ATTACHMENT H

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final Environmental Assessment:

Proposed Amended Rule 1149 – Storage Tank and Pipeline Cleaning and Degassing

April 2008

SCAQMD No. 080304JK
SCH No. 2008031034

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PREFACE

This document constitutes the Final Environmental Assessment (EA) for the Proposed Amended Rule 1149 – Storage Tank and Pipeline Cleaning and Degassing. The Draft EA was released for a 30-day public review and comment period from March 11, 2008 to April 9, 2008. One comment letter was received from the public and is included with a response to the comment in Appendix D.

To ease in identification, modifications to the document are included as underlined text and text removed from the document is indicated by ~~strikethrough~~. PAR 1149 has been revised subsequent to the release of the Draft EA for public review and comment. Brief summaries of the primary changes made to PAR 1149 are presented in the following bulleted items.

- Commenters on PAR 1149 have stated that it would be difficult to estimate the true vapor pressure in the field. Therefore, the low vapor pressure requirement was changed back to Reid vapor pressure (RVP) instead of true vapor pressure (TVP). The change would ensure verification of VOC emission reductions. The change would not affect the environmental analysis.
- Commenters on PAR 1149 have stated that based on a strict reading of PAR 1149, it is not clear that owner/operators would be allowed to attach emission control devices to the pipelines. Language was added clarifying that control devices are allowed to be attached to pipelines. Since the intent of PAR 1149 would be the control of emissions from pipelines, the added language would clarify that the intent of allowing control equipment to be attached to pipelines is part of the proposed project. The addition of control equipment to pipelines was evaluated in the Draft EA. The change would not affect the environmental analysis.
- PAR 1149 has been modified to remove the notification and review process from the greenhouse gas quantification protocol. Since the impacts from the protocol were determined to be speculative, no analysis of the protocol was included in the Draft EA. The removal of the notification and review process; therefore, would not affect the environmental analysis.
- Commenters on PAR 1149 have stated that an additional activated carbon adsorption unit would be required during sludge removal under PAR 1149. This would require an additional activated carbon adsorption unit at up to 192 tanks annually. Sludge is only accumulated in storage tanks that hold heavy product; gasoline storage tanks are not expected to contain sludge. The environmental analysis has been updated to include this information, which does not change any conclusions.
- One storage tank owner/operator has stated that the support legs on approximately 14 of their drain dry tanks would need to be shortened to comply with PAR 1149. The construction would occur over four years to reduce the operating and financial impacts to the storage tank owner/operator and potential disruption to the delivery of fuel supplies to the market. Based on this, only one storage tank would be altered at a time. The environmental analysis has been updated to include this information. This modification does not change any conclusions in the environmental analysis.

Based on the revised analysis, there would be no new significant adverse impacts, a substantial increase in the severity of an environmental impact, or changes to any conclusions made in the Draft EA. Therefore, these changes would not affect the overall conclusions in the Draft EA.

None of the modifications alter any conclusions reached in the Draft EA, nor provide new information of substantial importance relative to the draft document. As a result, these minor revisions do not require recirculation of the document pursuant to CEQA Guidelines §15073.5. This document constitutes the Final EA for 1149 – Storage Tank and Pipeline Cleaning and Degassing.

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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 (collectively known as the "district"). By statute, the SCAQMD is required to adopt an air quality management plan (AQMP) demonstrating attainment of 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 ~~2003~~ 2007 AQMP concluded that major reductions in criteria pollutant emissions of volatile organic compounds (VOCs) and oxides of nitrogen (NOx) are necessary to attain the air quality standards for ozone, particulate matter with an aerodynamic diameter of 10 microns or less (PM10) and particulate matter with an aerodynamic diameter of 2.5 microns or less (PM2.5). Ozone, a criteria pollutant, is formed when VOCs react with NOx in the atmosphere and has been shown to adversely affect human health. VOC emissions also contribute to the formation of PM10 and PM2.5. The federal one-hour ozone standard was exceeded 35 times and the eight-hour ozone standard was exceeded 86 times in 2006 at various locations in the district. The state one-hour ozone standard was exceeded 102 times and the eight-hour ozone standard was exceeded 121 times in 2006. As a result, additional VOC reductions are necessary to attain the federal and state ozone standards.

Rule 1149 – Storage Tank Cleaning and Degassing, was originally adopted by the South Coast Air Quality Management District (SCAQMD) on December 4, 1987 and subsequently amended on April 1, 1988 and July 14, 1995.

Rule 1149 applies to VOC emissions from cleaning and degassing operations in large aboveground organic liquid storage tanks predominately at petroleum refineries and terminals and small underground organic liquid storage tanks. The current rule requires vapors contained in storage tanks to be vented to a control device for a pre-determined length of time or to be displaced by a liquid into a control device.

The proposed amended rule amendments would instead require a vapor concentration of 5,000 parts per million by volume (ppmv), measured as methane, to be met for at least one hour before allowing the vapors to be vented to atmosphere. This proposed standard will better capture emissions from sludge and product residual remaining in the tanks. Liquid balancing or any other technology that achieves the proposed standard will be allowed.

The proposed amended rule amendments would also expand the applicability of the rule to small above ground organic liquid storage tanks, pipelines and large storage tanks previously exempted because of lower vapor pressure products. Furthermore, the proposed amended rule will streamline the notification process and clarify requirements for vacuum trucks and containers used for storing liquid and sludge removed during the cleaning process.

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

[2] Health & Safety Code, §40460 (a).

[3] Health & Safety Code, §40440 (a).

If approved, the proposed amended rule amendments would fully implement control measure FUG-04 in the 2007 Air Quality Management Plan. As proposed, the rule would reduce VOC emissions by ~~1.25~~ 1.27 tons per day.

Many degassing operations routinely achieve in practice the proposed requirements set forth in the proposed amended rule. California Code of Regulations, Title 8 - General Industry Safety Orders, has strict restrictions for entry into confined spaces with hazardous atmospheres such as petroleum storage tanks. In order to avoid the Title 8 restrictions, many facility operators vent the vapors contained in the storage tanks into a control device, such as an internal combustion engine (ICE) or thermal oxidizer, until the tank interior is no longer considered a hazardous atmosphere, which would comply with the proposed amended rule requirements. Additionally, concern for nearby schools and residences as well as the potential for Rule 402 – Nuisance violations keeps facility operators from discharging odorous VOC emissions.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

PAR 1149 is a discretionary action, which has potential for resulting in direct or indirect change to the environment and, therefore, is considered a "project" as defined by the California Environmental Quality Act (CEQA). SCAQMD is the lead agency for the proposed project and has prepared this ~~draft~~ Final 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 or negative declaration once the Secretary of the Resources Agency has certified the regulatory program. SCAQMD's regulatory program was certified by the Secretary of the Resources Agency on March 1, 1989, and is codified as SCAQMD Rule 110. Pursuant to Rule 110, SCAQMD has prepared this ~~draft~~ Final EA.

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, the SCAQMD has prepared this ~~draft~~ Final EA to address the potential adverse environmental impacts associated with the proposed project. The ~~draft~~ Final EA is a public disclosure document intended to: (a) provide the lead agency, responsible agencies, decision makers and the general public with information on the environmental effects of the proposed project; and, (b) be used as a tool by decision makers to facilitate decision making on the proposed project.

SCAQMD's review of the proposed project shows that the proposed project would not have a significant adverse effect on the environment. Therefore, pursuant to CEQA Guidelines §15252, no alternatives or mitigation measures are required to be included in this ~~draft~~ Final 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 March 11, 2008 to April 9, 2008. One comment letter was received from the public and is included with a response to the comment in Appendix D.

PROJECT LOCATION

PAR 1149 would affect commercial facilities located throughout the SCAQMD's jurisdiction. The SCAQMD has jurisdiction over an area of 10,473 square miles, consisting of the four-county South Coast Air Basin (Basin) and the Riverside County portions of the Salton Sea Air Basin (SSAB) and the Mojave Desert Air Basin (MDAB). The Basin, which is a subarea of the district, is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The 6,745 square-mile Basin 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 and MDAB is bounded by the San Jacinto Mountains in the west and spans eastward up to the Palo Verde Valley. The federal non-attainment area (known as the Coachella Valley Planning Area) is a subregion of both Riverside County and the SSAB and is bounded by the San Jacinto Mountains to the west and the eastern boundary of the Coachella Valley to the east (Figure 1-1).

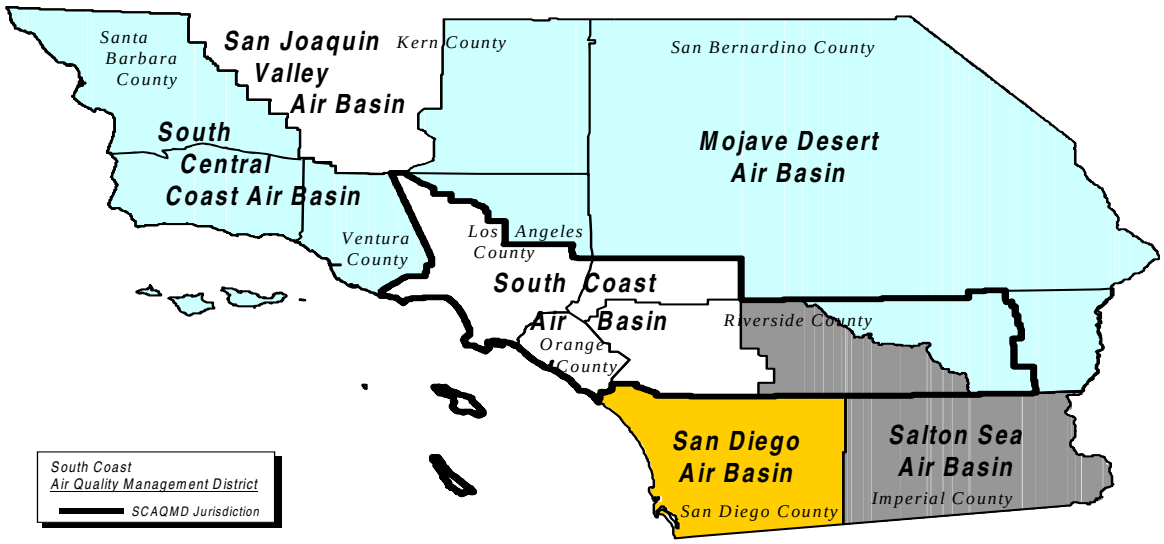

Figure 1-1
Boundaries of the South Coast Air Quality Management District

PROJECT OBJECTIVE

The objective of PAR 1149 is to implement the 2007 AQMP control measure FUG-04 – Further Emission Reductions from Pipeline and Storage Tank Degassing, to achieve additional VOC emission reductions. Additional VOC emissions reductions would assist the SCAQMD in efforts to attain and maintain with a margin of safety state and national ambient air quality standards for ozone, PM10 and PM 2.5.

PROJECT BACKGROUND

In 1987, Rule 1149 – Storage Tank Cleaning and Degassing, was adopted to reduce VOC emissions from degassing operations of stationary storage tanks. The Standard Industrial Classification codes applied to affected facilities include the following: crude petroleum and natural gas (SIC code 1311), paints, varnishes, lacquers, enamels, and allied products (SIC code 2851), cyclic organic crudes and intermediates, and organic dyes and pigments (SIC Code 2865), industrial organic chemicals, not elsewhere classified (SIC code 2869), petroleum refining (SIC code 2911), special warehousing and storage, not elsewhere classified (SIC code 4226), crude petroleum pipelines (SIC code 4612), refined petroleum pipelines (SIC code 4613), chemical and allied products, not elsewhere classified (SIC code 5169), petroleum bulk stations and terminals (SIC code 5171), and automotive dealers and gasoline service stations (SIC code 5541).

At the time of adoption, staff estimated that 800 floating roof tanks, 213 fixed roof tanks and 33,600 underground storage tanks (UST) located at petroleum refineries and terminals, chemical plants and gasoline stations would be subject to the rule. Based on each tank being degassed once every ten years, an estimated 0.4 ton per day was expected to be controlled from floating and fixed roof tanks and another 0.3 ton per day was expected to be controlled from USTs.

The premise of the VOC emission reductions anticipated for the rule has been a differential equation describing the change in concentration in the tank over time:

$$dC/dt + QC/V = 0 \qquad \text{Equation 1}$$

where dC/dt is the change in concentration in the tank over time, Q is the flow rate, C is the final concentration and V is the volume.

The solution to the equation:

$$C = Co\ e\text{-}(Qt/V) \qquad \text{Equation 2}$$

when the final concentration is 10 percent of the initial concentration, or $C = 0.1C_o$, gives:

$$0.1Co = Co\ e^{-(Qt/V)} \qquad \text{Equation 4}$$

$$\text{or } 0.1 = e^{-(Qt/V)} \qquad \text{Equation 5}$$

Thus theoretically, to get a 90 percent reduction in VOC emissions, then $t = 2.3V/Q$. Or in other words, if a tank were to be degassed to a control device for a period of time equal to 2.3 volume turnovers, 90 percent of the emissions would be controlled. The use of the equation makes a key assumption which is that the storage tank has no product or sludge remaining in the tank when the degassing begins.

On July 14, 1995, the rule was amended to remove ambiguities in rule language relating to business and regulatory practices. Specifically, the clarifications included alteration of notification procedures and confirming that USTs to be degassed must be controlled per PAR 1149 even if they are removed from the ground. The 1995 amendments to the rule also extended the application of the rule to storage tanks that were undergoing product changes by adding the term "cleaning" to the applicability of the rule. The 1995 amendments did not increase emissions nor were they determined to have a significant adverse impact on the environment.

The 1995 amendments updated Rule definitions and requirements to ensure consistency with the current degassing practices employed by complying businesses at that time.

Overview of Current Regulatory Requirements

In addition to Rule 1149 there are a number of related local, state and federal rules and regulations that also control VOC emissions from fossil fuels and related organic products. These rules and regulations are briefly summarized in the following subsections.

SCAQMD Requirements

Rule 402
Rule 402 – Nuisance, prohibits facilities from discharging odorous emission, including OC emissions that may cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public.

Rule 463
SCAQMD Rule 463 – Storage of Organic Liquids, specifies emptying and refilling procedures that occur just before and after degassing operations. For example, while a tank is being drained of product, Rule 463 would apply and require the draining to be continuous. Once draining is complete, Rule 1149 would apply until product is reintroduced into the tank at which point Rule 463 would once again apply. While there are no vapor concentration limits directly associated with emptying or refilling, Rule 463 does have a vapor leak limit of 1,000 ppmv, expressed as methane.

Rule 1178
Rule 1178 - Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities applies to larger storage tanks at petroleum facilities and establishes additional control requirements and specifications to those included in Rule 463.

State Requirements

In California, the Office of the State Fire Marshall, Pipeline Safety Division regulates the safety of hazardous liquid transportation pipelines. The office inspects, tests and investigates to ensure compliance with state and federal pipeline safety laws. The state has provisions for maintaining pipelines and reporting and repairing leaks, but no provisions for controlling vapors from leaks or degassing operations.

Many pipeline degassing operations routinely achieve in practice the proposed requirements set forth in the proposed amended rule for safety reasons. California Code of Regulations, Title 8 - General Industry Safety Orders, has strict restrictions for entry into confined spaces with hazardous atmospheres such as petroleum storage tanks. In order to avoid the restrictions, many facility operators vent the vapors contained in the storage tanks into a control device until the tank interior is no longer considered a hazardous atmosphere, which would generally comply with the proposed amended rule requirements.

Federal Requirements

The Office of Pipeline Safety is the primary federal agency regulating pipelines. There are provisions for maintaining pipelines and reporting and repairing leaks, but no provisions for controlling vapors from leaks or degassing operations.

PROJECT DESCRIPTION

The following summarizes requirements and advisory provisions of the proposed amended rule. A copy of PAR 1149 is included in Appendix A.

Purpose and Applicability

The purpose was modified to specifically state that the rule is to reduce VOCs and toxic emissions from roof landings, cleaning, maintenance, testing, repair and removal of storage tanks and pipelines. Cleaning and degassing of pipelines opened to the atmosphere outside the boundaries of a facility has been added to applicability of the proposed amended rule. A statement that the applicability of the rule to tanks commences once the tank is emptied is included.

Definitions of Terms

New definitions for drain-dry breakout tank, facility, natural gas, Reid vapor pressure~~, true vapor pressure~~ and vapor tight condition were added. The definition for underground storage tank was removed. The limits for underground storage tanks were previously different and thus necessitated defining the difference between the tanks. The limits are now the same and differentiation is no longer necessary. The definition of vapor leak was reduced from a detection of VOC compounds in excess of 10,000 parts per million volume (ppmv) to 5,000 ppmv. Specific source test methodology was also removed from the definition of vapor leak. The definition of VOC was replaced with a reference to the definition in Rule 102.

Requirements

- Remove time and equipment requirements in paragraphs (c)(5) and (c)(6) and replace with a vapor concentration requirement of 5,000 ppmv, measured as methane. The concentration must be met for at least one hour after degassing has been completed. This will prevent tanks with excess product residual or sludge from being opened prematurely. The proposed vapor concentration standard conservatively translates to a ten percent LEL already met by many degassing operations. The vapor concentration standard will capture the majority of emissions created by product residual and sludge. Any technique, including liquid displacement, is allowed as long as any vapor displaced is routed to an approved vapor recovery system and the vapor concentration standard is met. In most instances, companies will utilize the same techniques currently in use but be required to do so for a longer period of time. However, new innovations and processes may be developed to meet the proposed standard. By establishing a standard as opposed to one or more control techniques, the rule provides flexibility to industry to apply technological advances.
- Extend the applicability of the rule to pipeline and to more above ground storage tanks (see Table 1-1).

Table 1-1
Proposed Changes to Storage Tank Applicability

Vapor Pressure	Typical Products	Current (gallons)	Proposed (gallons)
3.9 psi RVP	Gasoline	19,815	500
2.6 psi RVP	Crude	39,630	26,420
0.1 psi TVP	Kerosene	N/A	100,000

- Lower the VOC vapor concentration of a Vapor Leak from 10,000 ppmv to 5,000 ppmv. This will make the Vapor Leak standard consistent with the vapor concentration standard. It will require all the hoses, fittings and connections to meet the same standard the tank or pipeline is required to meet. It differs from the requirements of "Vapor Tight" in Rule 463 (1,000 ppmv) and Rule 1178 (500 ppmv) because product and residual is being removed from the tank or pipeline instead of "stored" to which Rule 463 applies. The proposed amended rule would also remove the test method from the definition and place it in the Test Methods section. The test method will include directions for distance and/or placement of the probe inlet. For storage tanks, the probe inlet shall be one foot above the bottom or sludge. ~~Cylindrical tanks must be monitored at least two feet from the inner surface of the wall. Pipelines shall be monitored one foot or more from the pipeline.~~ All monitoring measurements are to be recorded and maintained to verify compliance with the vapor concentration standards.
- Require floating roofs that rest on support legs to be free of vapors, vented to a control device or, as an additional compliance option for drain-dry breakout tanks, be maintained in a vapor tight condition of 500 ppmv measured as methane. A compliance schedule is included for drain-dray breakout tanks that must be modified to meet the compliance option. Monitoring would be required monthly and records for monitoring results shall be maintained to verify compliance. While the roof rests on its support legs, the seals may lose effectiveness and fugitive emissions may occur. Roof landings may occur during product changes crude oil is received from overseas and when products are sold from one company to another. This will address a common situation and codifies an enforcement policy. Definitions for "Drain-Dry Breakout Tank" and "Vapor Tight Condition" will be included.
- Require vacuum trucks that remove product residual and sludge from pipeline and storage tanks subject to the rule to exhaust vapors into a control device. Vacuum trucks are not designed to store vapors or control vapors themselves. When vacuum trucks pump product into their tanks, vapors are created and may escape to the atmosphere if not properly controlled.
- Limit the exhaust concentration of control devices used to 500 ppmv, measured as methane. In many cases the vapor concentration in a tank can be greater than 100,000 ppmv. Ninety percent control would allow 10,000 ppmv to escape and even 99 percent control would allow 1,000 ppmv to escape. This will set a stringent, yet achievable standard that is consistent with other SCAQMD rules.
- Require that product residual and sludge taken from pipeline and storage tanks subject to the rule is stored or disposed into closed containers or control systems free of liquid and vapor leaks. This will reduce emissions that might occur while the waste material is waiting further processing. Prior to the completion of degassing operations, all waste shall be disposed or stored in closed containers or control systems. An exception will be included for draining

liquid from pipeline as long as the draining is continuous and the liquid is immediately transferred into a closed container. This will accommodate field repair of pipeline where draining into closed containers may lead to spillage and soil contamination. Once degassing has been completed per the proposed amended rule requirements, any remaining sludge should be mostly VOC free and can be transferred into storage bins or other appropriate waste containers. However, vacuum trucks used to collect liquid and/or sludge from tanks and pipelines subject to this rule must continue to limit their exhaust to 500 ppmv, measured as methane.

- Eliminate the emergency notification requirements and shorten the notification period and duration as well as eliminating the need for authorization. The notification procedure will be streamlined requiring between two hours and two days notification before degassing takes place. It is common currently to have several duplicate notifications for a single degassing event. In addition, emergency degassing operations are delayed while waiting for the emergency to be approved by an authorized agency officer allowing uncontrolled VOC emissions into the atmosphere. Most emergency situations will take longer than two hours to get degassing equipment on-site. In the rare instance where an emergency occurs and degassing equipment is available in less than two hours, the facility may utilize Rule 430 – Breakdown Provisions. The new notification procedures will allow more flexibility to affected sources and improve the accuracy of the notifications.
- Add a definition for Natural Gas and exempt natural gas pipeline from the provisions of the rule. Natural gas is comprised mostly of methane which is not considered VOC.
- Include a quantification protocol for voluntary greenhouse gas reductions. The provision in PAR 1149 is voluntary and limited to the control of methane emissions from the degassing of natural gas pipelines, which is currently exempt from the requirements of the rule. Efforts to limit methane emissions from natural gas pipeline repair and maintenance activities would allow companies to reduce greenhouse gas emissions. The quantification protocol calculation methodology standardizes the quantification of the reductions but is general enough to allow innovative techniques as they are developed.
- Test methods for determining True Vapor Pressure are included.

Exemptions

- Exempt small diameter pipeline and small lengths of pipeline depending on the vapor pressure of the liquid it previously contained. The pipeline exemptions are based on the exemptions for storage tanks with similar volumes. Thus a 500 gallon organic liquid storage tank is roughly equivalent to a 100 foot length of pipeline containing organic liquid. Similarly, 0.25 miles of organic liquid pipeline is roughly equivalent to a 26,420 gallon organic liquid storage tank.
- Remove the exemption for storage tanks exempted in Health and Safety Code Section 25281. Most of the tanks exempted under Health and Safety Code Section 25281 will not be subject to the proposed amended rule because they contain low vapor pressure products. However, gasoline tanks on farms with capacities greater than 500 gallons would now be subject to this rule. Gasoline tanks on farms with capacities greater than 1,100 gallons were already subject to the rule.
- Include an exemption when tanks and pipelines are opened to connect or disconnect degassing equipment, sample emissions, purging inert gas from pipelines when reintroducing product or to connect or disconnect the pipeline including associated control techniques or

control equipment. In the case of pipelines, the only access will likely be the opening directly where the pipeline is disconnected. During the process of opening the pipeline, the operation will be exempt. However, once the pipeline is open, measures must be taken to limit vapor emissions. Such measures may include, but are not limited to, blinding the pipeline, blocking with mud plugs or putting dry ice in the pipeline. Once the repair or maintenance activity is concluded, the vapor control measure may need to be removed to allow product flow. During the removal of the vapor control measure and subsequent reconnection of the pipeline, the rule will not apply.

EMISSIONS INVENTORY

The original emission inventory generated in 1987 estimated that uncontrolled emissions subject to Rule 1149 were 1.26 tons per day. Above ground storage tanks (AST) accounted for 0.5 ton per day while USTs accounted for the remainder. Based on the theoretical reduction from degassing over 2.3 air exchanges, the rule was expected to reduce emissions by 0.7 ton per day, with 0.4 tons per day being reduced from ASTs. The 1995 rule amendment made some new assumptions regarding how to calculate UST emissions but did not change the uncontrolled or expected emission reductions.

Over the 18 years since the initial emission inventory was generated, tank types, capacities and frequency of degassing incidents have changed. Initially, all tanks were assumed to be degassed once every 10 years and estimates were made to calculate the volume required to be degassed. The initial emission inventory was based on floating roof tanks having 56,991 cubic feet to be degassed. The average fixed-roof tank degassed had a volume of 125,214 cubic feet to degas. 101 tanks would be degassed each year (80 floating and 21 fixed). Assuming complete saturation of gasoline or crude oil, this accumulates to 0.5 ton of VOC per day.

Notification provisions in the rule have provided SCAQMD with detailed information including location, tank capacity and tank contents. Except in the relatively uncommon situation where a tank is degassed using liquid displacement, each time a tank is to be degassed by the facility or by a third party contractor, the degasser will notify SCAQMD. With this information, staff has been able to refine the estimates of the volume, contents degassed and frequency of degassing events. Most importantly, the notification data shows that the ASTs are degassed at more than three times the frequency predicted. While most ASTs still are degassed every ten years or so for periodic repair and maintenance activities, some ASTs are degassed on a weekly basis because they are used primarily for product changes.

A limitation, however, is the lack of information regarding whether the AST was a floating roof or fixed roof type. This is important because for equal capacity tanks, the volume degassed in a floating roof tank is approximately one tenth that of a fixed roof tank. For example, a typical tank height is approximately 60 feet. It would be necessary to degas the entire 60 feet of a fixed roof tank while a floating roof tank would only need to degas about six feet of space. Staff conducted an assessment to determine the frequency of degassing when comparing floating versus fixed roof tanks. Industry was consulted, staff made site visits and compared notifications with tank rosters. It is estimated that 90 percent of all AST degassing operations are for floating roof tanks.

Table 1-2 summarizes the notification data submitted to SCAQMD between 2004 and 2006.

Table 1-2
Notification Data Summary

Above Ground Storage Tanks	2004	2005	2006	3-Year Average
Number of AST degassed	295	268	421	328
Ave capacity AST (cubic feet)	765,335	732,731	720,202	739,422
Total volume degassed (million cubic feet)	44.7	38.9	60.0	47.9
Total uncontrolled emissions (tpd)	1.7	1.4	3.1	2.1

The summary data shows that an average of 328 ASTs with an average capacity of 739,422 cubic feet were degassed annually. The volume was calculated by using the volume reported and assuming that only 10 percent of the tanks were fixed and would degas the entire volume. For the remaining 90 percent of the ASTs, only about one-tenth of the volume reported would require degassing. This is because the roof of the floating roof tanks "floats" on the liquid in the tank until the tank liquid level is lower than the support legs which are generally about 6 feet tall. Using the ideal gas law methodology, the uncontrolled average annual emission inventory estimate from ASTs would be 2.1 tons per day. The vapor pressure and molecular weight were determined from the product in the tank. The ideal gas law methodology assumes that complete saturation has had time to occur and that there are no additional sources of emissions. It is calculated as follows:

$$E = (VP / 14.7 \text{ psia}) * (MW / 379 \text{ ft}^3) * V$$

Where

E = emissions, lb
VP = vapor pressure, psia
14.7 psia is atmospheric pressure under standard conditions
MW = molecular weight, lb/lb-mole
379 ft^3 is the standard cubic feet per lb-mole at standard conditions
V = volume, cubic feet

However, the actual saturation rate depends on a variety of factors including temperature, agitation and time. For example, a completely filled fixed roof gasoline tank quickly drained would have a lower saturation rate compared to the same tank that was near empty when drained. Another factor complicating the ideal gas law methodology is sludge and product residue remaining in the tank when degassing commences. Additional hydrocarbon vapors are released from the sludge and residue while the tank is degassed.

In order to get a clearer picture of actual emissions being generated from tank degassing operations, 56 degassing logs were reviewed. The logs indicate that there are fewer emissions in the storage tanks than the ideal gas law methodology would suggest. The actual emissions coming from tank degassing are 69 percent of the expected emissions using the ideal gas

methodology. While most tanks have initial vapor concentrations greater than 100 percent LEL (roughly 50,000 ppmv, measured as methane), this is well below complete saturation. A possible explanation is that the tanks are drained faster than the liquid can evaporate. Once drained, degassing operations take place sooner than sludge and product residual can saturate the vapor space. Thus where the ideal gas law methodology would expect complete saturation, only partial saturation is seen. There may also be some unquantifiable loss when the contents of the tank are being pumped out of the tank. Vapor may be inadvertently removed if some part of the vacuum hose is above the liquid level.

Additionally, the degassing logs show that sludge and product residual significantly contribute to the emissions emanating from the storage tanks. A tank with partial saturation should be able to degas in a shorter time period than a completely saturated tank. However, the logs indicate that degassing actually takes a much longer time. On average, it takes two to three times longer because product residual and sludge continue to release vapors into the tank being degassed.

In the example provided in Table 1-3, a sample degassing log is examined. A floating roof gasoline tank with a vapor space of 7,921 cubic feet (59,249 gallons) is to be degassed. To comply with the current regulation, the company must degas at least 18,218 cubic feet of volume. The initial inlet concentration (150 percent LEL) is well below complete saturation used for an ideal gas calculation (approximately 600 percent LEL). After just over two hours, 2.3 air exchanges has been surpassed with an associated 149 pounds of VOC reduced. However, at least that much more remains in the tank and is not controlled until the inlet concentration is reduced below ten percent LEL. In the example tank, the emission reduction at 2.3 air exchanges is approximately 40 percent and the actual emissions are about 74 percent of the expected emissions.

Closer examination of individual tank logs reveals a wide variation in the actual emissions degassed from the tank. Some tanks have emissions much lower than expected suggesting a tank relatively free of sludge and product residual that was full to begin with and drained quickly. Others have emissions greater than expected probably because there was a larger vapor space that had time to reach equilibrium and/or significant amounts of sludge and product residual that continued to evaporate while the tank was being degassed. Theoretically, 2.3 air exchanges should reduce emission by 90 percent but the logs indicate an actual reduction rate of only 37 percent.

Using the notification data information and comparing the ratios of expected versus actual and expected versus 2.3 air exchanges we can determine how many pounds of emission can be captured by adopting a vapor concentration standard and comparing it to amount of emissions captured by the current standard of 2.3 air exchanges (see Table 1-4).

Comparing the two methods to calculate emission inventory shows that the there is a smaller overall inventory using emissions from degassing logs. However, more emissions reductions can be realized by further restrictions in the rule, particularly by the establishment of a vapor concentration standard.

In addition to the already regulated ASTs and USTs, the proposed rule amendment would lower the tank capacity and vapor pressures subject to the regulation. ASTs of capacities of 500 gallons or greater containing gasoline would be subject to the rule. The 100,000 liter (26,420 gallon) tanks or greater containing crude oil or other products with Reid vapor pressure greater than 134 mm Hg (2.6 psi) would now be subject to the rule. And any tank larger than 378,500 liters (100,000 gallons) containing a product with a Reid vapor pressure greater than five mm Hg (0.1 psia) would be subject to Rule 1149.

Survey data and tank rosters provided by major refiners indicate that approximately 470 new tanks would be subject to the rule. The average capacity of the newly applicable tanks reported by the refiners is 2.5 million gallons. The average of the newly applicable tanks at terminals and other locations is 2.2 million gallons. The overall average for newly applicable tanks is 2.3 million gallons. In comparison, the average size of already applicable tanks is 5.5 million gallons or nearly double the volume of the newly applicable tanks.

Table 1-3
Degassing Log Example

Gasoline Tank Example
Volume to be Degassed: 7921 cubic feet
Expected Emissions: 502 pounds of VOC

Time	Flow from tank (cfm)	Cumulative Volume (cubic feet)	Inlet Concentration (% LEL)	Hourly emissions (pounds)	Cumulative Emissions (pounds)
1345	100	0	150	0.0	0.0
1400	200	1,500	125	5.7	5.7
1500	700	13,500	100	37.7	43.3
1600	800	55,500*	76	105.5	148.8
1700	1,000	103,500	48	91.6	240.5
1800	1,000	163,500	21	72.3	312.8
1900	2,100	223,500	9	31.6	344.5
2000	2,100	349,500	7	28.5	372.9

*2.3 Air Exchanges Surpassed

Expected	2.3 Air Exchanges	Actual
502.0	148.8	372.9

Table 1-4
Emission Inventory Comparison

Description	Uncontrolled	2.3 Air Turnovers	Remaining
Total emissions using ideal gas law (tpd)	2.1	1.9	0.2
Total emissions from degassing logs (tpd)	1.42	0.5	0.92

Using the actual tank capacities and product contents from those refiners who provided the survey data, the average uncontrolled degassing emission from a newly applicable tank is 2,370 pounds of VOC. Applying the same correction factor of actual versus expected emissions (0.685) seen from the degassing logs summarized in Table 3, there would be 1,620 pounds of uncontrolled emission from degassing each newly applicable tank. Conservatively assuming that the tanks are degassed once every ten years, the annual uncontrolled emissions from newly applicable tanks would be 76,140 pounds (0.1 ton per day).

Aside from storage tanks, pipelines containing organic liquid would also be subject to the rule. According to the California Office of the State Fire Marshall, there are 7,500 miles (approximately 4,000 miles in the South Coast Air Basin) of hazardous liquid transportation pipeline within the state. California laws mandate that each pipeline system be tested at least every five years. Testing usually consists of hydrotesting or use of internal inspection tools sometimes known as "smart pigs". Most pipeline inspection and repair activities already vent vapors to an uncontrolled vacuum truck. The result is 4.2 million cubic feet annually of gasoline or crude oil vapor could be released to the atmosphere. The proposed amended rule would apply to pipelines outside of permitted facilities that were six inches or greater in diameter. Pipelines shorter than 100 feet in length are exempt as are pipelines shorter than 0.25 mile containing or previously containing VOC liquids having a Reid vapor pressure less than 202 mm Hg. Staff estimates the addition of pipelines to the proposed amended rule adds 0.4 ton per day to the emission inventory.

In the 1987 rule underground storage tanks (USTs) originally contributed 0.63 tons per day to the uncontrolled emission inventory and the rule was expected to reduce 0.3 ton per day. In 1995, the staff report indicated that the number of USTs had decreased by 70 percent. However, emission calculations in the 1995 Final Staff Report for Proposed Amended Rule 1149 – Storage Tank Degassing show that the emission reductions remained the same because emissions from USTs were higher than originally estimated and industry practices now reduced emissions by 99 percent. Over the past three years, an average of 501 USTs were degassed with an average capacity of 11,346 gallons. The uncontrolled emissions from USTs were 0.07 ton per day calculated by adjusting the number of tanks and average volume in comparison to estimates made in previous staff reports. Using the 99 percent control efficiency claimed by the 1995 rule amendment, the emission reduction from USTs were also 0.07 tons per day. No emission reductions from USTs are claimed in this proposed amendment. In summary, the total uncontrolled emissions from all sources subject to the proposed amendments to Rule 1149 is 1.997 tons per day with 0.57 ton per day controlled by existing regulations (see Table 1-5). Therefore the remaining emission inventory to be further regulated by the proposed amendments to Rule 1149 is 1.42 tons per day of VOC.

Table 1-5
Emission Inventory from All Rule 1149 Sources

Source	Emissions Inventory Before Control	Emissions Controlled by Existing Rule 1149	Remaining Emissions Inventory
ASTs currently subject to rule (tpd)	1.42	0.5	0.92
USTs (tpd)	0.07	0.07	0
Newly applicable ASTs (tpd)	0.1	0	0.1
Pipelines (tpd)	0.4	0	0.4
Total emissions from all Rule 1149 Sources (tpd)	**1.997**	**0.57**	**1.42**

CHAPTER 2 - ENVIRONMENTAL CHECKLIST

Introduction

General Information

Environmental Factors Potentially Affected

Determination

Environmental Checklist and Discussion

INTRODUCTION

The environmental checklist provides a standard evaluation tool to identify a project's potential adverse environmental impacts. This checklist identifies and evaluates potential adverse environmental impacts that may be created by the proposed project.

GENERAL INFORMATION

Project Title:	Proposed Amended Rule (PAR) 1149 – Storage Tank and Pipeline Cleaning and Degassing
Lead Agency Name:	South Coast Air Quality Management District
Lead Agency Address:	21865 Copley Drive Diamond Bar, CA 91765
CEQA Contact Person:	Mr. James Koizumi (909) 396-3234
Rule Contact Person	Mr. Michael Morris (909) 396-3282
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 1149 would implement the 2007 AQMP control measure FUG-04 – Further Emission Reductions from Pipeline and Storage Tank Degassing, to achieve additional VOC emission reductions. PAR 1149 would extend the applicability of the rule to small above ground organic liquid storage tanks, pipelines, and large storage tanks previously exempted because of lower vapor pressure products. The current rule requires vapors contained in storage tanks to be vented to a control device for a pre-determined length of time or to be displaced by a liquid into a control device. PAR 1149 would instead require a vapor concentration of 5,000 ppmv, measured as methane, before vapors are vented to atmosphere. PAR 1149 would streamline the notification process and clarify requirements for vacuum trucks and containers used for storing liquid and sludge removed during the cleaning process. PAR 1149 introduces a greenhouse gas (GHG) quantification protocol, where GHG emissions may be voluntarily reduced by controlling methane emissions from natural gas pipelines.
Surrounding Land Uses and Setting:	Not applicable
Other Public Agencies Whose Approval is Required:	Not applicable

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The following environmental impact areas have been assessed to determine their potential to be affected by the proposed project. As indicated by the checklist on the following pages, environmental topics marked with an "✓" may be adversely affected by the proposed project. An explanation relative to the determination of impacts can be found following the checklist for each area.

☐ Aesthetics	☐ Agriculture Resources	☑ Air Quality
☐ Biological Resources	☐ Cultural Resources	☑ Energy
☐ Geology/Soils	☑ Hazards & Hazardous Materials	☐ Hydrology/ Water Quality
☐ Land Use/Planning	☐ Mineral Resources	☑ Noise
☐ Population/Housing	☐ Public Services	☐ Recreation
☑ Solid/Hazardous Waste	☐ Transportation/ Traffic	☑ 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 will be 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 (a) have been analyzed adequately in an earlier ENVIRONMENTAL ASSESSMENT pursuant to applicable standards, and (b) 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: March 7, 2008 **Signature:** Steve Smith

Steve Smith, Ph.D.
Program Supervisor

ENVIRONMENTAL CHECKLIST AND DISCUSSION

The proposed project would expand the applicability of the rule to small above-ground organic liquid storage tanks, pipeline with capacities of 500 gallons or more and all above ground storage tanks with capacities of 100,000 gallons or more or previously containing VOC product with vapor pressures greater than five millimeters of mercury. PAR 1149 would replace the 90 percent control device efficiency with a limit on the exhaust concentration of control devices to 500 parts per million (ppm) vapor, measured as methane. PAR 1149 would replace time and equipment requirements with a vapor concentration standard of 5,000 ppm, measured as methane; streamline notification procedures; require the control of exhaust vapors from vacuum trucks associate with product residual and sludge from pipeline and storage tanks; lower the VOC vapor concentration of a vapor leak from 10,000 ppm to 5,000 ppm; and require that floating roof tanks that are emptied for product changes to degas or the VOC concentration is reduced to less than 5,000 ppmv while the floating roof rests on its support legs, unless it is a drain-dry internal floating roof breakout tank maintained in a vapor tight condition outside the tank shell and monitored monthly. PAR 1149 introduces a greenhouse gas (GHG) quantification protocol, where GHG emission may be reduced by controlling methane emissions from natural gas pipelines.

Degassing Storage Tanks

The degassing process consists of several procedures intended to leave the tank free of product, sludge and vapors. The bulk of the product in the tank, if any, is pumped into another tank. A vacuum truck then sucks out the residual product. At this point the tank is largely free of liquid but may contain a relatively small amount of liquid, some sludge and is filled with vapors. Depending on the amount of sludge, the tank may be cleaned and rinsed before degassing (purging the gas) begins. Purging the gas is generally done by sucking the vapors out of the tank or displaced with a lower vapor pressure product. Because of the provisions in Rule 1149, the vapors purged are vented to a control device or vapor recovery system. These controls devices are typically portable engines or thermal oxidizers that combust the vapors as fuel. Because the vapor concentration may fluctuate substantially during the process, propane is used as an auxiliary fuel to ensure that enough fuel is available to maintain combustion at all times.

Other techniques used to control vapors from storage tanks include liquid balancing and water or chemical washing or rinsing. Liquid balancing consists of draining the tank until just prior to the floating roof resting on its support legs. The tank is then filled with a low vapor pressure liquid, allowing the chemicals to mix, and repeating until the desired vapor pressure of the liquid blend is reached. Because there is no vapor space created during the mixing process, no vapors are created. When the tank is finally completely drained, only vapors from the low vapor pressure liquid are created.

Water or chemical washing or rinsing cleans the tank of product and residual sludge thus diminishing the amount of VOC vapor concentration in the tank. The storage tank remains closed or air tight during the cleaning process. Water or a chemical is added to the tanks, sometimes with a high pressure jet. The sludge created is pumped out and, at a minimum, further emissions from sludge and product residual will be minimized. Once the tank has been degassed, the tank will be opened to ventilate the remaining vapors. This ventilation can be done by opening a vent and pulling fresh air into the tank or using a blower to force the vapors out of the tank. There may be a final cleaning and rinsing step to remove any last remnants of sludge.

Degassing Pipelines

Proposed Amended Rule 1149 will require that vapors from pipelines be controlled such that less than 5,000 ppmv measured as methane be emitted to the atmosphere. In trying to limit emissions, pipeline operators have several options available to them. Possible control measures include blinding or blocking the opening of a pipeline with a physical barrier such as a "pig", mud plug or valve, a chemical or gaseous barrier such as dry ice, nitrogen or diesel, or venting vapors to a control device such as carbon adsorption, thermal oxidizer or internal combustion engine.

Physical barriers would be the least expensive and mostly likely used option. Very little equipment or supplies are involved and there is only a small amount of labor involved. Chemical and gaseous barriers are also relatively inexpensive. Chemical and gaseous barriers require some amount of supplies. Filling a shorter length of pipeline with nitrogen remains cost-effective though filling a large length of pipeline (several miles) with nitrogen would be the most expensive option overall. There is also some waste that must be disposed of as well. However, in general, the most expensive option would be to vent vapors to a control device. The labor involved is usually the greatest and specialized equipment is needed.

To get a better understanding of current practice and plans being made to meet the proposed requirements, the two largest pipeline operators, and several refinery pipeline companies were contacted. Altogether, they represent approximately 90 percent of pipeline ownership in the South Coast Air Basin. In all cases, the work area where maintenance and repair activities took place was maintained at a vapor concentration below 10 percent of the LEL.

Under existing practices the companies have no control of fugitive emissions beyond work areas, purge pipelines with nitrogen, displace gasoline or crude vapors with diesel fuel, or plug lines with mud plugs or dry ice. One company always uses ICE engines or thermal oxidizers except when receptors are several miles away from the site.

The largest two companies would use carbon adsorption, when necessary. Neither would use ICEs or thermal oxidizers. One company would investigate increased use of pigging or dry ice. They may use carbon adsorption, but are not planning to use ICE or thermal oxidizers. The company that does use ICE or thermal oxidizers for areas would continue the existing practice, so there would be no change caused by PAR 1149.

The 10 percent of pipeline owners/operators that were not contacted have comparatively shorter pipelines. It is believed that these owners/operators would operate similar to the large pipeline owners/operators. Since the ICE/thermal oxidizer option is the most expensive and labor intensive option, it is believed that the smaller pipeline owners/operators would not choose this option.

Greenhouse Gas Reduction Quantification Program

There is an increasing need to provide a valid, regional credit mechanism for global warming gases in the South Coast Air Basin. The SCAQMD Governing Board has proposed creation of a voluntary carbon-reduction credit program, to be called the SoCal Climate Solutions Exchange. This program, to be developed in the near future in a separate rule making activity, will incentivize cost-effective emission controls. The applicability, use, recordkeeping, issuance and

all other aspects of the carbon-reduction credit will be addressed when the SoCal Climate Solutions Exchange program is developed.

The purpose of Rule 1149 is to reduce VOC emissions from storage tank and pipeline degassing operations. Methane, a VOC exempt compound, is present in natural gas pipelines. The proposed amended rule will include a quantification protocol for companies who voluntarily control methane emissions from natural gas pipelines. While methane is not a VOC, it is a global warming gas with a global warming potential more than 21 times that of CO2.

Methane losses from natural gas pipelines mainly occur during maintenance and repairs. Because of the vital nature of this utility, maintenance and repairs must be accomplished as rapidly as possible. When a situation arises requiring the pipelines to be opened to atmosphere, the pipeline is closed at nearby locations on either side of the opening. The gas in the pipelines is allowed to blowdown or be purged from the pipeline. The repair or maintenance work is completed and the pipeline is reopened allowing the natural gas to flow once again.

The most straightforward technique to minimize methane emissions is to minimize the length of pipeline that will be opened to atmosphere. Automated valves located several miles apart would be closed to isolate the area. Then manual valves located closer to the source could be closed to minimize the amount of blowdown gas that would otherwise be released. Other reductions might be possible from bleeding off the gas to a storage container or control device. If a combustion process is utilized, the carbon reduction would be reduced by four percent to reflect the subsequent release of CO2 created from burning the methane. Any supplemental fuel required for combustion is also subtracted from carbon reductions as it too is combusted into CO2. It is intended that the non-proscriptive calculation provided in PAR 1149 will provide an incentive to develop innovative techniques to minimize methane emissions. The global warming potential (GWP) for methane is taken from the International Panel on Climate Change (IPCC) Second Assessment Report. In the report, the IPCC established a GWP (100 years) for methane of 21 carbon dioxide equivalent units.

The quantification protocol calculation methodology standardizes the quantification of the reductions but is general enough to allow innovative techniques as they are developed. The review process gives the SCAQMD the opportunity to assess the activity to validate the process and quantify excess reductions.

		Potentially Significant Impact	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) & d) The major requirements of PAR 1149 would be the expansion of the applicability of the rule to above-ground organic liquid storage tanks, pipeline and large above ground storage tanks previously exempted by vapor pressure and more stringent control requirements. The result of these new requirements would be pipelines and more tanks would require degassing procedures that would require vapor recovery for vacuum trucks and venting purged vapors from the tanks or pipelines to control devices or vapor recovery systems. Other techniques such as liquid balancing and water or chemical washing or rinsing may be employed.

PAR 1149 is not expected to require any new ~~construction or~~ development. PAR 1149 would require minor construction to 14 drain dry breakout tanks. All construction would occur within the breakout tanks, so adverse construction impacts to aesthetics are not expected. Facility operators are likely to use portable control devices at new and existing sources. The portable control devices are for newly captured tanks may be ICEs or thermal oxidizers. Existing storage tanks are typically controlled by ICEs or thermal oxidizers. Degassing operators are expected to be limited to two days on average. Affected facilities are expected to be industrial facilities in industrial areas. The addition of pump trucks, portable ICEs or thermal oxidizers or washing equipment is not expected to appear substantially different than the delivery and transport trucks,

and operation and maintenance activities. In addition, storage tanks are typically place in areas that are protected by fences or walls to prevent tampering or vandalism.

Pipelines are expected to be controlled by carbon adsorption. Pipelines may be in open areas, but activities associated with PAR 1149 are not expected to be substantially visibly different than other operational and maintenance activities. Therefore, the proposed project is not expected to block views from scenic highways or corridors or affect the visual continuity of the surrounding area.

Additional light or glare would not be created which would adversely affect day or nighttime views in the area. Portable ICEs and washing equipment is unlikely to generate light. A glow may be generated by thermal oxidizing units, but is not expected to generate a glare or to be extremely bright. Vapor degassing is expected to be completed during daylight hours.

Based upon these considerations, significant adverse aesthetics impacts are not anticipated and will not be further analyzed in this ~~Draft~~ Final EA. Since no significant aesthetics impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	**Less Than Significant Impact**	**No Impact**
II.	**AGRICULTURE 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)	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☑

Significance Criteria

Project-related impacts on agricultural 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 would involve changes in the existing environment, which due to their location or nature, could result in conversion of farmland to non-agricultural uses.

II. a), b), & c) PAR 1149 would reduce VOC emissions from storage tanks and pipelines during cleaning and degassing. PAR 1149 would not require any new development ~~or modifications to existing buildings or other structures to comply with the proposed amended rule~~. PAR 1149 would require minor construction (shortening of support legs) to 14 drain dry breakout tanks. All construction would occur within the breakout tanks, so adverse construction impacts to agricultural resources are not expected. All PAR 1149 activities are expected to occur within the boundaries of existing facilities or along existing pipeline right-of-ways. Therefore, PAR 1149 is not expected to convert any classification of farmland to non-agricultural use or conflict with zoning for agricultural use or a Williamson Act contract.

Based upon these considerations, significant agricultural resource impacts are not anticipated and will not be further analyzed this ~~Draft~~ Final EA. Since no significant agriculture resources impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
III. AIR QUALITY. 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)?	☐	☑	☐

		Potentially Significant Impact	Less Than Significant Impact	No Impact
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)?	☐	☐	☑

III. a) and f) Attainment of the state and federal ambient air quality standards protects sensitive receptors and the public in general from the adverse effects of criteria pollutants which are known to have adverse human health effects. PAR 1149 contributes directly to carrying out the goals of the 2007 AQMP by implementing control measure FUG-04. Consistent with control measure FUG-04, PAR 1149 is expected to reduce VOC emissions from all affected source categories, which in turn, will contribute to attaining the state and federal ambient air quality standards. Thus, because PAR 1149 implements control measure FUG-04 from the 2007 AQMP, it is not expected to conflict or obstruct implementation of the applicable AQMP.

Implementing PAR 1149 would not diminish an existing air quality rule or future compliance requirement, nor conflict with or obstruct implementation of the applicable air quality plan. It would implement in part the 2007 AQMP control measure FUG-04.

III. b), c) & d) For a discussion of these items, refer to the following analysis.

Air Quality Significance Criteria
To determine whether or not air quality impacts from adopting and implementing the proposed amendments are significant, impacts will be evaluated and compared to the following criteria. 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.

Construction Air Quality Impacts
~~PAR 1149 would not require any construction; therefore, there would be no adverse construction impacts.~~ Subsequent to the release of the Draft EA, one owner/operator stated that construction would be required on drain dry tanks to comply with PAR 1149. In order to comply with PAR 1149, this owner operator would need to cut the roof support legs to one-foot high on their drain dry tanks.

Table 2-1
Air Quality Significance Thresholds

Mass Daily Thresholds		
Pollutant	**Construction**	**Operation**
NOx	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM10	150 lbs/day	150 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) and Odor Thresholds		
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Hazard Index ≥ 1.0 (project increment) Hazard Index ≥ 3.0 (facility-wide)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
Ambient Air Quality for Criteria Pollutants [a]		
NO2 1-hour average annual average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.25 ppm (state) 0.053 ppm (federal)	
PM10 24-hour average annual geometric average annual arithmetic mean	10.4 μg/m^3 (recommended for construction) [b] & 2.5 μg/m^3 (operation) 1.0 μg/m^3 20 μg/m^3	
Sulfate 24-hour average	1 ug/m^3	
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) 9.0 ppm (state/federal)	

[a] Ambient air quality thresholds for criteria pollutants based on SCAQMD Rule 1303, Table A-2 unless otherwise stated.
[b] Ambient air quality threshold based on SCAQMD Rule 403.

KEY: lbs/day = pounds per day ppm = parts per million ug/m^3 = microgram per cubic meter ≥ greater than or equal to

Construction would occur over six to ten weeks. The storage tanks would be drained and degassed. While empty the storage tanks would undergo a routine 10 year API inspection that is already required by other regulatory agencies. The drainage, degassing and inspection would take approximately one week. The storage tank would then be water blasted and coatings would be removed where the legs would be cut. A bobcat loader would be used to support the storage tank roof, while cutting and welding operations occur. Cutting and welding are expected to last three to four days. Only the removal of coatings around where the legs would be cut, and the cutting and welding are attributed to PAR 1149. The remaining operations are considered apart of the 10 year API inspection of the storage tank.

To reduce the economic impact and any bottlenecks in production only one storage tank would be modified at a time. There are 32 drain dry tanks, but only 14 would need to be modified. Construction criteria emissions are presented in Table 2-2. Detailed calculations can be found in Appendix B.

Table 2-2
Peak Day Criteria Emissions from PAR 1149 - Construction Only

Description	CO, lb/day	NOx, lb/day	VOC, lb/day	SOx, lb/day	PM10, lb/day	PM2.5, lb/day
Construction	4.0	11	0.59	1.1	0.59	0.56

Operational Air Quality Impacts
PAR 1149 would generate emissions from the combustion of VOCs in thermal oxidizers or internal combustion engines during the degassing process and diesel-fueled heavy duty trucks used to deliver the thermal oxidizers or internal combustion engines.

VOC Emission Reductions

The proposed rule amendment would set a vapor concentration limit of 5,000 ppmv on tanks and pipelines subject to the rule. Connections, hoses, and vacuum trucks would also be required to keep emissions below 5,000 ppmv. Thermal oxidizers and internal combustion engines with afterburners are considered control technology for tanks. Carbon adsorption is expected to be used for pipelines. Alternative methods such as routing the exhaust to other tanks, applying chemicals or water to reduce vapors or any other means to reduce the tank or pipeline concentration would be allowed so long as hydrocarbon vapors with a concentration greater than 5,000 ppmv were not allowed to be vented to atmosphere. Control devices used to reduce the vapors in tanks and pipelines would be limited to an exhaust concentration of 500 ppmv, which is consistent with other SCAQMD rules.

A limit of 5,000 ppmv captures an estimated 90 percent or more of the remaining emissions. Utilizing the degassing logs, a comparison can be made between the quantity of emission captured when the 5,000 ppmv standard is reached and the total quantity of emissions in the storage tank. Reviewing the example in Table 1-3, almost 97 percent of emissions are captured when degassing to 5,000 ppmv (roughly ten percent LEL). Reviewing all of the storage tanks that met or exceeded the standard, a limit of 5,000 ppmv captures between 86.3 percent and 99.7 percent of emissions from tanks. The average emission reduction is 95.8 percent.

Adoption of a vapor concentration standard of 5,000 ppmv will reduce emissions from existing and newly applicable sources by at least 90 percent. The total annual uncontrolled VOC emissions from existing and newly applicable sources are 1.997 tons per day. The current provisions in the rule already reduce 0.57 tons per day of the uncontrolled VOC emissions. The proposed rule amendments will reduce VOC emissions by another 1.275 tons per day calculated based on the practice of degassing to 5,000 ppmv (see Table 2-32). Further controlling vacuum trucks used to remove residual product and sludge, requiring residual product and sludge to held in closed containers that are free of liquid and vapor leaks and establishing a vapor concentration requirement for control devices will limit fugitive emission losses.

Table 2-3~~2~~
Emission Reductions from All Rule 1149 Sources

Source	Emission Inventory, (ton/day)	Emissions Controlled by Existing Rule 1149, (ton/day)	Remaining Emissions Inventory, (ton/day)	Emissions Controlled by Proposed Amended Rule, (ton/day)
ASTs currently subject to rule	1.42	0.5	0.92	0.82
USTs	0.07	0.07	0	0
Newly applicable ASTs	0.1	0	0.1	0.09
Pipelines	0.4	0	0.4	0.36
Total emissions from all Rule 1149 sources	**1.997**	**0.57**	**1.42**	**1.275**

Along with reductions in VOC emissions from the proposed provisions of this rule, there would also be some increases in criteria pollutants because of increased use of control equipment. Except in the limited circumstances where liquid balancing is used, the primary methods of VOC control for storage tanks is oxidation using internal combustion engines and thermal oxidizers. Conservatively, it is assumed that all new storage tank sources would be controlled using either an internal combustion engine or thermal oxidizer. Undoubtedly, some sources will use liquid balancing and other technologies or degassing methods may be developed which do not require combustion.

Currently, VOCs from pipelines are typically not controlled. Almost all pipelines are expected to control VOC emission using carbon adsorption to comply with PAR 1149. There is one vendor that currently uses ICEs or thermal oxidizers when near receptors and vents to the atmosphere when receptors are distant. This vendor would use ICEs or thermal oxidizers for all pipeline segments whether near or far from receptors.

Over the past three years, 47.9 million cubic feet of tank space was degassed on average annually. Additionally, another 3.7 million cubic feet of degassing would be necessary with the proposed pipeline and smaller/low vapor pressure tank requirements. The total average amount of degassing would increase to 51.6 million cubic feet annually.

SCAQMD default emission factors were used for criteria pollutants emitted by thermal oxidizers and internal combustion engines except for NOx, CO and VOC from internal combustion engines. NOx, CO and VOC emission factors for internal combustion engines were taken from a source test conducted on an internal combustion engine fired with propane controlling vapors from a tank degassing operation. Like other internal combustion engines used for this purpose, it is equipped with a catalytic converter. The ratio of thermal oxidizer use (69 percent) to internal combustion engine use (31 percent) was determined from notification data.

Peak Day Activities

Affected facility owners/operators contact SCAQMD staff before degassing under the current rule. Based on the information collected from affected facility owners/operators, the highest Rule 1149 activity in the last four years occurred on April 13, 2006. On that day, two large gasoline tanks (4,380,000 and 3,360,000 gallon capacity), two large crude tanks (19,446,000 and 18,900,000 gallon capacity, and one small crude tank (1,596,000 gallon capacity) were degassed on the same day. Degassing occurred for approximately 24 hours during that peak day (47 hours total). SCAQMD estimates an additional 84 hours would be required to degas the same existing storage tanks according to PAR 1149 requirements, and seven hours would be required to degas an additional storage tank. Therefore, PAR 1149 would require an additional 91 hours for storage tanks on a peak day. Storage tanks are expected to be either degassed by ICEs or thermal oxidizers. Two new pipelines are expected to be degassed. The pipelines are expected to be degassed using carbon adsorption, so no indirect emissions would occur from the pipeline degassing process itself. The peak day projection is summarized in Table 2-~~4~~3.

Table 2-~~4~~3
Projected Peak Day Storage Tank Degassing Activity

Source	Capacity	Content	Hours to Degas under existing Rule 1149	Hours to Degas under PAR 1149	Increased Hours to Degas under PAR 1149
Existing	4,380,000	Gasoline	6.7	18.8	12.1
Existing	3,360,000	Gasoline	5.2	14.6	9.4
Existing	19,446,000	Crude	16.9	47.3	30.4
Existing	1,596,000	Crude	1.4	3.9	2.5
Existing	18,900,000	Crude	16.4	45.9	29.5
New AST	3,206,000	Xylene	N/A	7	7
New Pipeline	155,016	gasoline	N/A	6.2	6.2
New Pipeline	155,016	crude	N/A	3.4	3.4
Total hourly increase:					**100.4**

SCAQMD staff assumed that an extra heavy duty truck trip would be needed to meet PAR 1149 requirements for existing tanks. The additional heavy-duty truck trip would be used to deliver carbon adsorption units for sludge removal from tanks that hold heavy crude products. Storage tanks that are now exempted from Rule 1149, but would need to control VOCs during degassing pursuant to operating under PAR 1149, would require two heavy-duty truck trips to deliver carbon and thermal oxidizers or ICEs. Pipelines are expected to need one heavy-duty truck trips to deliver carbon adsorption units or thermal oxidizers or ICEs. Based on these assumptions, an additional seven heavy-duty truck trips would be required to degas storage tanks and pipeline on a worst-case day under PAR 1149. ~~Staffed assumed that there would need to be two truck trips associated with the degassing processes. Based on the peak day assumptions above, an additional six diesel truck trips would be required to degas the additional tank and two pipelines.~~

The emissions from control technology and diesel truck trips are presented in Table 2-5~~4~~. Total criteria emissions from construction and operations related to PAR 1149 are presented in Table 2-6. Detailed calculations are included in Appendix B. Since construction and operational emissions are expected to overlap, the criteria emissions from both construction and operations are compared to the operational significance thresholds. The operational significant thresholds are equivalent or lower than the construction thresholds. None of the criteria emissions from PAR 1149 exceed the SCAQMD significance criteria presented in Table 2-1. Therefore, PAR 1149 is not expected to be significant for criteria emissions.

Table 2-5
Peak Day Criteria Emissions from PAR 1149 - Operation Only

Description	CO, lb/day	NOx, lb/day	VOC, lb/day	SOx, lb/day	PM10, lb/day	PM2.5, lb/day
Control Technology	9	17	0.65	2.9	1.5	1.5
Mobile Source	2.6	17	0.59	0.022	0.31	0.28
Total	11	34	1.2	2.9	1.8	1.8

Table 2-6~~4~~
Total Peak Day Criteria Emissions from PAR 1149

Description	CO, lb/day	NOx, lb/day	VOC, lb/day	SOx, lb/day	PM10, lb/day	PM2.5, lb/day
Construction	4.0	11	0.59	1.1	0.59	0.56
Operational	12	37	1.3	2.9	1.9	1.9
Total	16	48	1.9	4.1	2.5	2.4
Operational Significance Thresholds	550	55	55	150	150	55
Significant?	No	No	No	No	No	No

Since construction and operational emissions overlap, the combined peak day construction and peak day operational emissions were added together and compared to the operational significance thresholds. The operational significance thresholds are equivalent or lower than the construction significant thresholds.

~~Description~~	~~CO, lb/day~~	~~NOx, lb/day~~	~~VOC, lb/day~~	~~SOx, lb/day~~	~~PM10, lb/day~~	~~PM2.5, lb/day~~
~~Control Technology~~	~~9~~	~~17~~	~~0.65~~	~~2.9~~	~~1.5~~	~~1.5~~
~~Mobile Source~~	~~2.6~~	~~17~~	~~0.59~~	~~0.022~~	~~0.31~~	~~0.28~~
~~Total~~	~~11~~	~~34~~	~~1.2~~	~~2.9~~	~~1.8~~	~~1.8~~
~~Significance Threshold~~	~~550~~	~~55~~	~~55~~	~~150~~	~~150~~	~~55~~
~~Significant?~~	~~No~~	~~No~~	~~No~~	~~No~~	~~No~~	~~No~~

Air Toxics

Air toxic emissions from combustion of propane were analyzed. Only combustion of propane was examined because based on discussions with vendors it is the fuel burned in the ICEs or

thermal oxidizers used for degassing. There would be an increase of toxic emissions from the vapors in the newly captured storage tanks, but since the constituents and concentration of the vapors in the tanks is unknown, these emissions were considered speculative and not included in the analysis.

One pipeline operator uses combustion to control VOC emissions near receptors. For pipeline segments that are several miles away from receptors the operator vents the vapors to the atmosphere. The pipeline operator stated that they would use combustion to control VOC emissions for all pipeline segments to comply with PAR 1149 (i.e., even the segments that are several miles away from receptors). There would be no increase in adverse air toxic impacts to receptors that are near pipeline segments since they are already controlled by combustion (i.e., no change in operation yields no change in emissions). There would be no increase in air toxic impacts to receptors that are several miles away from pipelines since the adverse air toxic impacts would be small for receptors that are over a mile away from the ICEs or thermal oxidizers.

The remaining pipeline operators contacted would use carbon adsorption to reduce VOC emissions under PAR 1149. Carbon adsorption reduces VOC emissions from pipelines, and therefore air toxic emissions during degassing. Therefore, there would be a reduction in toxic emissions from pipeline operators that use carbon adsorption.

Carcinogenic and chronic health risks are estimated for long term processes, so these health risks were not estimated. Since degassing is an infrequent event lasting at the most approximately 48 hours only acute health risks were estimated. Acute health risks were estimated from both ICEs and thermal oxidizers from newly captured storage tanks under PAR 1149. It was assumed that either two additional ICEs or two additional afterburners would be used at a single facility. Using the most conservative assumptions in a Tier II acute health risk assessment (i.e., 25 meter receptor distance, shortest stack height), the hazard index for both ICEs (0.7) and afterburners (0.001) were less than the significant threshold of 1.0. Therefore, PAR 1149 is not expected to be significant for health risk.

Greenhouse Gases

In addition to criteria pollutant emissions, combustion processes generate greenhouse gas (GHG) emissions that have the potential to affect global climate. The following GHG analysis focuses on CO2 emissions 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. U.S. Department of Energy, Energy Information Administration factors were used to determine carbon dioxide (CO2) emission factors.

The analysis of GHGs is a much different analysis than the analysis of criteria pollutants for the following reasons. For criteria pollutants, significance thresholds are based on daily emissions because attainment or non-attainment is 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. Since the half-life of CO2 is approximately 100 years, the effects of GHGs are longer-term, affecting global climate over a relatively long time frame. Further, the action of GHGs is global in nature, rather than local or even regional. As a result, GHG emission impacts are considered to be cumulative impacts rather than project-specific impacts.

Typical GHG emission inventories (EPA[4], ARB[5], etc.) present directly emitted GHGs during a given year. Table 2-7~~5~~ presents CO2 emissions from PAR 1149.

Table 2-7~~5~~
CO2 Emissions from PAR 1149

Description	**CO2, ton/yr**	**CO2, metric ton/yr**
Construction	7.0	6.4
Operation	1,425	1,293
Total	1,432	1,299

~~**Description**~~	~~**CO2, ton/yr**~~	~~**CO2, metric ton/yr**~~
~~Control Technology~~[a]	~~1,217~~	~~1,198~~
~~Mobile Source~~[b]	~~70~~	~~69~~
~~Total~~	~~1,287~~	~~1,267~~

~~a) Control Technology Annual CO2 from Table 7 – Related Increase in Criteria Pollutants and Greenhouse Gas Emissions in the Draft Staff Report for Proposed Amended Rule 1149 – Storage Tank and Pipeline Cleaning and Degassing, February 2008.~~

~~b) Estimated using EMFAC2007 emission factors,~~

In the absence of a specific significance threshold, SCAQMD staff has evaluated significance for projects where it is the lead agency on a case-by-case basis. In this analysis, SCAQMD staff has used a variety of benchmarks to evaluate GHG impacts. As additional information is compiled with regard to the level of GHG emissions that constitute a significant cumulative climate change impact, SCAQMD will continue to revisit and possibly revise the level of GHG emissions considered to be significant.

In its *CEQA & Climate Change* document (January, 2008), CAPCOA identifies many potential GHG significance threshold options. The CAPCOA document indicates that establishing quantitative thresholds is a balance between setting the level low enough to capture a substantial portion of future residential and non-residential development, while also setting a threshold high enough to exclude small development projects that will contribute a relatively small fraction of the cumulative statewide GHG emissions. For example, CAPCOA identifies one potential significance threshold as 10,000 metric tons per year, which was considered by the Market Advisory Committee for inclusion in a Greenhouse Gas Cap and Trade System in California. Another potential threshold identified by CAPCOA is 25,000 metric tons per year, which is CARB's proposed mandatory reporting threshold under AB 32. GHG emissions in the year 2014 from PAR 1149 would be lower than both of these reporting thresholds.

[4] EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2005, http://www.epa.gov/climatechange/emissions/downloads06/07CR.pdf, April 15, 2007

[5] ARB, Statewide Greenhouse Gas (GHG) Emissions Inventory 1990 to 2004, http://www.arb.ca.gov/cc/ccei/emsinv/emsinv.htm.

Finally, another approach to determining significance is to estimate what percentage of the total inventory of GHG emissions are represented by emissions from a single project. If emissions are a relatively small percentage of the total inventory, it is possible that the project will have little or no effect on global climate change. According to available information, the statewide inventory of CO2eq. emission is as follows: 1990 GHG emissions equal 427 million metric tons of CO2eq. and 2020 GHG emissions equal 600 million metric tons of CO2eq. with business as usual. Interpolating an inventory for the year 2008 results in 531 million metric tons of CO2eq. CO2 emissions in 2008 of ~~1,267~~ 1,299 metric tons from PAR 1149 represent ~~0.00029~~ 0.00030percent of the statewide GHG inventory in 2008 (Table 2-~~8~~6). This small percentage of GHG emissions compared to the total projected statewide GHG emissions inventory is another basis for the SCAQMD's conclusion that GHG emissions from implementing PAR 1149 are less than significant.

Table 2-~~8~~6
Comparison of Proposed Amended Rule 1149 CO2 Emissions to the 2008 Statewide CO2 Emissions

2008 PAR 1149 Direct CO2 Emissions (metric ton/yr)	2014 Statewide CO2 Emissions (million metric ton/yr)	Percentage of PAR 1149 to Statewide CO2 emissions
~~1,267~~ 1,299	427	~~0.00029~~ 0.00030

PAR 1149 is part of a comprehensive ongoing regulatory program that includes implementing related SCAQMD 2007 AQMP control measures as amended or new rules to attain and maintain with a margin of safety all state and national ambient air quality standards for all areas within its jurisdiction. The 2007 AQMP estimates a CO2 reduction of 427,849 metric tons per year by 2014, and a CO2 reduction of 1,523,445 metric ton per year by 2020. Therefore, PAR 1149 in connection with other 2007 AQMP control measures is not considered to be cumulatively significant.

Since GHG emissions are considered cumulative impacts, and PAR 1149 GHG emissions are below the 10,000 metric ton per year Market Advisory Committee threshold, 25,000 metric ton per year CARB proposed mandatory reporting threshold under AB 32, a small percentage of the total statewide GHG inventory in 2014, and, with other control measures in the 2007 AQMP, which is a comprehensive ongoing regulatory program that would reduce overall CO2 emissions; cumulative GHG adverse impacts from PAR 1149 are not considered significant.

In addition, PAR 1149 establishes a ~~greenhouse gas (~~GHG~~)~~ emission reduction quantification protocol, where GHG emissions may be voluntarily reduced by controlling methane emissions from natural gas pipelines through the GHG quantification protocol calculation methodology. However, since the GHG quantification program is voluntary, no emission reductions were estimated from the GHG quantification protocol program for CEQA purposes.

III. e) Historically, the SCAQMD has enforced odor nuisance complaints through SCAQMD Rule 402 - Nuisance. Affected facilities are not expected to create objectionable odors affecting a substantial number of people for the following reasons: 1) PAR 1149 would occur at existing commercial and industrial facilities that store or transport organic liquids, which are likely to

generate odors; 2) PAR 1149 would reduce the amount of VOCs during off-gassing; 3) Degassing operations would occur over short time spans from hours to two days. Therefore, PAR 1149 is not expected to generate odor nuisance.

Conclusion
The proposed project is expected to reduce VOCs and air toxics. Based on the preceding discussion, significant adverse air quality impacts are not expected from PAR 1149, and will not be further analyzed in this ~~Draft~~ Final EA. Since no significant adverse air quality impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	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?	☐	☐	☑

		Potentially Significant Impact	Less Than Significant Impact	No Impact
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) PAR 1149 would further reduce VOC emissions at affected facilities during the cleaning and degassing of storage tanks and pipelines. PAR 1149 would not require or induce new residential or commercial developments. All construction operations are expected to occur within 14 existing dry breakout tanks located at existing industrial facilities. Construction would be limited to reducing the height of the roof support legs to one foot, which would not affect biological resources. Operations would consist of controlling VOC emissions from degassing and cleaning operations using carbon adsorption and/or thermal oxidizers or ICEs applied to existing affected tanks located at existing industrial facilities, which would not affect biological resources. All activities associated with PAR 1149 are expected to occur within the boundaries of existing industrial facilities or along existing pipeline right-of-ways. These properties have already been disturbed and are often cleared of vegetation for fire safety reasons, but not as a result of PAR 1149. Therefore, PAR 1149 would not directly or indirectly affect riparian habitat, federally protected wetlands, or migratory corridors. For the same reasons PAR 1149 is not expected to adversely affect special status plants, animals, or natural communities.

IV. e) & f) PAR 1149 would not conflict with local policies or ordinances protecting biological resources nor local, regional, or state conservation plans because it will only affect cleaning and degassing operations at existing industrial facilities. Additionally, PAR 1149 would not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or any other relevant habitat conservation plan for the same reason.

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 will 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 adverse biological resources impacts are not anticipated and will not be further analyzed in this ~~Draft~~ Final EA. Since no significant adverse biological resources impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	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 or site or unique geologic feature?	☐	☐	☑
d)	Disturb any human remains, including those interred outside a 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.

V. a) PAR 1149 would further reduce VOC emissions at affected facilities during the cleaning and degassing of storage tanks and pipelines. PAR 1149 would not require or induce new

residential or commercial developments. All activities associated with PAR 1149 are expected to occur within the boundaries of existing industrial facilities or along existing pipeline right-of-ways. All construction operations are expected to occur within 14 existing dry breakout tanks. Construction would be limited to reducing the height of the roof support legs to one foot, which would not affect cultural resources. Operations would consist of controlling VOC emissions from degassing and cleaning operations using carbon adsorption and/or thermal oxidizers or ICEs, which would not affect cultural resources. These properties have already been disturbed, but not as a result of PAR 1149. Therefore, PAR 1149 is not expected to affect property that could be considered historically significant as defined in CEQA Guidelines §15064.5. By reducing VOC and therefore ozone, PAR 1149 would reduce the amount of damage caused by ground level ozone.

V, b), c), & d) PAR 1149 would not cause any new development. PAR 1149 activities are not expected to disturb existing structures or require any earth work. Therefore, no impacts to historical resources are anticipated to occur as a result of implementing the proposed project. PAR 1149 is not expected to require physical changes to the environment, which may disturb paleontological or archaeological resources.

Based upon these considerations, significant adverse cultural resources impacts are not expected from the implementing PAR 1149 and will not be further assessed in this ~~Draft~~ Final EA. Since no significant cultural resources impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant Impact	No Impact
VI.	**ENERGY.** Would the project:			
a)	Conflict with adopted energy conservation plans?	☐	☐	☑
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
PAR 1149 would further reduce VOC emissions at affected facilities during the cleaning and degassing of storage tanks and pipelines.

VI. a) & e) PAR 1149 does not require any action which would result in any conflict with an adopted energy conservation plan or violation of any energy conservation standard. PAR 1149 is not expected to conflict with adopted energy conservation plans because existing facilities would be expected to continue implementing any existing energy conservation plans.

PAR 1149 is not expected to cause new development. Even withstanding this, the siting of new facilities and residences is predominantly governed by the local jurisdiction and not within the purview of the SCAQMD. The local jurisdiction or energy utility sets standards (including energy conservation) and zoning guidelines regarding new development and will approve or deny applications for building new facilities. During the local land use permit process, the project proponent may be required by the local jurisdiction or energy utility to undertake a site-specific CEQA analysis to determine the impacts, if any, associated with the siting and construction of new development.

As a result, PAR 1149 would not conflict with energy conservation plans, use non-renewable resources in a wasteful manner, or result in the need for new or substantially altered power or natural gas systems. Accordingly these impact issues will not be further analyzed in ~~the Draft~~ this Final EA.

VI. b), c) & d) The primary effects of implementing PAR 1149 diesel fuel would be used to transport afterburners, internal combustion engines or carbon to facilities. Staff estimates that one additional tank (3,206,000 gallon capacity) and two pipelines (155,016 gallon capacity) may be degassed in a given day because of PAR 1149. In addition, staff estimates that existing storage tanks would require additional destruction of VOCs to comply with PAR 1149 requirements.

Propane Impacts
The highest Rule 1149 activity in the last four years occurred on April 13, 2006. On that day, two large gasoline tanks (4,380,000 and 3,360,000 gallon capacity), two large crude tanks (19,446,000 and 18,900,000 gallon capacity, and one small crude tank (1,596,000 gallon capacity) were degassed on the same day. Degassing occurred for approximately 47 hours during that peak day. SCAQMD estimates an additional 84 hours would be required to degas the same existing storage tanks according to PAR 1149 requirements, and seven hours would be required to degas additional tank. Therefore, PAR 1149 would require an additional 91 hours on

a peak day. Assuming 8.8 gallons of propane per hour would be required, then 800 gallons of propane would be required on a peak day. According to the California Energy Commission 26 million gallons of propane are used in California per year for motor vehicles[6], which is 71,233 gallons per day. Based on the only the propane available for motor vehicles, 880 gallons per day would be less than 10 percent (1.1 percent) of the 71,233 gallons per day of propane available. Therefore, the additional propane use would not be significant.

Based on a survey of pipeline owners/operators, they would not use ICEs or thermal oxidizers. Therefore, there would be no propane used for the degassing of pipelines.

Diesel Impacts

Based on the peak day assumptions above, an additional ~~six~~ seven trucks would be required to assist in degassing currently affected tanks and to degas the additional tank and two pipelines. Assuming a 40-mile, one-way trip and a five mile per gallon of diesel fuel efficiency approximately 112 ~~96~~ gallons of diesel would be consumed on a peak day.

Using fuel economy values from the ARB's Offroad Database approximately 15 gallons of diesel fuel would be used by construction equipment on a peak day. Assuming one 40-mile round trip by a heavy-duty truck, approximately 16 gallons of diesel fuel would also be used. Therefore, 31 gallons of diesel fuel would be used by construction equipment/heavy-duty trucks during a peak construction day.

Based on the preceding estimates, PAR 1149 is expected to generate a peak daily demand for diesel fuel of 143 gallons. According to the 2007 AQMP, 10 million gallons of diesel is consumed every day. Since a total of 143 ~~96~~ gallons of diesel per day is less than one percent (0.0014 percent) of the diesel available, the proposed project is not considered to have a significant adverse impact on diesel fuel use.

Electricity Impacts

PAR 1149 is not expected to require any additional electricity usage.

Based upon the above considerations, the proposed project is not expected to use energy in a wasteful manner, and would not substantially deplete energy resources.

Based upon the preceding analysis, it is not expected that PAR 1149 would create any significant effects on peak and base period demands for electricity and other forms of energy since only insignificant use of propane and diesel fuel are expected.

Therefore, PAR 1149 is not expected to generate significant adverse energy resources impacts and will not be discussed further in this ~~Draft~~ Final EA. Since no significant energy impacts were identified, no mitigation measures are necessary or required.

[6] CEC, Making The Case For Propane Motor Fuel**,** http://www.energy.ca.gov/2005_energypolicy/documents/ 004-12-20_workshop/2004-12-20_PROPANE_FUEL.PDF.

		Potentially Significant Impact	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?	☐	☐	☑
	• Landslides?	☐	☐	☑
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 offsite 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 waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☑

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, b, c, d & e) PAR 1149 would further reduce VOC emissions at affected facilities during the cleaning and degassing of storage tanks and pipelines. PAR 1149 would not require or induce development. All activities associated with PAR 1149 are expected to occur within the boundaries of existing industrial facilities or along existing pipeline right-of-ways. All construction operations are expected to occur within 14 existing dry breakout tanks. Construction would be limited to reducing the height of the roof support legs to one foot, which would not affect geological resources. Operations would consist of controlling VOC emissions from degassing and cleaning operations using carbon adsorption and/or thermal oxidizers or ICEs, which would not affect geological resources. ~~These properties~~ Affected facilities have already been disturbed, but not as a result of PAR 1149. Since no ~~construction or~~ earth work is expected, PAR 1149 is not expected to expose people or structures to potential substantial effects from seismic related activity, landslides, soil erosion or the loss of top soil. The proposed project would not be located on a geologic unit or soil that is unstable or would become unstable as a result of the proposed project, be located on expansive soil. The proposed project would not require or modify septic tanks or alternative waste water disposal systems where sewers are not available for disposing of wastewater.

Based on the above discussion, the proposed project is not expected to have an adverse impact on geology or soils. Since no significant adverse impacts are anticipated, this environmental topic will not be further analyzed in this ~~draft~~ Final EA. No mitigation measures are necessary or required.

	Potentially Significant Impact	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, disposal of hazardous materials?	☐	☑	☐

		Potentially Significant Impact	Less Than Significant Impact	No Impact
b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident 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 airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☑
f)	For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☑
g)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☑
h)	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?	☐	☑	☐
i)	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.

PAR 1149 would further reduce VOC emissions at affected facilities during the cleaning and degassing of storage tanks and pipelines.

VIII. a & b) PAR 1149 would include adverse hazards from the gases and/or vapors in the storage tanks and pipelines and auxiliary fuel for control equipment.

Gases and/or Vapors in Storage Tanks
PAR 1149 may require lengthening the time of degassing operations for larger tanks that currently degassed. The increase degassing time would reduce the amount of vapors/VOCs release from the larger tanks. Reducing the amount of vapors/VOCs is expected to reduce possible explosive or flammability hazards from the larger tanks. Therefore, PAR 1149 is expected to reduce hazards from larger tanks.

PAR 1149 would require the degassing of small storage tanks and extending degassing operations for larger storage tanks.

Based on conversations with degassing vendors, PAR 1149 is expected to expand the number of tanks degassed, but is not expected to add new facilities. Since PAR 1149 would include small tanks and extend degassing of existing tanks, the adverse impact of a fire or explosion would be equal or less than the existing risk. When comparing worst-case adverse impacts smaller tanks would generate smaller fires and explosions than larger tanks. Extending the degassing of existing larger tanks would not change adverse impacts from a fire or explosion, since the worst-case would be the same or less.

In addition, the ignitability or explosivity of a gas or vapor is limited by its concentration in air. The concentration at which a gas or vapor may ignite or explode is bounded by two explosive limits: the upper and lower explosive limits. Above the upper explosive limit, there is not enough oxygen to ignite the gas or vapor. Below the lower explosive limit, the gas or vapor concentration is too low to burn or explode.

Currently, the vapors/gases from smaller tanks are vented to the atmosphere, and higher vapor/gas concentrations are allowed to escape from larger tanks than would be allowed by PAR 1149. The amount of time vapors/gasses are within the explosive limit concentrations may be shorter, since it is expected that the vapors/gasses would dissipate quicker in the open atmosphere than during the degassing process, which could occur over two days. However, once the vapors/gasses are exposed to the open atmosphere, they are uncontrolled. So the vapor/gas

released from the tanks can travel freely. Therefore, it is possible for a vapor/gas cloud with concentrations within the explosive range to move closer to the fenceline or off-site.

Even though degassing smaller tanks, and extending degassing for larger tanks, may lengthen the time concentrations are within the explosive range, the gases/vapors would be kept localized within the storage tank allowing better control of the explosive or fire hazard. Therefore, PAR 1149 is expected to reduce hazards from smaller tanks.

Auxiliary Fuel for Control Devices Degassing Storage Tanks

PAR 1149 would for storage tanks would typically involve the combustion of VOCs and air toxics using propane-fired thermal oxidizers or ICEs. The accidental release of propane could result in adverse hazard impacts.

Since the probability of accidents is related to the miles traveled the increase number of storage tanks and the addition of pipelines would increase the probability of hazards from an accidental release of propane. However, the national truck accident rate is small (on the order of one accident per ten million miles traveled) and the accident rate with chemical releases is even less, so this would not be a significant risk factor.

In case of a rupture, there is the potential for the gas to pool and boil off. This presents the possibility of a boiling liquid, vapor cloud explosion and fire with potential consequences to nearby structures, storage tanks and off-site receptors.

Propane vapors are heavier than air, so that leaks from the fuel system tend to pool at ground level rather than disperse. The flammability limits of LPG vapor in air are also broader than those for natural gas.

Propane is a non-toxic gas. High propane concentrations reduce oxygen levels that may cause asphyxiation, with early symptoms of dizziness. No harmful long-term effects have been reported from exposure to propane vapors. An odorant added to propane generally enables its detection at concentrations that are below the lower flammability limit and substantially below the concentrations needed for asphyxiation.

Propane is not a cryogen and liquid temperatures of the fuel at tank pressure remain at ambient levels. However, the rapid evaporation of the fuel at atmospheric pressures can, if spilled, cause damage to skin. To avoid direct propane contact to the skin, it is recommended that gloves be used during the refueling process.

Propane has a narrow range of flammability compared to the other transportation fuels. The fuel will only burn within a fuel-to-air ratio between 2.2 percent and 9.6 percent. Propane will rapidly dissipate beyond its flammability range in the open atmosphere. Propane fuel leaks can pose a significant explosion hazard relative to gasoline in enclosed areas. Since propane would be used for combusting VOCs and air toxics from affected storage tanks and pipelines, it is expected that this operation would occur in an open area.

Since the accident release risk of propane is low and propane is likely to dissipate into the atmosphere the adverse hazard risk from PAR 1149 is expected to be less than significant.

In addition, based on conversations with propane vendors, PAR 1149 may increase the number of tanks that would require degassing by adding small tanks; however, these additional tanks are expected to be located at facilities that already degas storage tanks. Since degassing already occurs at these facilities that off-site consequence from these operations is expected to be the same, since these facilities would already have propane use for degassing existing tanks under PAR 1149.

Gases and/or Vapors in Pipelines

From the current and planned activities, it does not appear that the use of internal combustion engines or thermal oxidizers would increase from pipeline repair and maintenance operations. Instead, owner/operators would generally use non-combustion control technology such as carbon adsorption. There was only one company contacted that currently uses ICEs or thermal oxidizers to control VOCs/toxics in areas around receptors. In areas, where there are no receptors, the company vents the vapors from the pipeline into the atmosphere uncontrolled.

The company would use ICEs or thermal oxidizers to control VOCs/toxics in all situations to comply with PAR 1149 (i.e., including areas where there are no receptors). However, since the company already uses ICEs or thermal oxidizers to control VOCs/toxics near receptors, there would be no increased hazards risk under PAR 1149. In areas where receptors are several miles away, the new use of ICEs or thermal oxidizers would not add any new significant adverse hazards impacts because there are no receptors to be adversely impacted.

Since pipeline owners/operators currently vent vapors from pipelines into the atmosphere without control, there is a possibility that the concentrations from the pipelines could dissipate downwind to concentrations within the LEL and UEL. Vapors within concentrations between the LEL and UEL are flammable or explosive. By better control of VOCs under PAR 1149, the possibility of an explosion or fire caused by uncontrolled release of vapors from pipelines would be reduced. Therefore, no new hazard impacts are expected.

Static Charge in Hoses

During the public workshop for PAR 1149, a comment was made on static charges in hoses. Flammable liquid in hoses may create vapors. These vapors will be near saturation which is well over the upper explosive limit and so won't be flammable within the hose. However, as the vapors exit the hose fresh air will mix and may potentially create a very small zone where there is an explosive atmosphere. However, as stated earlier any new or extended degassing operations are expected to occur at refineries, terminals and hazardous pipeline where these fluids area already passing through hoses. Therefore, while PAR 1149 may increase the frequency of these liquids passing through hoses, it would not increase the severity of adverse impacts (e.g., the adverse impacts are expected to be the same). Since degassing is not expected to occur frequently, the overall explosive and fire adverse impact is not expected to increase.

Based on the above analysis, PAR 1149 is not expected to create any new significant hazard to the public through the routine transport, use or disposal of hazardous material, or through reasonably foreseeable upset and accident conditions involving the release of hazardous material in to the environment.

VIII. c) PAR 1149 would not alter the handling of hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school. The combustion

of VOCs and toxic air contaminates would reduce the amount of hazardous emissions. Therefore, PAR 1149 is not expected to significantly impact schools.

VIII. d) Government Code §65962.5 is related to hazardous material sites at industrial facilities. PAR 1149 would affect commercial and industrial facilities with organic liquid storage tanks or pipelines. Some of these facilities may be on the list of hazardous material sites compiled pursuant to Government Code §65962.5. However, PAR 1149 is expected to reduce VOC and toxic air emission from degassing operations for all affected storage tanks and pipelines. As a result, PAR 1149 is not expected to adversely affect any facilities included on a list of hazardous material sites and, therefore, would not create a significant hazard to the public or environment

VIII. c) e) & f) PAR 1149 is not expected to result in a safety hazard for people residing or working within two miles of an public airport or public use airport, or air strip. PAR 1149 is expected to reduce the amount of VOCs and air toxic emissions from affected storage tanks and pipelines. The reduction of VOC emissions is expected to reduce explosive risk. Therefore, PAR 1149 is not expected to significantly adversely impact public airports or private air strips.

VIII. g) PAR 1149 is not expected to adversely impact emergency response or evacuation plans. However, if complying with PAR 1149 requires changes to the emergency response or evacuation plan, changes would be minor, so emergency response plans could be easily updated. Therefore, PAR 1149 is not expected to significantly impact emergency response or evacuation plans.

VIII. h) and i) PAR 1149 would lower the probability of an explosion since VOCs from storage tanks would be captured and destroyed. However, PAR 1149 may increase the fire hazard, since it would include combustion to destroy the VOCs. Since the contents of storage tanks that have VOCs are assumed to be flammable, combustible or explosive, the areas around such tanks are expected to be devoid of vegetation or flammable materials. Therefore, no significant increase in wildfires or fire hazard is expected from PAR 1149. PAR 1149 is not expected to increase the risk of fire hazard in general and specifically in areas with flammable materials. PAR 1149 would not expose people or structures to significant risk of loss, injury or death involving wildland fires.

In conclusion, potentially significant adverse hazard impacts resulting from adopting and implementing PAR 1149 are not expected and will not be considered further in this ~~Draft~~ Final EA.

		Potentially Significant Impact	Less Than Significant Impact	No Impact
IX.	**HYDROLOGY AND WATER QUALITY.** Would the project:			
a)	Violate any water quality standards or waste discharge requirements?	☐	☐	☑
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)?	☐	☐	☑
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 flooding on- or offsite?	☐	☐	☑
d)	Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☑
e)	Otherwise substantially degrade water quality?	☐	☐	☑
f)	Place housing 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?	☐	☐	☑
g)	Place within a 100-year flood hazard area structures which would impede or redirect flood flaws?	☐	☐	☑
h)	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?	☐	☐	☑

		Potentially Significant Impact	Less Than Significant Impact	No Impact
i)	Inundation by seiche, tsunami, or mudflow?	☐	☐	☑
j)	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☑
k)	Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☑
l)	Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☑
m)	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☑
n)	Require 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 Quality:

- The proposed project does not increase demand for water by more than 5,000,000 gallons per day.
- 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.

Water Demand:
- The existing water supply does not have the capacity to meet the increased demands of the project, or the project would use a substantial amount of potable water.
- The project increases demand for water by more than five million gallons per day.

Discussion

IX. a), j), k) & m) PAR 1149 would only affect degassing operations. PAR 1149 would not require any new development or require modifications to buildings or other structures to comply with the proposed amended rule. All of the affected activities occur within facility boundaries or along existing pipeline right-of-ways. Cleaning operations itself are not regulated by PAR 11149, only the degassing operations. PAR 1149 does not require the use of water directly, and therefore, wastewater discharge is not expected from degassing operations.

However, water is used for cleaning. Based on conversations with major degassing companies, large gasoline above ground storage tanks use relatively small amounts of water for rinsing, around (1,000 to 4,200) gallons. Crude and heavy product tanks use more water, on the order of 100,000 gallons per tank. Pipelines use nitrogen instead of water and small underground storage tanks use relatively small amounts of water. Since this water is used currently, and PAR 1149 would only require degassing of these new tanks, no new water is required.

Since the water use is part of the existing cleaning operations, PAR 1149 would not cause increased water usage or the construction of additional water resource facilities, the need for new or expanded water entitlements, an alteration of drainage patterns, or substantially deplete groundwater supplies or interfere substantially with groundwater recharge.

These facilities currently treat wastewater from this process either on-site or off-site with water treatment facilities that currently treat wastewater from these facilities. All facility owners/operators are expected to be complying with all federal, state and local water quality standers and wastewater discharge requirements. PAR 1149 is not expected to affect compliance with federal, state and local water quality standers and wastewater discharge requirements.

c), d), e)& l) PAR 1149 would not require any development or construction, therefore, would not create or contribute to runoff water. Storage tank and pipeline operators are typically required to have secondary containment or housekeeping procedures to prevent contaminating stormwater. While PAR 1149 related operations are not expected to adversely impact stormwater, existing secondary containment and housekeeping practices would also reduce the possibility of creating or contributing runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

As detailed above, the proposed amended rule is not expected to require additional wastewater disposal capacity, violate any water quality standard or wastewater discharge requirements, or otherwise substantially degrade water quality. As result, no changes to storm water runoff,

drainage patterns, groundwater characteristics, or flow are expected. Therefore, potential adverse impacts to drainage patterns, etc., are not expected as a result of implementing PAR 1149.

IX. b), & n) PAR 1149 is not expected to substantially deplete groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. PAR 1149 would not increase demand for water from existing entitlements and resources, and will not require new or expanded entitlements because compliant devices do not use water for any reason. Therefore, no water demand impacts are expected as the result of implementing the proposed amendments.

IX. f), g), h) & i) PAR 1149 would not require any development or construction; therefore, PAR 1149 is not expected to generate construction of any new structures in 100-year flood areas as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood delineation map. As a result, PAR 1149 is not expected to expose people or structures to new significant flooding risks. Degassing requirements at existing affected facilities are not expected not affect any existing risks from flood, inundation, etc. Consequently, PAR 1149 would not affect in any way any potential flood hazards, inundation by seiche, tsunami, or mud flow that may already exist relative to existing facilities.

Based upon the above considerations, significant hydrology and water quality impacts are not expected from the implementation of PAR 1149 and will not be further analyzed in this ~~Draft~~ Final EA. Since no significant hydrology and water quality impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	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?	☐	☐	☑
c)	Conflict with any applicable habitat conservation or natural community conservation plan?	☐	☐	☑

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) PAR 1149 would further reduce VOC emissions at affected facilities during the cleaning and degassing of storage tanks and pipelines. PAR 1149 does not require any new development. Therefore, PAR 1149 does not include any components that would require physically dividing an established community.

X. b) & c) There are no provisions in PAR 1149 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 regulating VOC emissions from cleaning and degassing storage tanks and pipelines. Therefore, PAR 1149 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. Therefore, present or planned land uses in the region will not be significantly adversely affected as a result of the proposed amended rule.

Based upon these considerations, significant land use and planning impacts are not expected from the implementation of PAR 1149 and will not be further analyzed in this ~~Draft~~ Final EA. Since no significant land use and planning impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	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) PAR 1149 would further reduce VOC emissions at affected facilities during the cleaning and degassing of storage tanks and pipelines. There are no provisions in PAR 1149 that would result in the loss of availability of a known mineral resource of value to the region and the residents of the state, or of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan because compliances is not expected to require mineral resources such as sand, gravel, etc..

Based upon the above considerations, significant mineral resources impacts are not expected from the implementation of PAR 1149 and will not be further analyzed in this ~~Draft~~ Final EA. Since no significant mineral resources impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	Less Than Significant Impact	No Impact
XII.	**NOISE.** Would the project result in:			
a)	Exposure of persons to or generation of 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 permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☑
d)	A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☑	☐

		Potentially Significant Impact	Less Than Significant Impact	No Impact
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 airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☑
f)	For a project within the vicinity of a private airship, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☑

Significance Criteria

Impacts on noise 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) Drain dry breakout tanks would require construction to cut roof support legs on 14 tanks to one foot height. Cutting would be done with oxyacetylene torches and the roof is expected to be supported by a bobcat loader; therefore, construction is not expected to generate a significant amount of noise over the background noise generated by other equipment in and around affected storage tank farms. Tank farms are industrial facilities that generate noise from heavy-duty trucks, rail lines, maintenance and other operations.

Degassing operations occur for existing tanks captured by the existing Rule 1149. Existing degassing operations have not been known for excessive noise. Tank degassing operations would include heavy-duty, diesel truck trips, blowers and either a tank to capture gases or a combustion unit to destroy fugitive VOCs. Pipelines would include heavy-duty, diesel truck trips, blowers and either a tank to capture gases or a carbon adsorption unit.

Existing facilities with storage tanks are expected to be in commercial or industrial zones. Affected facilities are expected to have an existing amount of noise associated with filling, loading, and maintenance operations. Degassing operations are not expected to be substantially

noisier than existing operations. Thus, the proposed project is not expected to expose persons to the generation of excessive noise levels above current facility/residential levels. It is expected that any facility/residence affected by PAR 1149 would comply with all existing local noise control laws or ordinances.

In commercial environments Occupational Safety and Health Administration (OSHA) and California-OSHA have established noise standards to protect worker health. It is expected that operators at affected facilities/residences will continue complying with applicable noise standards, which would limit noise impacts to workers, patrons and neighbors.

XII. b) Drain dry breakout tanks would require construction to cut roof support legs on 14 tanks to a one-foot height. Cutting would be done with oxyacetylene torches and the roof is expected to be supported by a bobcat loader. Since these types of equipment do not generate substantial vibrations, construction is not expected to generate a significant amount of groundborne vibration.

Degassing operations occur for tanks that are already captured by the existing Rule 1149. SCAQMD staff is not aware of groundborne vibrations from existing operations. PAR 1149 is not anticipated to expose people to or generate excessive groundborne vibration or groundborne noise levels since ~~no construction operations are expected to occur at the existing facilities and compliance~~ changes to operations is not expected to involve equipment that generates substantial groundborne vibrations.

XII. c) Construction operations would be temporary and only affect 14 breakout tanks; therefore, construction would not contribute to a permanent increase in noise levels. A permanent increase in ambient noise levels at the affected facilities above existing levels as a result of implementing the proposed project is unlikely to occur because degassing operations are infrequent, occurring approximately once a day every three years. PAR 1149 related noise would only occur during degassing operations. Since degassing operations are not expected to increase noise above regulatory noise levels and is only expected to last two days every three years, no permanent increase in ambient noise level is expected.

XII. d) Drain dry breakout tanks would require construction to cut roof support legs on 14 tanks to a one-foot height. Cutting would be done with oxyacetylene torches and the roof is expected to be supported by a bobcat loader. Since these types of equipment do not generate substantial volumes of noise, construction is not expected to generate a substantial amount of ambient noise in the project vicinity above levels existing without the proposed project.

PAR 1149 may cause an increase in periodic or temporary ambient noise levels in the vicinity of affected facilities above levels existing prior to its adoption. However, since the noise levels are expected to be consistent with other operations at affected facilities, PAR 1149 is not expected to cause a substantial increase in periodic or temporary ambient noise levels.

XII. e) & f) PAR 1149 may affect storage tanks near or at airports or airfields. Drain dry breakout tanks would require construction to cut roof support legs on 14 tanks to a one-foot height. Cutting would be done completely onsite with oxyacetylene torches and the roof is expected to be supported by a bobcat loader; therefore, construction is not expected to impact people residing or working in the project area near airports or airfields.

~~However, t~~The noise generated by degassing operations is not expected to be greater than the noise generated for other storage tank operations, such as filling, loading or maintenance. Thus, PAR 1149 is not expected to expose people residing or working in the vicinities of public airports to excessive noise levels.

Based upon these considerations, significant noise impacts are not expected from the implementation of PAR 1149 and are not further evaluated in this ~~Draft~~ Final EA. Since no significant noise impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	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 existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☑
c) Displace substantial numbers of people, 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) PAR 1149 would further reduce VOC emissions at affected facilities during the cleaning and degassing of storage tanks and pipelines. The proposed project is not anticipated to generate any significant effects, either direct or indirect, on the district's population or population distribution as no additional workers are anticipated to be required to comply with the proposed

amendments. Human population within the jurisdiction of the SCAQMD is anticipated to grow regardless of implementing PAR 1149. It is expected that any construction activities at affected facilities would use construction workers from the local labor pool in southern California. As such, PAR 1149 will not result in changes in population densities or induce significant growth in population.

XIII. b) & c) Because the proposed project affects storage tank and pipeline cleaning and degassing at existing industrial facilities, PAR 1149 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 elsewhere.

Based upon these considerations, significant population and housing impacts are not expected from the implementation of PAR 1149 and are not further evaluated in this ~~Draft~~ Final EA. Since no significant population and housing impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	**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) Parks?	☐	☐	☑
e) 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) The control of VOCs from the cleaning and degassing of storage tanks and pipelines is not expected to change or increase the chances for fires or explosions requiring a response from local fire departments. As shown in the Section VIII - Hazards and Hazardous Material section of this ~~Draft~~ Final EA, the use of portable ICEs and thermal oxidizers is not expected to generate significant explosion or fire hazard impacts. PAR 1149 is not expected to have any adverse effects on local police departments for the following reasons. Police would be required to respond to accidental releases of hazardous materials during transport. Since hazards impacts from implementing PAR 1149 were concluded to be less than significant, potential impacts to local police departments are also expected to be less than significant.

XIV.c) & d) As indicated in discussion under item XIII. Population and Housing, implementing PAR 1149 would not induce population growth or dispersion during either construction or operation. Therefore, with no increase in local population anticipated, additional demand for new or expanded schools or parks is not anticipated. As a result, no significant adverse impacts are expected to local schools or parks.

XIV. e) PAR 1149 is not expected to require the increase for government services. The proposal 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 will be no increase in population and, as a result of implementing; therefore, no need for physically altered government facilities.

Based upon these considerations, significant public services impacts are not expected from the implementation of PAR 1149 and are not further evaluated in this ~~Draft~~ Final EA. Since no significant public services impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	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?	☐	☐	☑

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) As discussed under "Land Use and Planning" above, there are no provisions in the PAR 1149 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 changes proposed in PAR 1149. 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 will not directly or indirectly increase or redistribute population.

Based upon these considerations, significant recreation impacts are not expected from the implementation of PAR 1149 and are not further evaluated in this ~~Draft~~ Final EA. Since no significant recreation impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
XVI. SOLID/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/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 and b) PAR 1149 would require one owner/operator to shorten the support legs for 14 drain dry breakout tanks. Paint removed from the support legs that are cut would need disposal. However, the amount of paint removed from where the support legs would be cut is expected to be minor. Since the support legs are metal, it is expected that the cut portions of the legs would be recycled. Therefore, construction is expected to generate only minor waste from paint removed from where the support legs are cut, and this waste is expected to be less than significant.

PAR 1149 would only affect VOCs from liquids stored in pipelines or storage tanks. No solid wastes are expected directly from PAR 1149 operational activities. The remaining liquids and sludge in a tank that is removed during cleaning and degassing is not collected and disposed of as a result of PAR 1149, but is a part of the cleaning process. The liquid and sludge would be collected as part of the cleaning and degassing process associated with operations and maintenance of storage tanks and pipelines. Therefore, no hazardous wastes are expected to be generated by PAR 1149 itself.

Based on discussions with owners/operators, PAR 1149 would increase the use of carbon adsorption. Owners/operators of tank farms or vendors that represent them may need to replace carbon more often in existing systems used to degas storage tanks and would be used for smaller storage tanks that would be captured by PAR 1149. This may require either additional carbon beds or new carbon beds for adsorption. Degassing time would increase for some existing storage tanks and new storage tanks would need to be degassed. Pipeline owners/operators have stated that carbon adsorption is likely to be used to control VOCs during degassing operations. This would add new carbon beds for adsorption.

Carbon from adsorption units is recharged by vendors, but after a period of time the carbon can no longer be reactivated and is disposed of in landfills. ~~Based on discussions with vendors, PAR 1149 would require 30,400 pounds (15.2 tons) of activated carbon.~~ In the Draft EA, it was assumed that 15.2 tons of additional activated carbon per year would be needed. However, owner/operators have stated that additional carbon adsorption would be required during the removal of the sludge from crude storage tanks to comply with PAR 1149. Based on conversations with vendors an additional 36,300 pounds (18.2 tons) of activated carbon would be required. Therefore, the total carbon required per year would be approximately 33.4 tons (15.2 + 18.2).

There are 48 Class II/Class III landfills within the SCAQMD's jurisdiction. The total daily permitted disposal capacity of district landfills is approximately 93,979 tons per day[7]. If all ~~15.2~~ 33.4 tons of carbon waste generated each year were disposed of on the same day, the carbon waste would represent ~~0.000167~~ 0.036 percent of the total district permitted disposal capacity. Solid waste that is ~~0.000167~~ 0.036 percent of the total daily permitted landfill disposal capacity for landfills in the district is well within the disposal capacity of district landfills. Therefore, the proposed project is less than significant for hazardous waste and accidental release.

[7] SCAQMD. 2007. Final Program Environmental Impact Report for the 2007 Air Quality Management Plan. (SCH. No.2006111064).

Existing carbon vendors are expected to currently comply with federal, state and local statues and regulations related to solid and hazardous waste. PAR 1149 is not expected to alter the disposal of activated carbon or any other solid or hazardous waste. Therefore, carbon vendors are expected to comply with federal, state and local statues and regulations related to solid and hazardous waste under PAR 1149.

Based on these considerations, PAR 1149 is not expected to significantly increase the volume of solid or hazardous wastes disposed at existing municipal or hazardous waste disposal facilities or require additional waste disposal capacity. Further, implementing PAR 1149 is not expected to interfere with any affected facility's ability to comply with applicable local, state, or federal waste disposal regulations. Since no solid/hazardous waste impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	**Less Than Significant Impact**	**No Impact**
XVII. TRANSPORTATION/TRAFFIC. Would the project:			
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☐	☑
b) Exceed, either individually or cumulatively, a level of service standard 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 or?	☐	☐	☑
f) Result in inadequate parking capacity?	☐	☐	☑

		Potentially Significant Impact	Less Than Significant Impact	No Impact
g)	Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks)?	☐	☐	☑

Significance Criteria

Impacts on transportation/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.
- 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) PAR 1149 would further reduce VOC emissions at affected facilities during the cleaning and degassing of storage tanks and pipelines.

SCAQMD estimates that two diesel-fueled truck round-trips per day would be required for construction operations. One owner/operator would need to cut support legs for 14 drain dry breakout tanks; however, construction would be restricted to one drain dry breakout tank at a time to prevent disruption of operations.

SCAQMD estimates that during operation ~~six~~ seven diesel-fueled vehicle round trips (for existing storage tanks – an additional truck trip for carbon adsorption, for existing crude storage tanks that would be captured by PAR 1149 - ~~a vacuum truck~~, a truck for the portable ICE or thermal oxidizer, and a truck for propane; for pipelines – a ~~vacuum truck~~, a truck for the carbon adsorption unit~~, truck for the carbon~~) per affected facility. Only the trucks carrying the portable ICE or thermal oxidizer, carbon adsorption unit, carbon and propane would be considered part of the project. Vacuum trucks would be required whether or not PAR 1149 is approved. The maximum daily number of tanks that have been degassed in the past is ten. SCAQMD staff expects that as a worst-case one new aboveground storage tank and two 10-mile sections of pipeline might be degassed or cleaned per peak day.

Therefore, ~~six~~ nine additional trucks trips (two from construction and seven from operation) might be added by PAR 1149 on a worst-case day. However, it is not expected that the affected facilities would be adjacent so in any given area only two additional truck trips are expected to be added to any area by PAR 1149. The addition of two diesel truck trips at three additional non-adjacent facilities is not expect to significantly adversely affect circulation patterns on local roadways or the level of service at intersections near affected facilities.

XVII. c) The activities associated with PAR 1149 are not expected to involve equipment (diesel trucks, ICEs and thermal oxidizers) that extends substantially above the height of storage tanks or nearby structures. Therefore, PAR 1149 will not affect in any way air traffic in the region to any appreciable extent.

XVII. d) Since PAR 1149 affects the degassing and cleaning of tanks or pipelines, no offsite modifications to roadways are anticipated for the proposed project that would result in an additional design hazard or incompatible uses.

XVII. e) Since PAR 1149 affects the degassing and cleaning of tanks or pipelines, no changes are expected to emergency access at or in the vicinity of the affected facilities. The proposed project is not expected to adversely impact emergency access because does not add a substantial amount of equipment and emergency access to storage tanks and pipelines are required by other federal, state and local regulations.

XVII. f) Since PAR 1149 affects the degassing and cleaning of tanks or pipelines, no changes are expected to the parking capacity at or in the vicinity of the affected facilities. PAR 1149 is not expected to require additional workers, so additional parking capacity will not be required. Therefore, the project is not expected to adversely impact on- or off-site parking capacity.

XVII. g) Since PAR 1149 affects the degassing and cleaning of tanks or pipelines, the implementation of PAR 1149 would not result in conflicts with alternative transportation, such as bus turnouts, bicycle racks, et cetera.

Based upon these considerations, PAR 1149 is not expected to generate significant adverse transportation/traffic impacts and, therefore, this topic will not be considered further in this ~~Draft~~ Final EA. Since no significant transportation/traffic impacts were identified, no mitigation measures are necessary or required.

		Potentially Significant Impact	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) As discussed in the "Biological Resources" section, PAR 1149 is not expected to significantly adversely affect plant or animal species or the habitat on which they rely because PAR 1149 is expected to affect equipment or processes located at existing residential or commercial facilities, which are typically areas that have already been greatly disturbed and that currently do not support such habitats. PAR 1149 would require construction to cut roof support legs from 14 drain dry breakout tanks to one foot height. The construction would occur within the drain dry breakout tanks at existing industrial facilities so no biological adverse impacts are expected.

Additionally, PAR 1149 does not require or induce construction of any new land use projects that could affect biological resources. Construction of new land use projects would be done for reasons unrelated to PAR 1149.

XVIII. b) Because PAR 1149 does not generate project-specific adverse impacts from ~~other~~ any environmental topic~~s besides air quality~~, cumulative impacts are not consider to be "cumulatively considerable" as defined by CEQA guidelines §15065(a)(3)~~ for any air quality topic besides air quality~~. For example, the environmental topics checked 'No Impact' (e.g.,

aesthetics, agriculture resources, biological resources, cultural resources, geology and soils, hydrology and water quality, land use and planning, mineral resources, population and housing, public services, recreation, and transportation and traffic) would not be expected to make any contribution to potential cumulative impacts whatsoever. For the environmental topic checked 'Less than Significant Impact' (e.g., air quality, energy, hazards and hazardous material, noise and solid/hazardous waste), the analysis indicated that project impacts would not exceed any project-specific significance thresholds. This conclusion is based on the fact that the analyses for each of these environmental areas concluded that the incremental effects of the proposed project would be minor and, therefore, not considered to be cumulatively considerable. Also, in the case of air quality impacts, the net effect of implementing the proposed project with other proposed rules and regulations, and AQMP control measures is an overall reduction in district-wide emissions contributing to the attainment of state and national ambient air quality standards. Therefore, it is concluded that PAR 1149 has no potential for significant cumulative or cumulatively considerable impacts in any environmental areas.

XVIII. c) Based on the foregoing analyses, PAR 1149 ~~may~~ is not expected to cause significant adverse effects on human beings. ~~Significant adverse air quality impacts from the implementation of PAR 1149 will be evaluated in the Draft EA.~~ Based on the preceding analyses, no significant adverse impacts to aesthetics, agriculture resources, air quality, 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/hazardous waste and transportation and traffic are expected as a result of the implementation of PAR 1149.

As discussed in items I through XVIII above, the proposed project is not expected to cause significant adverse environmental effects.

APPENDIX A

PROPOSED AMENDED RULE 1149

In order to save space and avoid repetition, please refer to the latest version of the PAR 1149 located elsewhere in the final rule package. The PAR 1149 (PAR April 4, 2008) version of the proposed amended rule circulated with the Draft EA released on March 11, 2008 for a 30-day public review and comment period ending April 9, 2008 has been updated but, as noted in the preface, the changes do not require the EA to be recirculated.

Original hard copies of the Draft EA, which include PAR 1149 (PAR April 4, 2008) version of the proposed amended rule circulated with the Draft EA, 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

Table C-1
PAR 1149 Increase in Degassing Hours

Source	Capacity	Content	Hours to Degas Under Rule 1149	Hours to Degas under PAR 1149	Increased Hours to Degas under PAR 1149
Existing	4,380,000	Gasoline	6.7	18.8	12.1
Existing	3,360,000	Gasoline	5.2	14.6	9.4
Existing	19,446,000	Crude	16.9	47.3	30.4
Existing	1,596,000	Crude	1.4	3.9	2.5
Existing	18,900,000	Crude	16.4	45.9	29.5
New AST	3,206,000	Xylene	N/A	7	7
New Pipeline	155,016	gasoline	N/A	6.2	6.2
New Pipeline	155,016	crude	N/A	3.4	3.4
Total hourly increase:					**100.5**

Worst Day Increased Propane Usage (@8.8 gal/hour) = 884 gal/hour

Table C-2
PAR 1149 Emission Factors

Description	VOC	Methane	NOx	SOx	CO	PM	PM2.5
LPG for ICE	1.8	0	35	0.35	25	5.0	5.0
LPG for TO	0.26	0.28	13	4.6	3.2	0.28	0.28

PM2.5 is 99.8 percent of PM10 for internal combustion of gaseous fuels in the CEIDARS Database
PM2.5 is 100 percent of PM10 for external combustion of gaseous fuels in the CEIDARS Database

Table C-3
PAR 1149 Emissions from Degassing Operations

Emission Increase (lb/day)	VOC	Methane	NOx	SOx	CO	PM	PM2.5
at 100% ICE use	1.6	0	31	0.31	22	4.4	4.4
at 100% TO use	0.23	0.25	11	4.1	2.8	0.25	0.25
at 69.2/30.8 T.O./ICE use	0.65	0.17	17	2.9	8.8	1.5	1.5

Emissions, lb/day = (Use, gal/day)/(1,000 gal) x EF, lb/1,000 gal

Table C-4
PAR 1149 Emissions from Diesel Truck Emissions

Addition Tank Trips

Description	No of Tanks	Annual Trips
New Tanks	470	94

Annual trips, trip/year = No of Tanks/10 years
Daily trips, trip/day = 2 trucks x (annual trips, trip/year)/(365 day/year)

Pipeline Trips

Description	Miles	Annual Trips
Pipeline	800	320

Annual trips, trip/year = Miles/5 mile/segment
Daily trips, trip/day =2 trucks x (annual trips, trip/year)/(365 day/year)

EMFAC2007 Emission Factors

Description	CO, lb/mile	NOx, lb/mile	VOC, lb/mile	SOx, lb/mile	CO2, lb/mile	PM10, lb/mile
Heavy-Duty Truck	0.0055	0.0356	0.0012	4.57E-05	4.22	0.0006

EMFAC2007, SCAQMD district

Mobile Emissions

~~Description~~	~~Annual Trips, trip/year~~	~~Daily Trips, trip/day~~	~~One-Way, mile/trip~~	~~CO, lb/day~~	~~NOx, lb/day~~	~~VOC, lb/day~~	~~SOx, lb/day~~	~~CO2, tons/yr~~	~~PM10, lb/day~~	~~PM2.5, lb/day~~
~~Heavy-Duty Truck~~	~~414~~	~~6~~	~~40~~	~~2.65~~	~~17.1~~	~~0.59~~	~~0.0219~~	~~70~~	~~0.309~~	~~0.284~~

Description	**Annual Trips, trip/year**	**Daily Trips, trip/day**	**One-Way, mile/trip**	**CO, lb/day**	**NOx, lb/day**	**VOC, lb/day**	**SOx, lb/day**	**CO2, tons/yr**	**PM10, lb/day**	**PM2.5, lb/day**
Heavy-Duty Truck	414	7	40	3.09	20.0	0.69	0.0256	70	0.361	0.332

Emissions, lb/day = daily trips, trips/day x one-way, mile/trip x EF, lb/mile x 2 one-way trips
Emissions, ton/year = annual trips, trips/year x one-way, mile/trip x EF, lb/mile x 2 one-way trips
PM2.5 is 92 percent of PM10 for on-road diesel combustion in the CEIDARS Database

Table C-5
Summary of PAR 1149 Operational Emissions

Description	**CO, lb/day**	**NOx, lb/day**	**VOC, lb/day**	**SOx, lb/day**	**PM10, lb/day**	**PM2.5, lb/day**
Control Technology	8.8	17	0.65	2.9	1.5	1.5
Mobile Source	3.1	20	0.69	0.026	0.36	0.33
Total	12	37	1.3	2.9	1.9	1.9

Table C-6
PAR 1149 Daily Construction Emissions

Construction Activity

Construction Schedule

Equipment Type[a]	No. of Equipment	hr/day	Crew Size
Tractors/Loaders/Backhoes	1	1	3
Generator Sets	1	4	

Construction Equipment Combustion Emission Factors

	CO	NOx	PM10	VOC	SOx	CO2
Equipment Type[c]	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
Tractors/Loaders/Backhoes	0.406	0.775	0.120	0.060	0.001	66.806
Generator Sets	0.346	0.698	0.107	0.043	0.001	60.993

Construction Vehicle (Mobile Source) Emission Factors

	CO	NOx	PM10	VOC	SOx	CO2
	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile	lb/mile
Heavy-Duty Truck[d]	0.01361368	0.04458017	0.00215635	0.00351579	0.00004136	4.210671446

On-Site Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	One-Way Trip Length (miles)
Haul Trucks	2	40

Table C-6 (Continued)
PAR 1149 Daily Construction Emissions

Incremental Increase in Onsite Idling Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/hr) x No. of Equipment x Work Day (hr/day) = Onsite Construction Emissions (lb/day)

	CO	NOx	PM10	VOC	SOx	CO2
Equipment Type	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Tractors/Loaders/Backhoes	0.41	0.77	0.12	0.06	0.001	67
Generator Sets	1.38	2.79	0.43	0.17	0.003	244
Total	**1.79**	**3.57**	**0.55**	**0.23**	**0.004**	**311**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

	CO	NOx	PM10	VOC	SOx	CO2
Vehicle	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
Flatbed Trucks	2.178	7.133	0.3450	0.563	0.007	674
Total	**2.18**	**7.13**	**0.345**	**0.563**	**0.007**	**674**

Total Incremental Combustion Emissions from Construction Activities

	CO	NOx	PM10	VOC	SOx	CO2
Sources	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
On-Site Emissions	**4.0**	**10.7**	**0.9**	**0.8**	**0.01**	**984**
Regional Significance Threshold	***550***	***55***	***150***	***75***	***150***	
Exceed Significance?	**NO**	**NO**	**NO**	**NO**	**NO**	**N/A**

Table C-6 (Concluded)
PAR 1149 Daily Construction Emissions

Combustion and Fugitive Summary	**PM2.5 Fraction[e]**	**PM10** lb/day	**PM2.5** lb/day
Combustion (Offroad)	0.92	0.6	0.5
Combustion (Onroad)	0.96	0.345	0.333
Fugitive	0.21	0	0
Total		**0.90**	**0.84**
Regional Significance Threshold			**55**
Exceed Significance?			**NO**

Notes:
a) SCAQMD, estimated
c)CARB, Offroad http://www.aqmd.gov/ceqa/handbook/offroad/offroadEF07_25.xls
d) CARB, EMFAC2007 http://www.aqmd.gov/ceqa/handbook/onroad/onroadEFHHDT07_26.xls
e) ARB's CEIDARS database PM2.5 fractions - construction dust category for fugitive and diesel vehicle exhaust category for combustion.

Table C-~~7~~5
Summary of PAR 1149 Criteria Emissions

~~**Description**~~	~~**CO, lb/day**~~	~~**NOx, lb/day**~~	~~**VOC, lb/day**~~	~~**SOx, lb/day**~~	~~**PM10, lb/day**~~	~~**PM2.5, lb/day**~~
~~Control Technology~~	~~9~~	~~17~~	~~0.65~~	~~2.9~~	~~1.5~~	~~1.5~~
~~Mobile Source~~	~~2.6~~	~~17~~	~~0.59~~	~~0.022~~	~~0.31~~	~~0.28~~
~~Total~~	~~11~~	~~34~~	~~1.2~~	~~2.9~~	~~1.8~~	~~1.8~~
~~Significance Threshold~~	~~550~~	~~55~~	~~55~~	~~150~~	~~150~~	~~55~~
~~Significant?~~	~~No~~	~~No~~	~~No~~	~~No~~	~~No~~	~~No~~

Description	**CO, lb/day**	**NOx, lb/day**	**VOC, lb/day**	**SOx, lb/day**	**PM10, lb/day**	**PM2.5, lb/day**
Construction	4.0	11	0.59	1.1	0.59	0.56
Operational	12	37	1.3	2.9	1.9	1.9
Total	16	48	1.9	4.1	2.5	2.4
Significance Threshold	550	55	55	150	150	55
Significant?	No	No	No	No	No	No

Table 8
GHG Emissions from Oxyacetylene

C_2H_2 Usage, cft/day	Density, lb/ft3	Conversion, g/lb	C_2H_2 Mol Weight, g/mol	C_2H_2 Usage, mol/day
70	0.0686	453.59	26.04	84

Usage, mol/day = (usage, cft/day x density, lb/ft3 x conversion, g/lb)/(molecular weight, g/mol)

C_2H_2 Usage, mol/day	CO2, mol/day	CO2 Mol Weight, g/mol	Conversion, g/lb	CO2, lb/day
84	167	44	453.59	16

$2C_2H_2 + 5O_2 \rightarrow 4CO_2 + 2H_2O$, therefore two moles of CO_2 are generated from every C_2H^2 mole.
CO_2, lb/day = CO_2, mole/day x MW, g/mol x conversion, g/lb

CO2, lb/day	Cutting/ Welding Days	Number of Tanks	Construction Period	CO2, lb/year
16	4	14	4	227

CO2, lb/project = CO2, lb/day x cutting/welding days x number of tanks

Table C-~~9~~5
Summary of PAR 1149 GHG Emissions

~~**Description**~~	~~**CO2, ton/yr**~~	~~**CO2, metric ton/yr**~~
~~Control Technology~~[a]	~~1,217~~	~~1,198~~
~~Mobile Source~~	~~70~~	~~69~~
~~Total~~	~~1,287~~	~~1,267~~

Table C-~~95~~ (Continued)
Summary of PAR 1149 GHG Emissions

Description	CO, lb/year	CO, ton/year	CO, metric ton/year
Construction - Mobile and Construction[a]	13,783	6.9	6.3
Construction Oxyacetylene[a]	227	0.11	0.10
Operational – Degassing[b]	2,710,521	1,355	1,229
Operational - Mobile	139,833	70	63
Total CO2 emissions	2,864,364	1,432	1,299

a) Based on four days of cutting and welding and construction over four years.
b) Control Technology Annual CO2 from Table 7 – Related Increase in Criteria Pollutants and Greenhouse Gas Emissions in the Draft Staff Report for Proposed Amended Rule 1149 – Storage Tank and Pipeline Cleaning and Degassing, February 2008.

Table C-~~96~~
Acute Health Risk from ICE

Code	Pollutant	CAS NO.	Usage, 1,000 gal/hr	4 Stroke-Rich Burn EF, lb/1,000 gal	4 Stroke-Rich Burn Qhr, lb/hr	Acute REL, (µg/m3)	X/Qhr ([µg/m3]/[lb/hr])	4 Stroke-Rich Burn HI
2	Benzene	71432	0.0176	0.143	0.0025168	28000	2000	0.0001798
4	1,3-Butadiene	106990	0.0176	0.06	0.001056	0	2000	
6	Carbon Tetrachloride	56235	0.0176	0.0016	2.816E-05	1900	2000	2.964E-05
9	Ethylene Dibromide	106934	0.0176	0.00193	3.397E-05	0	2000	
10	1,2-Dichloroethane	107062	0.0176	0.00102	1.795E-05	0	2000	
12	Formaldehyde	50000	0.0176	1.86	0.032736	94	2000	0.6965106
16	Methylene Chloride	75092	0.0176	0.00373	6.565E-05	68000	2000	1.931E-06
19	2-Methylnaphthalene	91576	0.0176	0	0	0	2000	
19	Acenaphthene	83329	0.0176	0	0	0	2000	
19	Acenaphthylene	208968	0.0176	0	0	22000	2000	0
19	Anthracene	120127	0.0176	0	0	22000	2000	0
19	Benz(a)anthracene	56553	0.0176	0	0	0	2000	
19	Benzo(a)pyrene	50328	0.0176	0	0	0	2000	
19	Benzo(b)fluoranthene	205992	0.0176	0	0	22000	2000	0
19	Benzo(e)pyrene	192972	0.0176	0	0	22000	2000	0

Table C-~~9~~6 (Continued)
Acute Health Risk from ICE

Code	Pollutant	CAS NO.	Usage, 1,000 gal/hr	4 Stroke-Rich Burn EF, lb/1,000 gal	4 Stroke-Rich Burn Qhr, lb/hr	Acute REL, (µg/m3)	X/Qhr ([µg/m3]/ [lb/hr])	4 Stroke-Rich Burn HI
19	Benzo(g,h,i)perylene	191242	0.0176	0	0	22000	2000	0
19	Benzo(k)fluoranthene	207089	0.0176	0	0	22000	2000	0
19	Chrysene	218019	0.0176	0	0	22000	2000	0
19	Fluoranthene	206440	0.0176	0	0	22000	2000	0
19	Fluorene	86737	0.0176	0	0	0	2000	
19	Indeno(1,2,3-c,d)pyrene	193395	0.0176	0	0	22000	2000	0
19	Naphthalene	91203	0.0176	0.00879	0.0001547	0	2000	
19	Perylene	198550	0.0176	0	0	22000	2000	0
19	Phenanthrene	85018	0.0176	0	0	0	2000	
19	Pyrene	129000	0.0176	0	0	22000	2000	0

Table C-~~9~~6 (Concluded)
Acute Health Risk from ICE

Code	Pollutant	CAS NO.	Usage, 1,000 gal/hr	4 Stroke-Rich Burn EF, lb/1,000 gal	Qhr, lb/hr	Acute REL, (µg/m3)	X/Qhr ([µg/m3]/ [lb/hr])	HI
21	Vinyl Chloride	75014	0.0176	0.00065	1.144E-05	68000	2000	3.365E-07
24	1,1,2,2-Tetrachloroethane	79345	0.0176	0.00229	4.03E-05	0	2000	
25	1,1,2-Trichloroethane	79005	0.0176	0.00138	2.429E-05	0	2000	
26	1,2,4-Trimethylbenzene	95636	0.0176	0	0	0	2000	
27	1,2-Dichloropropane	78875	0.0176	0.00118	2.077E-05	68000	2000	6.108E-07
28	1,3-Dichloropropene	542756	0.0176	0.00115	2.024E-05	22000	2000	1.84E-06
29	Acetaldehyde	75070	0.0176	0.252	0.0044352	68000	2000	0.0001304
30	Acrolein	107028	0.0176	0.238	0.0041888	0	2000	
32	Ammonia	7664417	0.0176	0.3	0.00528	22000	2000	0.00048
35	Chloroform	67663	0.0176	0.00124	2.182E-05	28000	2000	1.559E-06
40	Ethylbenzene	100414	0.0176	0.00224	3.942E-05	0	2000	
44	n-Hexane	110543	0.0176	0	0	22000	2000	0
51	Methanol	67561	0.0176	0.277	0.0048752	28000	2000	0.0003482
66	Styrene	100425	0.0176	0.00108	1.901E-05	0	2000	
68	Toluene	108883	0.0176	0.0505	0.0008888	22000	2000	0.0000808
70	Xylene	1330207	0.0176	0.0176	0.0003098	22000	2000	2.816E-05
								0.697794

Assumes two engines are used
Usage, 1,000 gal/hr = (8.8 gal/hr * 2 engines)/1,000
4 Stroke-Rich Burn EF, lb/1,000 gal from Annual Emissions Reporting Program
Qhr, lb/hr = usage, 1,000 gal/hr x 4 Stroke-Rich Burn EF, lb/1,000 gal
X/Qhr, ([µg/m3]/ [lb/hr]) from Table 6 of the Risk Assessment Procedures for Rules 1401 and 212, stack ≥ 14 to 24 foot and receptors within 25 meters of source.
4 Stroke-Rich Burn HI = (Qhr, lb/hr)/X/Qhr, ([µg/m3]/ [lb/hr])

Table C-10~~7~~ (
Acute Health Risk from Afterburners

Code	POLLUTANT	CAS NO.	EF <10 MMBTU/HR EF, lb/1,000 gal	10-100 MMBTU/HR EF, lb/1,000 gal	Usage, 1,000 gal/hr	Qhr, lb/hr	Acute REL, (µg/m3)	X/Qhr ([µg/m3]/ [lb/hr])	HI
2	Benzene	71432	0.00071	0.00051	0.0176	0.000012496	28000	2000	8.92571E-07
12	Formaldehyde	50000	0.00151	0.00109	0.0176	0.000026576	94	2000	0.000565447
19	PAHs (excluding Naphthalene)	1151	0.00001	0.00001	0.0176	0.000000176	0	2000	
19	Naphthalene	91203	0.00003	0.00003	0.0176	0.000000528	0	2000	
29	Acetaldehyde	75070	0.00038	0.00028	0.0176	0.000006688	68000	2000	1.96706E-07
30	Acrolein	107028	0.00024	0.00024	0.0176	0.000004224	0	2000	
32	Ammonia	7664417	0.3	0.3	0.0176	0.00528	22000	2000	0.00048
40	Ethyl benzene	100414	0.00084	0.00061	0.0176	0.000014784	0	2000	
44	Hexane	110543	0.00056	0.00041	0.0176	0.000009856	22000	2000	0.000000896
68	Toluene	108883	0.00325	0.00235	0.0176	0.0000572	22000	2000	0.0000052
70	Xylene	1330207	0.00241	0.00175	0.0176	0.000042416	22000	2000	0.000003856
									0.001056488

Assumes two afterburners are used
Usage, 1,000 gal/hr = (8.8 gal/hr * 2 engines)/1,000
EF <10 MMBTU/HR EF, lb/1,000 gal from Annual Emissions Reporting Program
Qhr,lb/hr = Usage, 1,000 gal/hr x EF <10 MMBTU/HR EF, lb/1,000 gal
X/Qhr, ([µg/m3]/ [lb/hr]) from Table 6 of the Risk Assessment Procedures for Rules 1401 and 212, stack ≥ 14 to 24 foot and receptors within 25 meters of source.
HI = (Qhr, lb/hr)/X/Qhr, ([µg/m3]/ [lb/hr])

APPENDIX C

COMMENT LETTER AND RESPONSE TO COMMENT

04/09/2008 09:42 714-667-8344 COMM. & ATU. PLNG. PAGE 02/02

COUNTY OF ORANGE
RESOURCES & DEVELOPMENT MANAGEMENT DEPARTMENT

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NCL 08-024

April 9, 2008

Mr. James Koizumi
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765-4182

SUBJECT: Draft Environmental Assessment for Proposed Amended Rule 1149 – Storage Tank and Pipeline Cleaning and Degassing

Dear Mr. Koizumi:

The above mentioned item is a Notice of Completion of a Draft Environmental Assessment for Proposed Amended Rule 1149 – Storage Tank and Pipeline Cleaning and Degassing located in the four-county South Coast Air 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 and the Mojave Desert Air Basin.

1-1

The County of Orange has reviewed the Draft Environmental Assessment and has no comments at this time. However, we would like to be advised of any further developments.

If you have any questions, please contact Mary Ann Jones at (714) 834-5387.

Sincerely,

Ronald L. Tippets, Chief
Current and Environmental Planning

Responses to Comment Letter #1
County of Orange
April 9, 2008

Response 1-1
SCAQMD staff understands that the County of Orange has no comments on the Draft EA. SCAQMD staff thanks the County of Orange for their interest in PAR 1149. The proposal will be presented to the SCAQMD Governing Board at the May 2, 2008 meeting.