of ozone. For these reasons, the statement will remain in the Final EA.

1-22 This comment claims that a construction analysis should be included in the Final EA and that the following statement is incorrect because PAR 1148.1 requires an enclosure for used rods: *"PAR 1148.1 neither requires construction of new facilities nor requires physical modifications at existing facilities that would entail construction activities."*

This comment is a repeat of the sentiments expressed in Comment 1-18. See Response 1-18.

1-23 This comment claims that the calculations in Appendix B and the data presented in Tables 2-2, 2-3, 2-4, and 2-5 of the Draft EA are no longer valid because the utilization of an electric workover rig is no longer required and there are no emission reductions associated with PAR 1148.1. This comment also claims that without the requirement for an electric workover rig, there are no environmental benefits from PAR 1148.1 and instead there are several potential adverse environmental impacts that have yet to be adequately addressed.

While it is correct that the use of an alternative fuel or electric powered workover rig is no longer a requirement in PAR 1148.1, the analysis which includes both benefits and adverse impacts relative to the use of an alternative fuel or electric powered workover rig will remain as part of the responses to the environmental checklist to represent a worst-case analysis. The Final EA has been revised to acknowledge this understanding. PAR 1148.1 still has environmental benefits by reducing the potential for odor nuisances. However, in response to the claim that there are several potential adverse environmental impacts that have yet to be adequately addressed, the commentator has not identified the impacts of concern. As such, SCAQMD staff is unable and not required to prepare a response to this comment.

1-24 This comment claims that there were no odor incidents within the last year at more than 473 facilities so it is not clear in the Draft EA when the three confirmed odor events occurred. This comment claims that because there were no odor incidents and no evidence of a nuisance problem, then the necessity of the amendment, a finding required by Health and Safety Code §40727, is called into question.

Because complaints need to be independent and associated with the same event, the Final EA has been clarified as follows: *"Past ~~compliance~~ complaint data for Rule 1148.1 facilities has shown that only three facilities experienced the potential equivalent of ~~more than~~ three or more confirmed odor events or received a Rule 402 NOV."* See also Response 1-2.

1-25 This comment claims that while the electric workover rig component was removed from PAR 1148.1, the Draft EA claims that electricity generating

equipment could be installed to support the operation of an electric workover rig. This comment claims that the SCAQMD finds it more beneficial to generate more power in order to reduce odor impacts that have not occurred. This comment also claims that if a new power generating source is required, it should have been evaluated in the CEQA document. This comment claims that by not analyzing new power generating equipment in the CEQA is piecemealing and prohibited.

As explained in Responses 1-14, 1-15, and 1-23, while the electric workover rig component of the Draft EA was removed, the analysis for electric workover rigs as well as the analysis for alternative fuel workover rigs will remain in the document to represent a worst-case analysis. With regard to the remark that any electricity generating equipment that may be installed to support an electric workover rig (which currently do not exist) should be analyzed in this CEQA document, the discussion in Section III b) of the Draft EA explained that any new electricity generation within the district would require permitting and compliance with a multitude of SCAQMD rules and regulations and a separate CEQA evaluation to evaluate the effects of any proposal to install new electricity generating equipment. In other words, a CEQA evaluation and separate permitting analysis of new electricity generation equipment is beyond the scope of PAR 1148.1 and thus, is not included in this EA.

The commentator is incorrect in claiming that the lack of analysis for new power generating equipment is piecemealing. In actuality, piecemealing is when a project is divided up into smaller projects in order to qualify for an exemption and is prohibited by Public Resources Code §21159.27. The SCAQMD did not determine that the project or any portion would be exempt under CEQA but instead prepared an Environmental Assessment pursuant to its Certified Regulatory Program as promulgated in CEQA Guidelines §15251 (l). Further, the Final EA contains an analysis of the environmental effects of the future action of implementing PAR 1148.1 and the reasonably foreseeable consequences of the project.

SCAQMD staff is not aware of any current efforts to bring an electric or alternative fuel workover rig into commercial use, nor is SCAQMD staff aware of any such rigs under production or undergoing retrofit. Nonetheless, because electric and alternate fuel workover rigs are not reasonably foreseeable in that they do not currently exist, the SCAQMD conducted an analysis based on currently available diesel fuel usage data for diesel-fueled workover rigs and extrapolated that data to estimate the potential environmental impacts, both beneficial and adverse, of what may happen if electric and alternative fuel workover rigs are developed and are used. In particular, Table 2-9 (formerly numbered as Table 2-6 in the Draft EA) summarizes that 0.0003 MW of instantaneous electricity would be needed to supply three electric workover rigs, a miniscule and less than significant amount when compared to the amount of electricity supply available.

1-26 This comment claims that references to electric or clean fuel workover rigs in the CEQA document should be removed if the requirement has been removed from PAR 1148.1. This comment also claims that if the requirement for electric or clean fuel workover rigs remains in PAR 1148.1, then the analysis in the CEQA document is flawed because it does not analyze the secondary effects of installing new power generation facilities.

These comments repeat the sentiments expressed in Comment 1-25. See Response 1-25.

1-27 This comment agrees with the statement in Section III d) of the EA that says "PAR 1148.1 would not change any of the VOC/TOC/TAC reduction aspects currently in the rule…" and requests that the CEQA document contain a clarification that there are no emission reductions associated with PAR 1148.1. This comment also requests that references to furthering the goals of the AQMP or attaining ozone standards should be removed from the CEQA document because they are misleading and false.

These comments repeat the sentiments expressed in Comments 1-4, 1-7, 1-11, and 1-21. See Responses 1-4, 1-7, 1-11, and 1-21.

1-28 This comment claims that if the electric workover rig requirement remains in PAR 1148.1, then the energy analysis needs to be revised and the CEQA document needs to be recirculated. This comment also claims that approximately 68 workover rigs would need to be converted to electric workover rigs and that there is a potential to exceed utilities' capacities to provide power. This comment requests clarification as to why the analysis assumes that only three workover rigs would need to be converted to electric since PAR 1148.1 applies to the entire industry. Lastly, this comment suggests that Table 2-6 be revised to accurately reflect the number of workover rigs operating in the Basin.

As previously explained in Response 1-14, the electric workover rig requirement as well as the alternative fuel workover rig requirement was removed from PAR 1148.1; thus, the energy analysis does not need to be revised and the CEQA document does not need to be recirculated. With regard to the comment that 68 workover rigs should have been analyzed, the commentator has misinterpreted the requirement in the OMP provision as applying to all workover rigs. Instead, the requirement that was initially proposed in PAR 1148.1 and then subsequently removed, would have required the use of an electric or alternative fuel workover rig only in the event that a facility would be required to prepare and obtain approval of an Odor Mitigation Plan in response to a confirmed odor event. Since historic complaint data shows that only three facilities would have potentially required an Odor Mitigation Plan, the analysis was based on the assumption that three electric or alternative fuel workover rigs might be utilized. For this reason, SCAQMD staff believes that the energy data based on the use of three electric workover rigs as presented in Table 2-6 (which has been renumbered in the Final

EA to Table 2-9) accurately reflects the potential electricity demand. See also Response 1-25.

1-29 This comment claims that PAR 1148.1 allows for the use of a storage shed which would require construction and the effects of constructing a storage shed should be evaluated under CEQA.

This comment repeats the sentiments previously expressed in Comments 1-17 and 1-18. See Responses 1-17 and 1-18.

1-30 This comment requests substantiation for how SCAQMD knows that the storage areas are flat or have been previously graded. This comment claims that any facility choosing to install a storage shed would need to excavate and grade the site.

As explained in Response 1-17, workover activities, which include the removal of drill piping, production tubing and sucker rods, are currently occurring at the affected facilities, and these facilities already have designated areas on their properties for storing these removed items. Because the length of drill rods, production tubing and sucker rods can be up to 30 feet, in order to safely store these items without risking them moving or rolling away, the area would need to be relatively level. Further, as explained in Responses 1-17 and 1-18, SCAQMD staff does not believe that a storage shed would be necessary in order to comply with the enclosure or equivalent requirement for the limited number of facilities.

1-31 This comment claims that the SCAQMD is requiring the use of 5,676 oversized tarps and because these tarps could come in contact with crude oil or by-products, they would need to be disposed of as hazardous waste and the CEQA document would need to further analyze this impact. This comment claims that the disposal of these tarps would be costly and there is a significant shortage of landfills permitted to accept hazardous materials. This comment claims that an analysis should be conducted to quantify the number of trips generated based on the site locations where the tarps would need to be delivered and that this impact is not addressed or quantified in the CEQA document. This comment questions how a non-significance determination was made when the quantity of hazardous waste was not assessed and compared to the capacity of designated landfills.

The commentator has misinterpreted the enclosure or equivalent requirement in PAR 1148.1 to apply to all facilities subject to PAR 1148.1. The commentator's estimate of the number of tarps that would be needed and the explanation for why this estimate is incorrect is addressed in Response 1-19. In addition, Response 1-19 addresses the estimated number of trips that may be needed to supply coverings for the removed drill piping, production tubing and sucker rods.

With regard to the claim that used tarps would need to be disposed of as hazardous waste, SCAQMD staff understands that it is current industry best practice during workover activities to use a grommet to remove excess liquid

from the drill piping, production tubing and sucker rods as they are being removed from the well. Further, new paragraph (d)(11) requiring the installation of a rubber grommet as part of a maintenance or drill rod/production tubing/sucker rod replacement activity that involves the use of a workover rig, would also help to minimize any excess liquid or residue coming off of the removed drill piping, production tubing and sucker rods. After the drill rods, production tubing and sucker rods are removed, they are temporarily staged vertically on the rig, so any free flowing liquid would not be expected to remain on these items prior to moving them from the rig to a storage area, although residue which may create odors may remain. For these reasons, SCAQMD staff does not believe that the tarps, if utilized, would come in contact with any free flowing liquid materials during the storage, and thus, would not require them to be treated as hazardous waste, if a facility operator chooses to dispose of the tarps. Further, since six coverings would be needed for six wells twice a year at three facilities (or 12 per facility), if each facility operator chooses to dispose of these coverings (36 in total), instead of reusing them, this small volume being disposed would not be expected to cause a significant exceedance of the capacity of designated landfills, even if each facility operator chooses to dispose of the coverings as hazardous waste.

1-32 This comment claims that if hydrogen sulfide (H2S) is being reduced as a result of PAR 1148.1, then the amount of reduction should have been quantified in the CEQA document. This comment claims that the CEQA document does not contain a quantification of any emission reductions needed for an adequate analysis.

Sulfur compounds such as hydrogen sulfide (H2S) and mercaptans contribute to odors from existing oil and gas operations. While CARB does not identify H2S as a toxic air contaminant (TAC) per se, CARB is evaluating H2S and considers this substance a potential candidate for TAC classification as part of an ongoing evaluation of carcinogenic and noncarcinogenic health effects, emissions and exposure in California[16]. In addition, because H2S is known odorous substance and a pollutant of concern from an accidental release perspective, H2S is listed in the accidental release provisions of section 112 (r) of the Clean Air Act. Substances regulated under section 112 (r) are anticipated to cause death, injury, or serious adverse affects to human health or the environment upon accidental release[17]. Thus, by incorporating additional best practices to reduce odors, PAR 1148.1 would further assist in minimizing emissions to the atmosphere by improving upon compliance and monitoring requirements to minimize the potential for odors. For these reasons, some VOC, TACs, and H2S may be reduced as a result, but quantification of these benefits is difficult for SIP submittals, and thus, PAR 1148.1 is not being considered for inclusion in the SIP.

[16] CARB, Toxic Air Contaminant (TAC) Identification List, Quick Reference Format, December 1999. http://www.arb.ca.gov/toxics/quickref.htm

[17] EPA, Report to Congress on Hydrogen Sulfide Air Emissions Associated with the Extraction of Oil and Natural Gas, October 1993.

With regard to the comment that the CEQA document does not quantify any emission reductions, this comment is a repeat of the sentiments expressed in Comments 1-4, 1-5, 1-7 and 1-11. See Responses 1-4, 1-5, 1-7 and 1-11.

1-33 This comment claims that PAR 1148.1 allows for the use of a storage shed which would require construction and the effects of constructing a storage shed should be evaluated under CEQA.

This comment essentially repeats the sentiments expressed in Comments 1-17 and 1-18. See Responses 1-17 and 1-18.

1-34 This comment claims that PAR 1148.1 allows for the use of a storage shed which would require construction and the effects of constructing a storage shed should be evaluated under CEQA.

This comment essentially repeats the sentiments expressed in Comments 1-17 and 1-18. See Responses 1-17 and 1-18.

1-35 This comment claims that the delivery of 5,767 tarps needs to be addressed. This comment inquires as to the supplier of the tarps and claims that the distance that would be traveled in order to deliver the tarps to the facilities and to later deliver the used tarps to a hazardous waste landfill should be analyzed in the CEQA document. This comment also claims that if tarps are not delivered, it would be because a facility has chosen to comply by building a storage shed and workers, deliveries and equipment need to be addressed.

With regard to the number of tarps that were estimated, the delivery of the tarps, and the disposal of the tarps, see Response 1-31. With regard to the commentator's assumption that storage shed will be built if tarps are not utilized, see Responses 1-17 and 1-18.

1-36 This comment claims that the Draft EA lacks detail or quantification to make an adequate finding of significance under CEQA. This comment also claims at a footnote referencing documentation that is more than 12 years old indicates that the documentation is outdated and not an effective tool for determining cumulative significance.

The comment about the lack of quantification in the Draft EA has been addressed in Responses 1-2, 1-8, 1-15, 1-31 and 1-32. With regard to the footnote with 12 year old documentation, the commentator did not identify the specific footnote of concern and there are multiple footnotes to references from years ranging from 2003 to 2015. Thus, SCAQMD staff is unable to provide a specific response to this claim. Nonetheless, an age of a particular resource does not automatically mean that the information should be discounted or invalidated if the data is applicable to the project. When preparing the CEQA document, SCAQMD staff has used its best efforts to find out and rely upon the best available data and resources and disclose all that it reasonably can to present facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts.

1-37 This comment requests the removal of the phrase "*possible detriment to public health caused by exposure to VOC, TAC, and TOC emissions"* from the Draft EA because it is false and misleading and because it contradicts other statements that confirm the amendments are administrative and do not reduce emissions in any way.

This comment repeats the sentiments previously expressed in Comment 1-7. See Response 1-7.

1-38 This comment expresses appreciation for the opportunity to comment. This comment also requests that the CEQA analysis be re-done and recirculated to remove the reference to electric workover rigs and include an analysis related to the thousands of tarps and storage sheds that are required to included as part of PAR 1148.1.

These comments repeat the sentiments previously expressed in Comments 1-14, 1-15, 1-17, 1-18, 1-19, 1-23, and 1-26. See Responses 1-14, 1-15, 1-17, 1-18, 1-19, 1-23, and 1-26.

1-39 This comment requests the removal of any reference to emission reductions and encourages the SCAQMD to focus on rule development that actually attains and maintains ambient air quality standards. This comment claims that PAR 1148.1 is an administrative, costly burden with no environmental benefits.

The references to emission reductions in the CEQA document pertain to the environmental impact analysis of potential secondary effects of implementing PAR 1148.1 and do not reflect any SIP creditable actions. With regard to the claim that PAR 1148.1 has no environmental benefits, see Response 1-2.

COMMENT LETTER No. 2

From: Joyce Dillard [mailto:dillardjoyce@yahoo.com]
Sent: Thursday, May 28, 2015 4:17 PM
To: Barbara Radlein
Subject: Comments AQMD Draft EA-Proposed Amended Rule 1148.1–Oil and Gas Production Wells due 5.28.2015

Potential Environmental Factors include: 2-1

- Biological Resources
- Hydrology and Water Quality
- Public Services

Watersheds and the Basin Plans are not addressed.

Not clear if the use of wastewater under urban runoff and the potential uses for recycled water or irrigation water. Another term used is or surface water and drainage. LA Regional Water Quality Control Board in issuing the LA Municipal Separate Storm Sewer System (MS4) Discharges Order NO. R4-2012-0175 NPDES Permit No. CAS004001 allows for capture of such water and reuse for water quality and Total Maximum Daily Load reductions. Basin Plan is divided into watersheds with Watershed Management Areas requiring Watershed Management Plans or Enhanced Watershed Management Plans. 2-2

Urban runoff appears to be from non-point sources. Does this document consider these wells point sources with their own permit or non-point sources subject to this runoff and water recycling collection? 2-3

Water quality monitoring is necessary yet excluded in this document. 2-4

More than just Odor Mitigation, the VOC emissions from wastewater systems may affect water quality, public health and biological resources such as birds, wildlife, trees and plants. 2-5

Joyce Dillard
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RESPONSES TO COMMENT LETTER #2
(Joyce Dillard – May 28, 2015)

2-1 The comment implies that the Draft EA should consider potential environmental factors for the topics of biological resources, hydrology and water quality, and public services without explaining the reasoning for why the commentator believes that there would be environmental factors to consider relative to the proposed project.

The Draft EA analyzed the effects of the proposed project for all 17 environmental topics, which include the topics of biological resources, hydrology and water quality, and public services. The proposed project was shown to have no impact on the topics of biological resources, hydrology and water quality, and public services.

2-2 The comment states that the Draft EA did not address watersheds and basin plans. The comment also seeks clarification as to potential uses for recycled or irrigation water.

Because the proposed project has no provision that would increase demand for water or increase the generation or recycling of wastewater, urban runoff or stormwater, watersheds and basin plans would also not be affected by the proposed project. Further, as explained in Section IX of the EA, the proposed project would not require the construction of additional water resource facilities, increase the need for new or expanded water entitlements, or alter existing drainage patterns. For these same reasons, the proposed project would not substantially deplete groundwater supplies. Consequently, the proposed project is not expected to interfere substantially with groundwater recharge.

2-3 The comment states that urban runoff appears to come from non-point sources and inquires as to whether the Draft EA considers wells to be point sources with their own permit or non-point sources subject to runoff and water recycling collection requirements.

This comment appears to be directed at water impacts of existing wells, and not any adverse impacts of the proposed rule amendments. The proposed project has no provision that would affect urban runoff or require water recycling. As explained in Section IX of the EA, PAR 1148.1 would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Since compliance with PAR 1148.1 does not involve water that would generate wastewater processes, there would be no change in the composition or volume of existing wastewater streams from the affected facilities. Thus, PAR 1148.1 is not expected to require additional wastewater disposal capacity, violate any water quality standard or wastewater discharge requirements, or otherwise substantially degrade water quality. For these reasons, the EA is not required to identify wells as point- or non-point sources.

2-4 The comment states that water quality monitoring should have been addressed in the Draft EA. As previously explained in Responses 2-3 and 2-4, because the proposed project does not contain any provisions that would alter how oil and gas production facilities currently process and monitor water quality, the EA concluded that the proposed project would not 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.

2-5 The comment states that VOC emissions from wastewater systems may affect water quality, public health and biological resources such as birds, wildlife, trees and plants. The proposed project has been crafted to reduce the number of verified odor complaints required before an affected facility is required to take corrective action. The proposed project does not, however, contain any provisions that would require affected facilities to alter their existing wastewater systems.