

Proposed

**APCD PERMIT TO OPERATE NO. 10259  
AND  
PART 70 OPERATING PERMIT NO. 10259**

**GREKA OIL AND GAS, INC.  
SOUTH CAT CANYON STATIONARY SOURCE**

**DOMINION LEASE, CAT CANYON FIELD  
6527 DOMINION ROAD  
SANTA MARIA, CALIFORNIA 93454**

**OPERATOR**

**GREKA OIL AND GAS, INC. ("GREKA")**

**OWNERSHIP**

**GREKA OIL AND GAS, INC. ("GREKA")**

**SANTA BARBARA COUNTY  
AIR POLLUTION CONTROL DISTRICT**

**February 2010**

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## ABBREVIATIONS/ACRONYMS

AP-42	USEPA's <i>Compilation of Emission Factors</i>
APCD	Santa Barbara County Air Pollution Control District
API	American Petroleum Institute
ASTM	American Society for Testing Materials
BACT	Best Available Control Technology
bpd	barrels per day (1 barrel = 42 gallons)
CAM	compliance assurance monitoring
CEMS	continuous emissions monitoring
dscf	dry standard cubic foot
EU	emission unit
°F	degree Fahrenheit
gal	gallon
gr	grain
HAP	hazardous air pollutant (as defined by CAAA, Section 112(b))
H <sub>2</sub> S	hydrogen sulfide
I&M	inspection & maintenance
k	kilo (thousand)
l	liter
lb	pound
lbs/day	pounds per day
lbs/hr	pounds per hour
LACT	Lease Automatic Custody Transfer
LPG	liquid petroleum gas
M	mega (million)
MACT	Maximum Achievable Control Technology
MM	million
MW	molecular weight
NEI	net emissions increase
NG	natural gas
NSPS	New Source Performance Standards
O <sub>2</sub>	oxygen
OCS	outer continental shelf
ppm(vd or w)	parts per million (volume dry or weight)
psia	pounds per square inch absolute
psig	pounds per square inch gauge
PRD	pressure relief device
PTO	Permit to Operate
RACT	Reasonably Available Control Technology
ROC	reactive organic compounds, same as "VOC" as used in this permit
RVP	Reid vapor pressure
scf	standard cubic foot
scfd (or scfm)	standard cubic feet per day (or per minute)
SIP	State Implementation Plan
STP	standard temperature (60°F) and pressure (29.92 inches of mercury)
THC	Total hydrocarbons
tpy, TPY	tons per year
TVP	true vapor pressure
USEPA	United States Environmental Protection Agency
VE	visible emissions
VRS	vapor recovery system

# 1. Introduction

## 1.1 Purpose

1.1.1 General. The Santa Barbara County Air Pollution Control District (APCD) is responsible for implementing all applicable federal, state and local air pollution requirements that affect any stationary source of air pollution in Santa Barbara County. The federal requirements include regulations listed in the Code of Federal Regulations: 40 CFR Parts 50, 51, 52, 55, 61, 63, 68, 70 and 82. The State regulations may be found in the California Health & Safety Code, Division 26, Section 39000 et seq. The applicable local regulations can be found in the APCD's Rules and Regulations. This is a combined permitting action that covers both the Federal Part 70 permit (Part 70 Operating Permit No. 10259) as well as the State Operating Permit (Permit to Operate No. 10259).

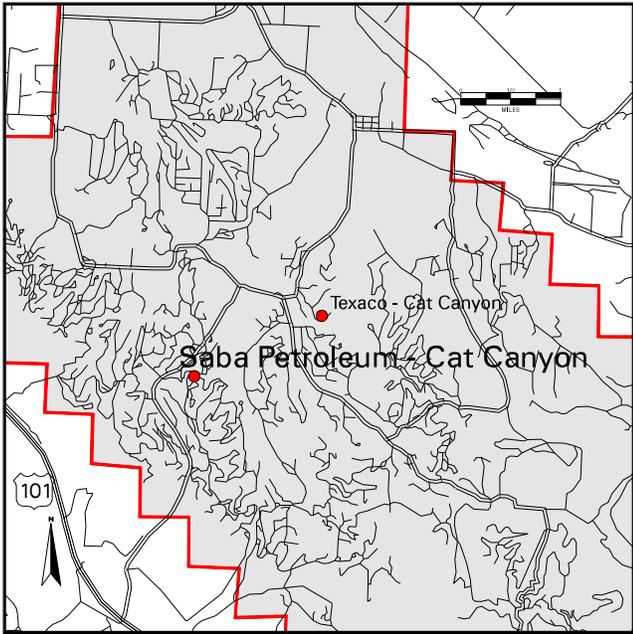
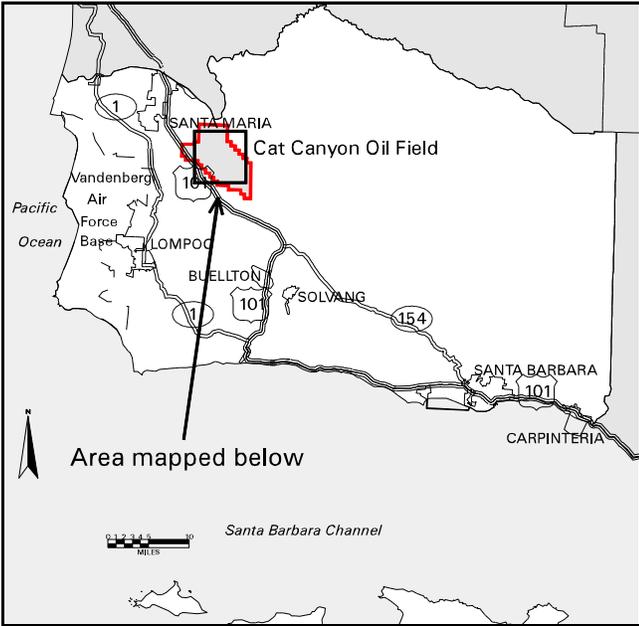
1.1.2 Part 70 Permitting. The initial Part 70 permit for the Dominion Lease was issued November 1, 2000 in accordance with the requirements of the APCD's Part 70 operating permit program. This permit is the third renewal of the Part 70 permit, and may include additional applicable requirements. Dominion Lease (FID 4127) is a part of the Greka South Cat Canyon stationary source (SSID = 2658), which is a major source for NO<sub>x</sub> and CO. Conditions listed in this permit are based on federal, state or local rules and requirements. Sections 9.A, 9.B and 9.C of this permit are enforceable by the APCD, the USEPA and the public since these sections are federally enforceable under Part 70. Where any reference contained in Sections 9.A, 9.B or 9.C refers to any other part of this permit, that part of the permit referred to is federally enforceable. Conditions listed in Section 9.D are "APCD-only" enforceable.

Pursuant to the stated aims of Title V of the CAAA of 1990 (i.e., the Part 70 operating permit program), this permit has been designed to meet two objectives. First, compliance with all conditions in this permit would ensure compliance with all federally-enforceable requirements for the facility. Next, the permit would be a comprehensive document to be used as a reference by the permittee, the regulatory agencies and the public to assess compliance.

## 1.2 Facility Overview

1.2.1 Facility Overview: Greka Oil and Gas, Inc. ("Greka") is the owner and operator of Dominion Lease, located at 6527 Dominion Road, Santa Maria, California 93454. The facility is located in the Cat Canyon Oil Field, approximately two miles south of the Palmer

**Figure 1.1 Location Map for Greka Cat Canyon**



Road and Cat Canyon Road intersection and six miles south-southeast of the city of Santa Maria in Santa Barbara County. For APCD regulatory purposes, the facility location is in the Northern Zone of Santa Barbara County<sup>1</sup>. Figure 1.1 shows the relative location of the facility within the county.

Dominion Lease was operational in September 1976 when its owner/operator Sun Oil of Delaware applied to the APCD for its first operating permits (PTO's 1713 through 1727). An operating permit was issued to Sun Oil by the APCD in October 1976. In March 1983, Sun Oil sold the lease to Brayton Oil d.b.a. Dominion Oil of California. In December 1996, some of the equipment items at the lease were sold to Oilwell Technologies and Enhancement Corporation (OTEC). Horizontal Ventures Incorporated (HVI) bought the lease from Dominion Oil and OTEC on November 21, 1997. In January 2000, Santa Maria Refining bought the lease from HVI. Greka assumed sole ownership of the facility resulting in the facility becoming part of the Greka Cat Canyon stationary source.

Oil, water, and gas are produced from eleven (11) wells located on the lease. As described below in Section 2.1, production is piped to a tank battery on the Dominion lease where gas, oil and water are separated. The gas collected is scrubbed and sent to Bell Lease for processing. The oil is processed and sent to shipping tanks and then to tanker trucks via a loading rack.

Stationary Source Overview: Prior to August 2002, the Greka Cat Canyon Stationary Source was a Part 70 source consisting of the Bell, Dominion, UCB, Blockman, Palmer-Stendl and an IC engines facility. In August 2002 Greka purchased nine leases within the Cat Canyon field from Vintage Petroleum which were incorporated into the existing Greka Pt70 Cat Canyon Stationary Source at that time. In November 2008 Greka, sold two of the leases within the stationary source; the California lease and United California lease. As a result of this sale, the stationary source configuration was reorganized based on the stationary source definition in APCD Rule 201. The single source was split into the following three sources: the North Cat Canyon Stationary Source consisting of the Goodwin, Harbordt, Lloyd, Mortenson, and Security/Thomas leases; the Central Cat Canyon Stationary Source consisting of the Porter lease and the South Cat Canyon Stationary Source consisting of the Bell, Blockman, Dominion, Palmer-Stendl, UCB and the IC Engines leases. Following this reorganization, only the South Cat Canyon Stationary Source (SSID = 2658) remained a Part 70 source.

The Dominion Lease consists of the following systems:

- Oil & Gas Production wells and surface system
- Oil, water and gas separation system
- Oil, diluent and water storage system
- Oil shipping system
- Gas scrubber system
- Operations support system
- Electrical system

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<sup>1</sup> APCD Rule 102, Definition: "Northern Zone"

A number of crude oil pumping and wastewater injection equipment at Dominion Lease site are powered by stationary, field-gas-fired IC engines. Operation of these IC engines and their emissions are addressed in Part 70 PTO 8036. These ICs may be electrified after notification to the APCD. All the permitted equipment, including the wells at this facility, are idle. See Section 3.5 for additional details.

1.2.2 Facility New Source Review Overview: Since July 1979, there have been three (3) NSR permit actions along with four (4) administrative permit actions. These are:

*ATC/PTO 5935*: Dominion Oil obtained an Authority to Construct (ATC 9435) in May 1985 to install an H<sub>2</sub>S scrubber system. PTO 5935 was issued on June 5, 1985.

*ATC/PTO 9734*: Dominion Oil obtained an Authority to Construct (ATC 9734) on May 19, 1997 to install a 1.0 MMBtu/hour Line Heater at Dominion Lease. The ATC was followed by PTO 9734 issued in October 1997.

*TRN/OO Letter*: Brayton Oil doing business as Dominion Oil applied for ownership transfer of Dominion Lease from Sun Oil on March 13, 1983. The transfer was granted on March 16, 1983.

*TRN/OO 8342*: Oilwell Technologies and Enhancement Corporation (OTEC) purchased ownership of equipment at Dominion Lease from Dominion Oil in November 1996. The ownership transfer was accepted by the APCD on December 17, 1996.

*TRN/OO 9734-01*: Horizontal Ventures Inc. (HVI) bought out the entire Dominion Lease from Dominion Oil and OTEC on November 21, 1997. The ownership transfer was accepted by the APCD on December 19, 1997.

*TRN/OO 9668*: Santa Maria Refining purchased ownership of the Dominion Lease from HVI. The APCD document TRN/OO 9668-01 was issued on February 8<sup>th</sup>, 2000.

*ATC 9884*: Greka obtained an Authority to Construct (ATC 9884) in May 1998 to install an oil loading rack at Dominion Lease and to increase the facility production rate to 500 bpd oil. The PTO for which an application was submitted on July 5, 2000 is incorporated in this permit.

### **1.3 Emission Sources**

Air pollution emissions from Dominion Lease are the result of oil and gas wells, shipping tanks, combustion sources, sumps and well cellars, scrubber, loading rack, and oil & gas piping components, such as valves and flanges. Section 4 of the permit provides the APCD's engineering analysis of these emission sources. Section 5 of the permit describes the allowable emissions from each permitted emissions unit and the Dominion Lease facility, as well as, the potential emissions from non-permitted emission units.

The emission sources include:

- Oil and gas wells (11)
- Crude oil shipping and reject tanks (2) and Diluent storage tank
- Field gas-fired Heater treater, Line Heater and Boiler
- Free water knockout vessel
- Pit and well cellars (9)
- Hydrogen Sulfide scrubber system with 3 scrubber units
- Grade level diluent loading rack
- Fugitive emission components
- Crude oil loading rack

A list of all permitted equipment is provided in Attachment 10.5.

#### **1.4 Emission Control Overview**

Air quality emission controls are utilized on Dominion Lease for a number of emission units to reduce air pollution emissions. Additionally, the use of utility grid power allows Dominion Lease facility to operate a number of electrically driven pumps and compressors on site. The emission controls employed at the facility include:

- Use of scrubber units to reduce the hydrogen sulfide content of the field gas to levels well below 796 ppmv (Rule 311) and facilitates compliance with Rules 303 and 310.
- A Fugitive Hydrocarbon Inspection & Maintenance (I&M) program for detecting and repairing leaks of hydrocarbons from piping components, consistent with the requirements of Rule 331, to reduce ROC emissions by approximately 80 percent.
- A monitoring and maintenance program for well cellars, consistent with the requirements of Rule 344, to reduce ROC emissions by approximately 70 percent.

#### **1.5 Offsets/Emission Reduction Credit Overview**

Operation of equipment listed in this permit does not require emission offsets nor does it provide emission reduction credits (ERC).

#### **1.6 Part 70 Operating Permit Overview**

1.6.1 Federally-enforceable Requirements: All federally enforceable requirements are listed in 40 CFR Part 70.2 (*Definitions*) under “applicable requirements.” These include all SIP-approved APCD Rules, all conditions in the APCD-issued Authority to Construct permits, and all conditions applicable to major sources under federally promulgated rules and regulations. All these requirements are enforceable by the public under CAAA. (*see Tables 3.1 and 3.2 for a list of federally enforceable requirements*)

1.6.2 Insignificant Emissions Units: Insignificant emission units are defined under APCD Rule 1301 as any regulated air pollutant emitted from the unit, excluding HAPs, that are less than 2 tons per year based on the unit’s potential to emit and any HAP regulated under section 112(g) of the Clean Air Act that does not exceed 0.5 ton per year based on the unit’s potential to emit. Insignificant activities must be listed in the Part 70 application with

supporting calculations. Applicable requirements may apply to insignificant units. See Section 5.5 for additional details.

- 1.6.3 Federal Potential to Emit: The federal potential to emit (PTE) of a stationary source does not include fugitive emissions of any pollutant, unless the source is: (1) subject to a federal NSPS/NESHAP requirement, or (2) included in the 29-category source list specified in 40 CFR 51.166 or 52.21. The federal PTE does include all emissions from any insignificant emissions units. See Section 5.4 for the federal PTE for this source.
- 1.6.4 Permit Shield: The operator of a major source may be granted a shield: (a) specifically stipulating any federally-enforceable conditions that are no longer applicable to the source and (b) stating the reasons for such non-applicability. The permit shield must be based on a request from the source and its detailed review by the APCD. Permit shields cannot be indiscriminately granted with respect to all federal requirements. Greka has not made a request for a permit shield.
- 1.6.5 Alternate Operating Scenarios: A major source may be permitted to operate under different operating scenarios, if appropriate descriptions of such scenarios are included in its Part 70 permit application and if such operations are allowed under federally-enforceable rules. Greka made no request for permitted alternative operating scenarios.
- 1.6.6 Compliance Certification: Part 70 permit holders must certify compliance with all applicable federally-enforceable requirements including permit conditions. Such certification must accompany each Part 70 permit application and be re-submitted annually on or before March 1<sup>st</sup> or on a more frequent schedule specified in the permit. Each certification is signed by a “responsible official” of the owner/operator company whose name and address is listed prominently in the Part 70 permit. (*see Section 1.6.9*)
- 1.6.7 Permit Reopening: Part 70 permits are re-opened and revised if the source becomes subject to a new rule or new permit conditions are necessary to ensure compliance with existing rules. The permits are also re-opened if they contain a material mistake or the emission limitations or other conditions are based on inaccurate permit application data.
- 1.6.8 Hazardous Air Pollutants (HAPs): Part 70 permits also regulate emission of HAPs from major sources through the imposition of maximum achievable control technology (MACT), where applicable. The federal PTE for HAP emissions from a source is computed to determine MACT or any other rule applicability. However, based on CAAA, Section 112(n)(4) stipulations, HAP emissions from any equipment at this facility cannot be aggregated with HAP emissions from other units at the facility, hence HAPs, including any lease-wide emissions computations, are not addressed in this permit (*see Section 4.11 and 5.5*).
- 1.6.9 Responsible Official: The designated responsible official and their mailing address is:  
Ms. Susan Whalen, Vice-president  
Greka Oil and Gas, Inc.  
6527 Dominion Road  
Santa Maria, California 93454

## 2. Process Description

### 2.1 Summary

- 2.1 *Process Summary.* Pumps inject diluent into the wells to improve the oil viscosity. The system directs well casing gas into the gas collection system (GCS). Gross crude oil production is routed to the tank battery where gas, oil, water, and sand are separated. Pipelines move the separated fluids into wastewater sumps, a heater treater and/or a test treater. Clean oil from the heater treater is placed into heated shipping tanks. The dry oil (BSW <3%) is transferred from the shipping tanks to the crude oil loading rack. The gas is scrubbed and collected in the GCS and sent to Bell Lease for processing. Wastewater is injected into wastewater wells.
- 2.1.1 *Production.* Dominion Lease operates eleven (11) oil and gas production wells. See Attachment 10.6 for a listing of these wells. Only nine of the wells are equipped with cellars. The production wells are not free flowing; artificial lift pumps have been installed in all wells to assist in production. Dominion Lease has a permitted production rate of 500 bpd of dry oil. A horizontal three-phase well test vessel is periodically operated at the lease to assess well production volumes.
- 2.1.2 *Gas, Oil, and Water Separation.* Fluid from the production wells is a mixture of oil, gas and water. Separation of the liquid and gas streams is accomplished in the free water knock out vessel. The free water knock out is designed to cause any liquid droplets in the gas stream to drop out. Gas from the vessel is routed to the gas collection system. Oil and water separation in the free water knockout takes place by gravity separation. The water cut of the crude oil leaving the free water knockout is controlled. Produced water from the free water knockout flows to the waste water sumps.
- 2.1.3 *Crude Oil Cleaning and Storage.* Oil from the free water knock out vessel is sent to a heater treater and then a line heater. The 2.0 MMBtu/hour heater treater and the 1.0 MMBtu/hour line heater are both fired on field gas. Any gas produced at the treaters is routed to the gas collection system. Clean oil from the treaters is transferred to the heated reject or shipping tank.
- 2.1.4 *Crude Oil and Diluent Tanks.* A 1,000 barrel capacity reject tank is used as a reserve to store oil from the heater treaters. A 500 barrel capacity stock tank stores oil for shipment out of the lease. These tanks are steam heated and equipped with pressure vacuum relief valves with a pressure setting range of 0.11 psig. These tanks are not connected to vapor recovery. Since diluent is used at the lease to assist in oil production, a 463 barrel (19,446 gallons) capacity diluent storage tank also serves the facility. This tank is unheated and is equipped with a pressure-vacuum relief valve with a pressure setting of 0.11 psig and a U-shaped vapor trap in the overflow line and is not connected to vapor recovery.
- 2.1.5 *Diluent Loading Rack.* A grade level truck unloading system operates to transfer diluent from highway tanker trucks to the diluent storage tank. An emergency diluent overflow containment pit serves to prevent diluent spills from spreading. The diluent loading rack is

not connected to vapor recovery. See section 3.4.2 (Rule 346), below.

- 2.1.6 *Crude Oil Loading Rack.* A grade level loading rack operates to transfer crude from the storage tank to tanker trucks. The loading rack is not connected to vapor recovery.
- 2.1.7 *Fuel Gas Scrubbing.* A fuel gas scrubber system with three vertical units scrubs field gas used for combustion at the lease.
- 2.1.8 *Vapor Recovery Systems.* There is no vapor recovery at the Dominion lease.

## **2.2 Support Systems**

- 2.2.1 *Piping and Pipeline Components.* A number of valves, fittings and flanges are used in the pipelines which transport petroleum fluids and process streams. These components emit fugitive hydrocarbons that are regulated via an inspection and maintenance program at the facility.
- 2.2.2 *Steam Generation:* A 0.271 MMBtu/hour boiler provides hot water to heat the crude oil in the two oil storage tanks.

## **2.3 Maintenance/Degreasing Activities**

- 2.3.1 *Paints and Coatings.* Maintenance painting at the lease is conducted on an intermittent basis. Normally only touchup and equipment labeling or tagging is done with cans of spray paint.
- 2.3.2 *Solvent Usage.* Solvents not used for surface coating thinning may be used at the lease for daily operations. Usage may include cold solvent degreasing and wipe cleaning with rags.

## **2.4 Planned Process Turnarounds**

Major pieces of equipment such as IC engines serving the oil well pumps or the injector pumps undergo maintenance as specified by the manufacturer. Maintenance of fugitive emissions critical components is carried out according to the requirements of Rule 331 *{Fugitive Emissions Inspection and Maintenance}*.

## **2.5 Other Processes**

Greka has stated in its Part 70 application that no other processes exist that would be subject to permit.

## **2.6 Detailed Process Equipment Listing**

Refer to Attachment **Error! Reference source not found.** for a complete listing of all permitted equipment.

## **3. Regulatory Review**

This Section identifies the federal, state and local rules and regulations applicable to Dominion Lease.

### 3.1 **Rule Exemptions Claimed**

APCD Rule 202 (Exemptions to Rule 201): Greka has not requested any permit exemption.

- De Minimis Exemption. There has been no de minimis increases at the Dominion lease since November 15, 1990.

APCD Rule 342 (Control of Oxides of Nitrogen from Boilers, Steam Generators and Process Heaters): The following exemptions from this Rule are approved by the APCD:

- the boiler with 0.271 MMBtu/hour heat input
- the heater treater with 2.0 MMBtu/hr heat input
- the line heater with 1.0 MMBtu/hour heat input

APCD Rule 344 (Petroleum Sumps, Pits and Well Cellars): The following exemption is approved by the APCD:

- Section B.4 allows the 184 ft<sup>2</sup> grade-level sump and the 9 ft<sup>2</sup> pit to be exempt from Rule 344 based on their surface areas being less than 1,000 ft<sup>2</sup>

### 3.2 **Compliance with Applicable Federal Rules and Regulations**

- 3.2.1 40 CFR Parts 51/52 *{New Source Review (Nonattainment Area Review and Prevention of Significant Deterioration)}*: Dominion Lease was constructed and permitted prior to the applicability of these regulations. However, all permit modifications as of July, 1979 are subject to APCD NSR requirements. Compliance with APCD Regulation VIII (*New Source Review*), ensures that future modifications to the facility will comply with these regulations.
- 3.2.2 40 CFR Part 60 *{New Source Performance Standards}*. There is no equipment in this permit subject NSPS requirements.
- 3.2.4 40 CFR Part 61 *{NESHAP}*: None of the equipment in this permit is subject NESHAP requirements.
- 3.2.5 40 CFR Part 63 *{MACT}*: This facility is not currently subject to the provisions of this Subpart. On June 17, 1999, EPA promulgated Subpart HH, a National Emission Standards for Hazardous Air Pollutants (NESHAPS) for Oil and Natural Gas Production and Natural Gas Transmission and Storage. Pursuant to this promulgation, Greka submitted information in June 2000 and supporting information in July 2000 indicating that the Bell, Blockman, Dominion, Palmer-Stendl, and UCB leases were exempt from the requirements of this MACT based on its black oil production. The MACT exemption holds for the South Cat Canyon stationary source, since black oil is produced at each of the leases comprising the source. The Greka South Cat Canyon stationary source is subject to general recordkeeping requirements as defined in condition 9.B.13.
- 3.2.6 40 CFR Part 63 *{MACT Standards}*: On August 27, 2003, EPA promulgated Subpart EEEE, a National Emission Standards for Hazardous Air Pollutants (NESHAPS) for Organic Liquids Distribution (Non-Gasoline). The District has determined that none of the permitted facilities within the Cat Canyon stationary source are subject to this MACT.

- 3.2.7 40 CFR Part 63 {MACT Standards}: On September 13, 2004, EPA promulgated Subpart DDDDD, a National Emission Standards for Hazardous Air Pollutants (NESHAPS) for Industrial, Commercial, and Institutional Boilers and Process Heaters. Greka has existing small, gaseous fueled heaters (under 10 MMBtu/hr) at this facility, however, the subpart does not specify any emission limits or work practice standards for this class of units. Thus, no DDDDD requirements apply.
- 3.2.6 40 CFR Part 64 {Compliance Assurance Monitoring}: This rule became effective on April 22, 1998 and affects emission units at the source subject to a federally enforceable emission limit or standard that use a control device to comply with the emission standard, and either pre-control or post-control emissions exceed the Part 70 source emission thresholds (currently 100 TPY for any pollutant). Compliance with this rule was evaluated and it was determined that no emission units at this facility are currently subject to CAM.
- 3.2.7 40 CFR Part 70 {Operating Permits}: This Subpart is applicable to Dominion Lease. **Table 3.4-1** lists the federally-enforceable APCD promulgated rules that are “generic” and apply to Dominion Lease. Table 3.4-2 lists the federally-enforceable APCD promulgated rules that are “unit-specific”. These tables are based on data available from the APCD’s administrative files and from Greka’s Part 70 Operating Permit renewal application submitted July 2009. Table 4.4-4 includes the adoption dates of these rules.

In its Part 70 renewal permit application submitted in July 2009, Greka certified compliance with all existing APCD rules and permit conditions. This certification is also required of Greka semi-annually. Issuance of this permit and compliance with all its terms and conditions will ensure that Greka complies with the provisions of all applicable Subparts.

### **3.3 Compliance with Applicable State Rules and Regulations**

- 3.3.1 Division 26. Air Resources {California Health & Safety Code}: The administrative provisions of the Health & Safety Code apply to this facility and will be enforced by the APCD. These provisions are APCD-enforceable only.
- 3.3.2 California Administrative Code Title 17: These sections specify the standards by which abrasive blasting activities are governed throughout the State. All abrasive blasting activities at Dominion Lease are required to conform to these standards. Compliance will be assessed through onsite inspections. These standards are APCD-enforceable only. However, CAC Title 17 does not preempt enforcement of any SIP-approved rule that may be applicable to abrasive blasting activities.

### **3.4 Compliance with Applicable Local Rules and Regulations**

- 3.4.1 Applicability Tables: In addition to **Table 3.4-1** and Table 3.4-2, Table 3.4-3 lists the non-federally enforceable APCD promulgated rules that apply to Dominion Lease. Table 3.4-4 lists the adoption date of all rules applicable to this permit at the date of this permit’s issuance.
- 3.4.2 Rules Requiring Further Discussion: This section provides a more detailed discussion regarding the applicability and compliance of certain rules.

The following is a rule-by-rule evaluation of compliance for Dominion Lease:

*Rule 301 - Circumvention:* This rule prohibits the concealment of any activity that would otherwise constitute a violation of Division 26 (Air Resources) of the California H&SC and the SBCAPCD rules and regulations. To the best of the District's knowledge, Greka is operating in compliance with this rule.

*Rule 302 - Visible Emissions:* This rule prohibits the discharge from any single source any air contaminants for which a period or periods aggregating more than three minutes in any one hour which is as dark or darker in shade than a reading of 1 on the Ringelmann Chart or of such opacity to obscure an observer's view to a degree equal to or greater than a reading of 1 on the Ringelmann Chart. Emission units subject to this rule include the internal combustion engines, the boiler and the heater treater(s) on the lease. Compliance will be assured by requiring all combustion equipment to be maintained according to manufacturer maintenance schedules.

*Rule 303 - Nuisance:* This rule prohibits Greka from causing a public nuisance due to the discharge of air contaminants. Based on the lease's location, the potential for public nuisance is small.

*Rule 304 - Particulate Matter, Northern Zone:* Dominion Lease is considered a Northern Zone source. This rule prohibits the discharge into the atmosphere from any source particulate matter in excess of 0.3 gr/scf. Emission units subject to this rule include the internal combustion engines, the boiler and the heater treater(s) on the lease. Compliance will be assured by requiring all combustion equipment to be maintained according to manufacturer maintenance schedules.

*Rule 309 - Specific Contaminants:* Under Section "A", no source may discharge sulfur compounds and combustion contaminants in excess of 0.2 percent as SO<sub>2</sub> (by volume) and 0.3 gr/scf (at 12% CO<sub>2</sub>) respectively. Sulfur emissions due to combustion of field gas containing no more than 796 ppmv H<sub>2</sub>S will comply with the SO<sub>2</sub> limit. All combustion equipment items have the potential to exceed the combustion contaminant limit if not properly maintained (see discussion on Rule 304 above for compliance).

*Rule 310 - Odorous Organic Compounds:* This rule prohibits the discharge of H<sub>2</sub>S and organic sulfides that result in a ground level impact beyond the property boundary in excess of either 0.06 ppmv averaged over 3 minutes or 0.03 ppmv averaged over 1 hour. No measured data exists to confirm compliance with this rule, however, all produced gas from Dominion Lease is scrubbed. As a result, it is expected that compliance with this rule will be achieved.

*Rule 311 - Sulfur Content of Fuels:* This rule limits the sulfur content of fuels combusted on Dominion Lease to 0.5 percent (by weight) for liquid fuels and 50 gr/100 scf (calculated as H<sub>2</sub>S) {or 796 ppmvd} for gaseous fuels. All combustion equipment on the lease are expected to be in compliance with the gaseous fuel limit as determined by fuel (field gas) analysis

documentation. The APCD-approved *Fuel Gas Sulfur and HHV Monitoring Plan* identifies sampling locations and procedures for combustion units permitted at this lease.

*Rule 317 - Organic Solvents:* This rule sets specific prohibitions against the discharge of emissions of both photochemically and non-photochemically reactive organic solvents (40 lb/day and 3,000 lb/day respectively). Solvents may be used on the lease during normal operations for degreasing by wipe cleaning and for use in paints and coatings in maintenance operations. There is the potential to exceed the limits under Section B.2 during significant surface coating activities. Greka is required to maintain records to ensure compliance with this rule.

*Rule 322 - Metal Surface Coating Thinner and Reducer:* This rule prohibits the use of photochemically reactive solvents for use as thinners or reducers in metal surface coatings. Greka is required to maintain records during maintenance operations to ensure compliance with this rule.

*Rule 323 - Architectural Coatings:* This rule sets standards for the application of surface coatings. The primary coating standard that will apply to the lease is for Industrial Maintenance Coatings that have a limit of 340 gram ROC per liter of coating, as applied. Greka is required to comply with the administrative requirements under Section F of the Rule for each container on the lease.

*Rule 324 - Disposal and Evaporation of Solvents:* This rule prohibits any source from disposing more than one and a half gallons of any photochemically reactive solvent per day by means that will allow the evaporation of the solvent into the atmosphere. Greka is required to maintain records to ensure compliance with this rule.

*Rule 325 - Crude Oil Production and Separation:* This rule, revised July 19, 2001, applies to equipment used in the production, gathering, storage, processing and separation of crude oil and gas prior to custody transfer. The primary requirements of this rule are under Sections D and E. Section D requires the use of vapor recovery systems on all storage tanks and vessels, including wash tanks and produced water tanks and wastewater separators. Section E requires that all produced gas be controlled at all times, except for wells undergoing routine maintenance. The crude tank (APCD Device #4091) and the reject tank (APCD Device #4090) are not connected to the vapor recovery system due to the denial of application for Authority to Construct 10445 per APCD Rule 208.D.4. Condition 9.C.4 prohibits operation of these tanks. The diluent storage tank is not connected to vapor recovery but is required to be prior to operating this tank. See permit condition 9.C.3.

*Rule 326 - Storage of Reactive Organic Liquids:* This rule applies to equipment used to store reactive organic compound liquids with a vapor pressure greater than 0.5 psia. The diluent tank at the lease is subject to this rule. Since the tank is less than 20,000 gallons capacity and uses a submerged fill pipe, compliance is met.

*Rule 330 - Surface Coating of Metal Parts and Products:* This rule sets standards for many types of coatings applied to metal parts and products. In addition to the ROC standards, this rule sets operating standards for application of the coatings, labeling and record-keeping.

*Rule 331 - Fugitive Emissions Inspection and Maintenance:* This rule applies to components in liquid and gaseous hydrocarbon service at oil and gas production fields. Ongoing compliance with the provisions of this rule is assessed via the APCD-approved Fugitive I&M Plan (March 2005), facility inspection by APCD personnel using an organic vapor analyzer and through analysis of operator records.

*Rule 342 - Control of Oxides of Nitrogen from Boilers, Steam Generators and Process Heaters:* This rule sets emission standards for external combustion units with a rated heat input greater than 5.0 MMBtu/hr. Dominion Lease emission units (heater treaters etc.) are not subject to this rule.

*Rule 343 - Petroleum Storage Tank Degassing:* This rule applies to the degassing of any above-ground tank, reservoir or other container of more than 40,000 gallons capacity containing any organic liquid with a vapor pressure greater than 2.6 psia or between 20,000 gallons and 40,000 gallons capacity containing any organic liquid with a vapor pressure greater than 3.9 psia.

*Rule 344 - Petroleum Sumps, Pits and Well Cellars:* This rule applies to petroleum sumps, pits and well cellars provided such sources have output exceeding 150 barrels per day. Post-primary sumps less than 1,000 square feet surface area at petroleum production sources are exempt from the Rule. The 9.0 ft<sup>2</sup> emergency diluent pit is exempt from this rule.

*Rule 346 - Loading of Organic Liquids:* This rule applies to the transfer of organic liquids into an organic liquid cargo vessel. For this rule only, an organic liquid cargo vessel is defined as a truck, trailer or railroad car. The diluent loading rack is not connected to vapor recovery but is required to be unless it qualifies for exemption. Greka formerly qualified for the 346.B.2 exemption (TVP < 1.5 psia) but is required to requalify for it prior to operating this unit. The crude oil loading rack is not connected to vapor recovery but is required to be prior to operating this unit. Compliance with this rule will be ensured by TVP analysis (see permit condition 9.C.6) as described in Section H. Compliance with this Rule is ensured based on on-site inspections.

*Rule 353 - Adhesives and Sealants:* This rule applies to the use of adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers or any other primers. Compliance with this rule is met through appropriate record keeping of adhesive and sealant materials used. Also, exclusive use of adhesive and sealant contained in containers of 16 fluid ounces or less demonstrate compliance with this rule.

*Rule 505 - Breakdown Conditions:* This rule describes the procedures that Greka must follow when a breakdown condition occurs to any emissions unit associated with Dominion Lease.

A breakdown condition is defined as an unforeseeable failure or malfunction of (1) any air pollution control equipment or related operating equipment which causes a violation of an emission limitation or restriction prescribed in the District Rules and Regulations, or by State

law, or (2) any in-stack continuous monitoring equipment, provided such failure or malfunction:

- a. Is not the result of neglect or disregard of any air pollution control law or rule or regulation;
- b. Is not the result of an intentional or negligent act or omission on the part of the owner or operator;
- c. Is not the result of improper maintenance;
- d. Does not constitute a nuisance as defined in Section 41700 of the Health and Safety Code;
- e. Is not a recurrent breakdown of the same equipment.

*Rule 603 - Emergency Episode Plans:* Section "A" of this rule requires the submittal of *Stationary Source Curtailment Plan* for all stationary sources that can be expected to emit more than 100 tons per year of hydrocarbons, nitrogen oxides, carbon monoxide or particulate matter. A revised plan was submitted and approved in April 2004.

**Table 3.4-1 Generic Federally-Enforceable APCD Rules**

<b>Generic Requirements</b>	<b>Affected Emission Units</b>	<b>Basis for Applicability</b>
<u>RULE 101</u> : Compliance by Existing Installations	All emission units	Emission of pollutants
<u>RULE 102</u> : Definitions	All emission units	Emission of pollutants
<u>RULE 103</u> : Severability	All emission units	Emission of pollutants
<u>RULE 201</u> : Permits Required	All emission units	Emission of pollutants
<u>RULE 202</u> : Exemptions to Rule 201	Applicable emission units, as listed in form 1302-H of the Part 70 application	Insignificant activities/emissions, per size/rating/function
<u>RULE 203</u> : Transfer	All emission units	Change of ownership
<u>RULE 204</u> : Applications	All emission units	Addition of new equipment of modification to existing equipment.
<u>RULE 205</u> : Standards for Granting Permits	All emission units	Emission of pollutants
<u>RULE 206</u> : Conditional Approval of Authority to Construct or Permit to Operate	All emission units	Applicability of relevant Rules
<u>RULE 207</u> : Denial of Applications	All emission units	Applicability of relevant Rules
<u>RULE 208</u> : Action on Applications – Time Limits	All emission units. Not applicable to Part 70 permit applications.	Addition of new equipment or modification to existing equipment.
<u>RULE 212</u> : Emission Statements	All emission units	Administrative
<u>RULE 301</u> : Circumvention	All emission units	Any pollutant emission
<u>RULE 302</u> : Visible Emissions	All emission units	Particulate matter emissions
<u>RULE 303</u> : Nuisance	All emission units	Emissions that can injure, damage or offend.
<u>RULE 304</u> : PM Concentration – North Zone	Each PM source	Emission of PM in effluent gas
<u>RULE 309</u> : Specific Contaminants	All emission units	Combustion contaminants
<u>RULE 310</u> : Odorous Org. Sulfides	All emission units	Emission of organic sulfides
<u>RULE 311</u> : Sulfur Content of Fuel	All combustion units	Use of fuel containing sulfur
<u>RULE 317</u> : Organic Solvents	Emission units using solvents	Solvent used in process operations.

<b>Generic Requirements</b>	<b>Affected Emission Units</b>	<b>Basis for Applicability</b>
<u>RULE 321</u> : Solvent Cleaning Operations	Emission units using solvents	Solvent used in process operations.
<u>RULE 322</u> : Metal Surface Coating Thinner and Reducer	Emission units using solvents	Solvent used in process operations.
<u>RULE 323</u> : Architectural Coatings	Paints used in maintenance and surface coating activities	Application of architectural coatings.
<u>RULE 324</u> : Disposal and Evaporation of Solvents	Emission units using solvents	Solvent used in process operations.
<u>RULE 330</u> : Surface Coating of Metal Parts	Emission units using metal parts coating	Surface coating used in maintenance operations.
<u>RULE 353</u> : Adhesives and Sealants	Emission units using adhesives and sealants	Adhesives and sealants used in process operations.
<u>RULE 505.A, B1, D</u> : Breakdown Conditions	All emission units	Breakdowns where permit limits are exceeded or rule requirements are not complied with.
<u>RULE 603</u> : Emergency Episode Plans	Stationary sources with PTE greater than 100 tpy	Greka South Cat Canyon is a major source.
<u>REGULATION VIII</u> : New Source Review	All emission units	Applications to generate ERC Certificates.
<u>REGULATION XIII (RULES 1301-1305)</u> : Part 70 Operating Permits	All emission units	Greka South Cat Canyon is a major source.

**Table 3.4-2 Unit-Specific Federally-Enforceable APCD Rules**

<b>Unit-Specific Requirements</b>	<b>Affected Emission Units</b>	<b>Basis for Applicability</b>
<u>RULE 325</u> : Crude Oil Production and Separation	Shipping tanks	All pre-custody production and processing emission units
<u>RULE 331</u> : Fugitive Emissions Inspection & Maintenance	All components (valves, flanges, seals, compressors and pumps) used to handle oil and gas	Components emit fugitive ROCs.
<u>RULE 346</u> : Loading of Organic Liquid Cargo Vessels	Loading rack	Non-exempt loading rack at an oil production facility.

**Table 3.4-3 Non-Federally-Enforceable APCD Rules**

<b>Requirement</b>	<b>Affected Emission Units</b>	<b>Basis for Applicability</b>
<u>RULE 210</u> : Fees	All emission units	Administrative
<u>RULE 310</u> : Odorous Org. Sulfides	All emission units	Emission of organic sulfides
<u>RULES 501-504</u> : Variance Rules	All emission units	Administrative
<u>RULE 505.B2, B3, C, E, F, G</u> : Breakdown Conditions	All emission units	Breakdowns where permit limits are exceeded or rule requirements are not complied with.
<u>RULES 506-519</u> : Variance Rules	All emission units	Administrative

**Table 3.4-4 Adoption Dates of APCD Rules Applicable at Issuance of Permit**

<b>Rule No.</b>	<b>Rule Name</b>	<b>Adoption Date</b>
Rule 101	Compliance by Existing Installations: Conflicts	June 1981
Rule 102	Definitions	April 17, 1997
Rule 103	Severability	October 23, 1978
Rule 201	Permits Required	April 17, 1997
Rule 202	Exemptions to Rule 201	April 17, 1997
Rule 203	Transfer	April 17, 1997
Rule 204	Applications	April 17, 1997
Rule 205	Standards for Granting Permits	April 17, 1997
Rule 206	Conditional Approval of Authority to Construct or Permit to Operate	October 15, 1991
Rule 208	Action on Applications - Time Limits	April 17, 1997
Rule 212	Emission Statements	October 20, 1992
Rule 301	Circumvention	October 23, 1978
Rule 302	Visible Emissions	June 1981
Rule 303	Nuisance	October 23, 1978
Rule 304	Particulate Matter Concentration - Northern Zone	October 23, 1978

<b>Rule No.</b>	<b>Rule Name</b>	<b>Adoption Date</b>
Rule 309	Specific Contaminants	October 23, 1978
Rule 310	Odorous Organic Sulfides	October 23, 1978
Rule 311	Sulfur Content of Fuels	October 23, 1978
Rule 317	Organic Solvents	October 23, 1978
Rule 321	Solvent Cleaning Operations	September 18, 1997
Rule 322	Metal Surface Coating Thinner and Reducer	October 23, 1978
Rule 323	Architectural Coatings	July 18, 1996
Rule 324	Disposal and Evaporation of Solvents	October 23, 1978
Rule 325	Crude Oil Production and Separation	July 19, 2001
Rule 331	Fugitive Emissions Inspection and Maintenance	December 10, 1991
Rule 344	Petroleum Sumps, Pits and Well Cellars	November 10, 1994
Rule 353	Adhesives and Sealants	August 19, 1999
Rule 360	Emissions of Oxides of NO <sub>x</sub> from Large Water Heaters, Boilers	October 17, 2002
Rule 361	Small Boilers, Steam Generators and Process Heaters	January 17, 2008
Rule 505	Breakdown Conditions (Section A, B1 and D)	October 23, 1978
Rule 603	Emergency Episode Plans	June 15, 1981
Rule 801	New Source Review	April 17, 1997
Rule 802	Nonattainment Review	April 17, 1997
Rule 803	Prevention of Significant Deterioration	April 17, 1997
Rule 804	Emission Offsets	April 17, 1997
Rule 805	Air Quality Impact and Modeling	April 17, 1997
Rule 806	Emission Reduction Credits	April 17, 1997
Rule 901	New Source Performance Standards (NSPS)	May 16, 1996
Rule 903	Outer Continental Shelf (OCS) Regulations	November 10, 1992
Rule 1001	National Emission Standards for Hazardous Air Pollutants S)	October 23, 1993
Rule 1301	General Information	September 18, 1997
Rule 1302	Permit Application	November 9, 1993

<b>Rule No.</b>	<b>Rule Name</b>	<b>Adoption Date</b>
Rule 1303	Permits	November 9, 1993
Rule 1304	Issuance, Renewal, Modification and Reopening	November 9, 1993

### **3.5 Compliance History**

This section contains a summary of the compliance history for this facility and was obtained from documentation contained in the APCD's Administrative file.

3.5.1 *Facility Inspections.* Since the prior permit renewal, facility inspections were conducted on May 22, 2008 and May 15, 2009. Each report indicates that the facility was operating in compliance with APCD rules and the conditions of this permit at the time of the inspections. Each report also indicates that all equipment and wells at this facility are idle.

3.5.2 The following enforcement actions were issued for the Dominion lease since the previous permit renewal:

NOV 9385: Violation of Rule 325. Issued 6/09/2009. Failure to control produced gas emissions.

3.5.3 Significant Historical Hearing Board Actions / Variances: There have been no significant historical Hearing Board actions or variances since the prior permit renewal.

## **4. Engineering Analysis**

### **4.1 General**

The engineering analyses performed for this permit were limited to the review of:

- ☞ facility process flow diagrams
- ☞ emission factors and calculation methods for each emissions unit
- ☞ emission control equipment (including RACT, BACT, NSPS, NESHAP, MACT)
- ☞ emission source testing, sampling, CEMS, CAM
- ☞ process monitors needed to ensure compliance

Unless noted otherwise, default ROC/THC reactivity profiles from the APCD's document titled "VOC/ROC Emission Factors and Reactivities for Common Source Types" dated 7/13/98 (ver. 1.1) was used to determine non-methane, non-ethane fraction of THC.

### **4.2 Stationary Combustion Sources**

The stationary combustion sources associated with Dominion Lease consist of a boiler, a heater treater and a line heater. Primary power at the lease is supplied by the local power company (Southern California Edison) electric grid.

4.2.1 *Gas-fired External Combustion Units.* The field gas-fired boiler, manufactured by National Boiler, supplies hot water for facility operations including crude oil heating. The unit is rated at 0.271 MMBtu/hour heat input. The facility also operates a field gas-fired heater treater, manufactured by Superior and rated at 2.0 MMBtu/hour heat input and a field gas-fired line heater, manufactured by Lakota Engineering and rated at 1.0 MMBtu/hour heat input. The calculation methodology for all external combustion units is:

$$ER = [ ( EF \times SCFPP \times HHV ) \div 10^6 ]$$

Where:

ER = emission rate (lb/period)  
 EF = pollutant specific emission factor (lb/MMBtu)  
 SCFPP = gas flow rate per operating period (scf/period)  
 HHV = gas higher heating value (Btu/scf)

All emission factors for the 'uncontrolled' gas-fired external combustion units are obtained from the USEPA's AP-42 (Air Chief, Version 6.0, October 1998). Sulfur content of the field gas to the combustion units assumed to be the Rule 311 applicable limit of 796 ppmv S (measured as hydrogen sulfide). The emission calculation basis is shown in Attachment 10.2.

### 4.3 Fugitive Hydrocarbon Sources

4.3.1 *General.* Fugitive emissions from valves, fittings, flanges, seals, pumps, compressors and wellheads (casings) consist of reactive organic compounds (ROC) and a variety of hazardous air pollutants (HAPs) such as benzene and hexane.

4.3.2 *Well Head Components.* For oil wells at existing onshore sources without a detailed component count inventory, the APCD uses statistical models developed by the CARB/KVB to quantify emissions of fugitive ROC. APCD Policy and Procedure 6100.060.1996 (Calculation of Fugitive Hydrocarbon Emissions at Oil and Gas Facilities by the CARB/KVB Method, July 1996) is used as the basis for implementing the CARB/KVB methodology. The CARB/KVB Method uses statistical models based on the facility's gas/oil ratio and the number of active wells to determine the emission factor. Emission factors from the CARB/KVB Method were also used determining emissions from wellhead casings (i.e., piping and equipment associated with the underground casing) and from pumps and compressors.

A control efficiency of 80% was applied for all components. Ongoing compliance is determined in the field by inspection with an organic vapor analyzer and verification of operator records. The calculation methodology is:

$$ER = [(EF \times \#wells \div 24) \times (1 - CE) \times (HPP)]$$

Where:

ER = Emission rate (lb./period)  
 EF = ROC emission factor (lb./well-day)  
 # Wells = Number of active oil and gas wells (well)  
 CE = Control efficiency  
 HPP = Operating hours per time period (hrs/period)

Ongoing compliance is determined in the field by inspection with an organic vapor analyzer and verification of operator records. Detailed emission calculations for fugitive emissions are shown in Attachment 10.2.

#### **4.4 Tanks/Vessels/Sumps/Separators**

4.4.1 *Tanks.* Dominion Lease has one 1,000 bbl capacity crude oil reject tank, one 500 barrel capacity crude oil shipping tank and a 463 barrel capacity diluent storage tank. The crude oil tanks are steam heated. All tanks are equipped with pressure-vacuum relief valves with pressure settings of 0.11 psig. The tanks are not connected to vapor recovery. Detailed tank calculations for emissions are performed using the methods presented in USEPA AP-42, Chapter 7. For the diluent tank, only the breathing losses were computed; the working losses were set to zero.

4.4.2 *Diluent Emergency Pit.* Emissions from the 9.0 ft<sup>2</sup> pit are based on the CARB/KVB Report (*Emissions Characteristics of Crude Oil Production in California*, January 1983). The calculation is:

$$ER = [(EF \times SAREA \div 24) \times (1 - CE) \times (HPP)]$$

Where:

ER	=	emission rate (lb/period)
EF	=	ROC emission factor (lb/ft <sup>2</sup> -day)
SAREA	=	unit surface area (ft <sup>2</sup> )
CE	=	control efficiency
HPP	=	operating hours per time period (hrs/period)

Emission calculations are shown in Attachments 10.1 and 10.2.

#### **4.5 Gas Collection/Vapor Recovery Systems**

4.5.1 *GCS/VRS.* A gas collection system (GCS) collects gas produced from the test vessel, the heater treater and the free water knockout vessel and sends it to off lease for processing.

4.5.2 *Gas Scrubber:* A hydrogen sulfide scrubber system, equipped with three vertical scrubber units, operates at the lease to scrub fuel gas.

#### **4.6 General Emission Sources**

4.6.1 *Surface Coating.* Surface coating operations typically include normal touch up activities. Emissions are determined based on mass balance calculations assuming all solvents evaporate into the atmosphere. Emission of PM/PM<sub>10</sub> from paint over-spray are not calculated due to the lack of established calculation techniques.

4.6.2 *Solvent Use.* Solvent usage (not used as thinners for surface coating) occurring at this facility as part of normal daily operations includes laboratory use and wipe cleaning maintenance. Mass balance emission calculations are used assuming all the solvent used evaporates to the atmosphere.

- 4.6.3 *Abrasive Blasting.* Abrasive blasting with CARB certified sands may be performed as a preparation step prior to surface coating. Particulate matter is emitted during this process. A general emission factor of 0.01 pound PM per pound of abrasive is used (SCAQMD - Permit Processing Manual, 1989) to estimate emissions of PM and PM<sub>10</sub> when needed for compliance evaluations. A PM/PM<sub>10</sub> ratio of 1.0 is assumed.

#### **4.7 Other Emission Sources**

- 4.7.1 *Loading Station.* A single nozzle diluent truck unloading station is used to load diluent from highway tanker trucks to the diluent tank. The tank is loaded using bottom filling. The ROC emissions are computed based on an hourly unloading of 160 barrels, daily unloading of 463 barrels and an annual oil loading rate of 10,950 barrels. Uncontrolled ROC emissions from tanker truck loading are estimated from emission equations and factors listed in USEPA, AP-42, (Section 5).
- 4.7.2 *Loading Racks.* A crude oil loading rack is used to load crude oil from the stock tank to highway tanker trucks. The ROC emissions are computed based on an hourly loading of 160 barrels, a peak daily oil loading of 500 bbl and an annual crude oil loading rate of 54,750 barrels. Uncontrolled ROC emissions from tanker truck crude oil loading are estimated from emission equations and factors listed in USEPA, AP-42, (Section 5). The loading rack calculations are shown in Attachment 10.2.

#### **4.8 BACT/NSPS/NESHAP/MACT**

- 4.8.1 *BACT:* There are no emission units at this facility subject to best available control technology (BACT) or new source performance standards (NSPS).
- 4.8.2 *MACT - Subpart HH:* On June 17, 1999, EPA promulgated Subpart HH, a National Emission Standards for Hazardous Air Pollutants (NESHAPS) for Oil and Natural Gas Production and Natural Gas Transmission and Storage. Greka submitted information in June 2000 and supporting information in July 2000 indicating the Cat Canyon source was exempt from the requirements of this MACT based on 'black oil' production. The Greka South Cat Canyon source, which includes the Dominion lease, is still exempt from the requirements of this MACT.
- 4.8.3 *MACT - Subpart EEEE:* On August 27, 2003, EPA promulgated Subpart EEEE, a National Emission Standards for Hazardous Air Pollutants (NESHAPS) for Organic Liquids Distribution (Non-Gasoline). The APCD determined that none of the permitted facilities within the stationary source are subject to this MACT.
- 4.8.4 *Proposed MACT - Subpart DDDDD:* On September 13, 2004 EPA promulgated Subpart DDDDD, a National Emission Standards for Hazardous Air Pollutants (NESHAPS) for Industrial, Commercial, and Institutional Boilers and Process Heaters. As discussed in section 3.2.7 above, there are no emission units at this facility subject to this subpart.

## **4.9 CEMS/Process Monitoring/CAM**

4.9.1 *CEMS*: There are no CEMS at this facility.

4.9.2 *Process Monitoring*: In many instances, ongoing compliance beyond a single (snap shot) source test is assessed by the use of process monitoring systems. Examples of these monitors include: engine hour meters, fuel usage meters, water injection mass flow meters, flare gas flow meters and hydrogen sulfide analyzers. Once these process monitors are in place, it is important that they be well maintained and calibrated to ensure that the required accuracy and precision of the devices are within specifications. At a minimum, the following process monitors will be required to be calibrated and maintained in good working order:

- Boiler, heater treater, and line treater Fuel Flow Meter(s)

To implement the above calibration and maintenance requirements, the APCD-approved *Fuel Use Monitoring and Process Monitor Calibration and Maintenance Plan* (April 2004) addresses manufacturer recommended maintenance and calibration schedules. Where manufacturer guidance is not available, the recommendations of comparable equipment manufacturers and good engineering judgment is to be utilized.

4.9.3 *CAM*: Greka South Cat Canyon is a major source that is subject to the USEPA's Compliance Assurance Monitoring (CAM) rule (40 CFR 64). Any emissions unit with uncontrolled emissions potential exceeding major source emission thresholds for any pollutant is subject to CAM provisions. Compliance with this rule was evaluated and it was determined that no emission units at this facility are currently subject to CAM.

## **4.10 Source Testing/Sampling**

Source testing and sampling are required in order to ensure compliance with permitted emission limits, prohibitory rules, control measures and the assumptions that form the basis of this operating permit. There is no equipment in this permit subject to source testing. At a minimum, the process streams below are required to be sampled and analyzed. Duplicate samples are required:

- Produced Gas: A sample of the produced gas shall be obtained from the gas line entering each permitted combustion unit. Analysis for HHV shall be measured quarterly, annually for total sulfur, and monthly for hydrogen sulfide. [NOTE: Under a County Land Use permit, Greka must keep the gas pipeline fuel S level below 29 ppmvd. Greka continuously monitors its fuel line, using APCD-approved methods (Re: *APCD ATC/PTO 9412*) to comply with this restriction. Sampling shall be conducted consistent with the APCD approved *Fuel Gas Sulfur and HHV Monitoring Plan*.
- Produced Oil/waste water: Sample taken at the initial wash tank. Analysis for: API gravity, true vapor pressure. Samples shall be taken on an annual basis per the APCD approved *Rule 325 Sampling Plan*.

All sampling and analyses are required to be performed according to APCD approved procedures and methodologies. Typically, the appropriate ASTM methods are acceptable. However, TVP sampling methods for liquids with an API gravity under 20<sup>o</sup> require specialized procedures (see APCD Rule 325). It is important that all sampling and analysis be traceable by chain of custody procedures.

#### **4.11 Part 70 Engineering Review: Hazardous Air Pollutant Emissions**

Hazardous air pollutant emissions have not been estimated for this facility.

## **5. Emissions**

### **5.1 General**

This Part 70/APCD PTO 10259 reevaluation addresses operations at Dominion Lease. The Part70/ PTO 10259 renewal evaluated any new requirements that needed to be addressed since the last renewal, any applicable changes to the equipment list, and whether monitoring was sufficient for compliance.

Emissions calculations are divided into "permitted" and "exempt" categories. Permit exempt equipment is determined by APCD Rule 202. The permitted emissions for each emissions unit is based on the equipment's potential-to-emit (as defined by Rule 102). Section 5.2 details the permitted emissions for each emissions unit. Section 5.3 details the overall permitted emissions for the facility based on reasonable worst-case scenarios using the potential-to-emit for each emissions unit. Section 5.4 provides the federal potential to emit calculation using the definition of potential to emit used in Rule 1301. Section 5.5 provides the estimated emissions from permit exempt equipment and also serves as the Part 70 list of insignificant emission. Section 5.6 provides the net emissions increase calculation for the facility and the stationary source. In order to accurately track the emissions from a facility, the APCD uses a computer database. Attachment 10.4 contains the APCD's documentation for the information entered into that database.

### **5.2 Permitted Emission Limits - Emission Units**

Each emissions unit associated with the facility was analyzed to determine the potential-to-emit for the following pollutants:

- ⇒ Nitrogen Oxides (NO<sub>x</sub>)<sup>2</sup>
- ⇒ Reactive Organic Compounds (ROC)
- ⇒ Carbon Monoxide (CO)
- ⇒ Sulfur Oxides (SO<sub>x</sub>)<sup>3</sup>
- ⇒ Particulate Matter (PM)<sup>4</sup>
- ⇒ Particulate Matter smaller than 10 microns (PM<sub>10</sub>)

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<sup>2</sup> Calculated and reported as nitrogen dioxide (NO<sub>2</sub>)

<sup>3</sup> Calculated and reported as sulfur dioxide (SO<sub>2</sub>)

<sup>4</sup> Calculated and reported as all particulate matter smaller than 100 μm

Permitted emissions are calculated for both short term (daily) and long term (annual) time periods. Section 4.0 (Engineering Analysis) provides a general discussion of the basic calculation methodologies and emission factors used. The reference documentation for the specific emission calculations, as well as detailed calculation spreadsheets, may be found in Section 4 and Attachments 10.1 and 10.2 respectively. **Error! Reference source not found.** provides the basic operating characteristics. **Error! Reference source not found.** provides the specific emission factors. **Error! Reference source not found.** shows the permitted short-term emissions and **Error! Reference source not found.** shows the permitted long-term emissions for each unit or operation. In the table, the last column indicates whether the emission limits are federally enforceable.

Table 5.2-1. Operating Equipment Description

Equipment Category	Description	APCD Device ID#	Device Specifications					Usage Data					Reference		
			Fuel	HHV (Btu/scf)	ppmv S <sup>(a)</sup>	Size	Units	Capacity	Units	Emission Reduction %	hr	day		qtr	year
Combustion: External	Boiler: National	4097	FG	1050	796	0.27	MMBtu/hr	0.27	MMBtu/hr	--	1.00	24	2190	8760	A
	Heater Treater	4096	FG	1050	796	2.00	MMBtu/hr	2.00	MMBtu/hr	--	1.00	24	2190	8760	
	Line Heater	4104	FG	1050	796	1.00	MMBtu/hr	1.00	MMBtu/hr	--	1.00	24	2190	8760	
Fugitive Components - Gas/Heavy Liquid	Valves and fittings	4098	--	--	--	11	well units	--	--	80%	1.00	24	2190	8760	B
	Wellheads	4106	--	--	--	11	well units	--	--	80%	1.00	24	2190	8760	
	Compressors	4098	--	--	--	11	well units	--	--	80%	1.00	24	2190	8760	
	Pumps	4098	--	--	--	11	well units	--	--	80%	1.00	24	2190	8760	
Tanks	Crude Tank	4091	--	--	--	15.3' x 16'		500	bbl	--	1.00	24	2190	8760	C
	Reject Tank	4090	--	--	--	21.5' x 16'		1,000	bbl	--	1.00	24	2190	8760	
	Diluent Tank	4092	--	--	--	15.3' x 16'		463	bbl	--	1.00	24	2190	8760	
Sumps/Cellars/Pits	Well Cellars	4107	--	--	--	358	ft <sup>2</sup>			70%	1.00	24	2190	8760	D
	Diluent Emergency Pit		--	--	--	9	ft <sup>2</sup>			0%	1.00	24	36	72	
Loading Racks	Diluent Unloading Station	8387	--	--	--	6.72	kgal/hr			--	1.00	3	17	68	E
	Crude Oil Loading Rack	8386	--	--	--	7.72	kgal/hr			--	1.00	3	285	1141	

Footnotes:

(a) ppmv as total reduced sulfur content expressed as hydrogen sulfide equivalent; but not hydrogen sulfide content only.

**Table 5.2-2. Equipment Emission Factors**

Equipment Category	Description	Emission Factors							Reference
		NO <sub>x</sub>	ROC	CO	SO <sub>x</sub>	PM	PM10	Units	
Combustion: External	Boiler: National	0.0980	0.0054	0.0824	0.1362	0.0075	0.0075	lb/MMBtu	A
	Heater Treater	0.0980	0.0054	0.0824	0.1362	0.0075	0.0075	lb/MMBtu	
	Line Heater	0.1000	0.0042	0.0210	0.1375	0.0125	0.0125	lb/MMBtu	
Fugitive Components - Gas/Heavy Liquid	Valves and fittings	--	2.8053	--	--	--	--	lb/day-well	B
	Wellheads	--	0.0097	--	--	--	--	lb/day-well	
	Compressors	--	0.0679	--	--	--	--	lb/day-well	
	Pumps	--	0.0039	--	--	--	--	lb/day-well	
Tanks	Crude Tank	<b>See Table 10.2</b>		--	--	--	--	<b>AP-42, Ch.7</b>	C
	Reject Tank	<b>See Table 10.2</b>		--	--	--	--	<b>Eqn. Units --</b>	
	Diluent Tank	<b>See Table 10.2</b>		--	--	--	--	<b>Eqn. Units --</b>	
Sumps/Cellars/Pits	Well Cellars	--	0.0941	--	--	--	--	lb/ft <sup>2</sup> -day	D
	Diluent Emergency Pit	--	0.0058	--	--	--	--	lb/ft <sup>2</sup> -day	
Loading Racks	Diluent Unloading Station	--	1.7576	--	--	--	--	lbs./1000 gal	E
	Crude Oil Loading Rack	--	0.6200	--	--	--	--	lbs./1000 gal	

Footnotes:

(a) SO<sub>x</sub> as SO<sub>2</sub>; NO<sub>x</sub> as NO<sub>2</sub>. This applies to all sheets.

**Table 5.2-3. Short Term Emission Limits**

Equipment Category	Description	NOx lb/day	ROC lb/day	CO lb/day	SOx lb/day	PM lb/day	PM10 lb/day	Federal Enforceability
Combustion: External	Boiler: National	0.64	0.04	0.54	0.89	0.05	0.05	AE
	Heater Treater	4.70	0.26	3.96	6.54	0.36	0.36	AE
	Line Heater	2.40	0.10	0.50	3.30	0.30	0.30	FE
Fugitive Components - Gas/Heavy Liquid	Valves and fittings	--	6.17	--	--	--	--	AE
	Wellheads	--	0.02	--	--	--	--	AE
	Compressors	--	0.15	--	--	--	--	AE
	Pumps	--	0.01	--	--	--	--	AE
Tanks	Crude Tank	--	5.02	--	--	--	--	AE
	Reject Tank	--	6.65	--	--	--	--	AE
	Diluent Tank	--	0.95	--	--	--	--	AE
Sumps/Cellars/Pits	Well Cellars	--	10.11	--	--	--	--	AE
	Diluent Emergency Pit	--	0.05	--	--	--	--	AE
Loading Racks	Diluent Unloading Station	--	34.18	--	--	--	--	AE
	Crude Oil Loading Rack	--	13.03	--	--	--	--	AE

**Table 5.2-4. Long Term Emission Limits.**

<b>Equipment Category</b>	<b>Description</b>	<b>NO<sub>x</sub></b>	<b>ROC</b>	<b>CO</b>	<b>SO<sub>x</sub></b>	<b>PM</b>	<b>PM10</b>	<b>Federal</b>
		TPY	TPY	TPY	TPY	TPY	TPY	Enforceability
Combustion: External	Boiler: National	0.12	0.01	0.10	0.16	0.01	0.01	AE
	Heater Treater	0.86	0.05	0.72	1.19	0.07	0.07	AE
	Line Heater	0.44	0.02	0.09	0.60	0.05	0.05	FE
Fugitive Components - Gas/Heavy Liquid	Valves and fittings	--	1.13	--	--	--	--	AE
	Wellheads	--	0.00	--	--	--	--	AE
	Compressors	--	0.03	--	--	--	--	AE
	Pumps	--	0.00	--	--	--	--	AE
Tanks	Crude Tank	--	0.92	--	--	--	--	AE
	Reject Tank	--	1.21	--	--	--	--	AE
	Diluent Tank	--	0.17	--	--	--	--	AE
Sumps/Cellars/Pits	Well Cellars	--	1.84	--	--	--	--	AE
	Diluent Emergency Pit	--	0.00	--	--	--	--	AE
Loading Racks	Diluent Unloading Station	--	0.40	--	--	--	--	AE
	Crude Oil Loading Rack	--	2.38	--	--	--	--	AE

### 5.3 Permitted Emission Limits - Facility Totals

The total potential-to-emit for all emission units associated with the facility was analyzed. This analysis looked at the reasonable worst-case operating scenarios for each operating period. The equipment operating in each of the scenarios are presented below. Unless otherwise specified, the operating characteristics presented below for each emission unit are assumed. **Error! Reference source not found.** shows the total permitted emissions for the facility.

#### Daily Scenario:

- Heater treater, Line heater and Boiler
- Fugitive emission from the oil wells, including well cellars
- Crude Oil shipping tank and reject tank, Diluent storage tank
- diluent containment pit
- Diluent unloading station/oil loading rack

#### Annual Scenario:

- Heater treater, Line heater and Boiler
- Fugitive emission from the oil wells, including well cellars
- Crude Oil shipping tank and reject tank, Diluent storage tank
- diluent containment pit
- Diluent unloading station/oil loading rack

**Table 5.3 Total Permitted Facility Emissions**

#### A. Daily

<b>Equipment Category</b>	<b>NOx</b>	<b>ROC</b>	<b>CO</b>	<b>SOx</b>	<b>PM</b>	<b>PM10</b>
External Combustion	7.74	0.40	5.00	10.72	0.71	0.71
Fugitive Components - Gas/Heavy Liquid	--	6.35	--	--	--	--
Tanks	--	12.62	--	--	--	--
Sumps/Cellars/Pits	--	10.16	--	--	--	--
Loading Racks	--	47.20	--	--	--	--
<b>Totals (lb/day)</b>	<b>7.74</b>	<b>76.73</b>	<b>5.00</b>	<b>10.72</b>	<b>0.71</b>	<b>0.71</b>

#### B. Annual

<b>Equipment Category</b>	<b>NOx</b>	<b>ROC</b>	<b>CO</b>	<b>SOx</b>	<b>PM</b>	<b>PM10</b>
External Combustion	1.41	0.07	0.91	1.96	0.13	0.13
Fugitive Components - Gas/Heavy Liquid	--	1.16	--	--	--	--
Tanks	--	2.30	--	--	--	--
Sumps/Cellars/Pits	--	1.84	--	--	--	--
Loading Racks	--	2.78	--	--	--	--
<b>Totals (TPY)</b>	<b>1.41</b>	<b>8.16</b>	<b>0.91</b>	<b>1.96</b>	<b>0.13</b>	<b>0.13</b>

**5.4 Part 70: Federal Potential to Emit for the Facility**

Table 5.4 lists the federal Part 70 potential to emit. For facilities subject to Part 70 Regulation, all emissions, except fugitive emissions, are counted in the federal definition of potential to emit. However, fugitives are counted in the Federal potential to emit if the facility is subject to any applicable NSPS or NESHAP requirement. Dominion Lease is not subject to any NSPS/NESHAP.

**Table 5.4 Federal Potential to Emit**

**A. Daily**

<b>Equipment Category</b>	<b>NOx</b>	<b>ROC</b>	<b>CO</b>	<b>SOx</b>	<b>PM</b>	<b>PM10</b>
External Combustion	7.74	0.40	5.00	10.72	0.71	0.71
Tanks	--	12.62	--	--	--	--
<b>Totals (lb/day)</b>	<b>7.74</b>	<b>13.02</b>	<b>5.00</b>	<b>10.72</b>	<b>0.71</b>	<b>0.71</b>

**C. Annual**

<b>Equipment Category</b>	<b>NOx</b>	<b>ROC</b>	<b>CO</b>	<b>SOx</b>	<b>PM</b>	<b>PM10</b>
External Combustion	1.41	0.07	0.91	1.96	0.13	0.13
Tanks	--	2.30	--	--	--	--
<b>Totals (TPY)</b>	<b>1.41</b>	<b>2.37</b>	<b>0.91</b>	<b>1.96</b>	<b>0.13</b>	<b>0.13</b>

## 5.5 Exempt Emission Sources/Part 70 Insignificant Emissions

Insignificant emission units are defined under APCD Rule 1301 as any regulated air pollutant emitted from the unit, excluding HAPs, that are less than 2 tons per year based on the unit's potential to emit and any HAP regulated under section 112(g) of the Clean Air Act that does not exceed 0.5 ton per year based on the unit's potential to emit. The following emission units are exempt from permit per Rule 202, but are not considered insignificant emission units:

- Solvents/Surface coating operations used maintenance operations

Table 5.5-1 presents the estimated annual emissions from these exempt equipment items, including those exempt items not considered insignificant. This permit covers the Solvents/Surface coating operations used maintenance operations.

**Table 5.5-1 Estimated Permit Exempt Emissions**

Equipment Category	Description	Exemption Claimed	Usage Data		Reference
			Volume	Unit	
Solvent Usage	Maintenance (Wipe Cleaning)	202.U	55	gal/yr	F
	Laboratory Use	202.N			F

Equipment Category	Description	Emission Factor	Unit	NOx	ROC	CO	SOx	PM	PM10
Solvent Usage	Maintenance (Wipe Cleaning)	6.6	lb/gal	--	0.18	--	--	--	--
	Laboratory Use <sup>1</sup>			--	10	--	--	--	--
<b>Totals (TPY):</b>				<b>0.00</b> <sup>✓</sup>	<b>10.18</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

1. The 10 tpy limit represents a stationary source wide limit.

## 5.6 Net Emissions Increase (NEI) Calculation

The NEI Equation used by the APCD is:  $NEI = I + (P1-P2) - D$

Where:

- I = Potential to emit of the modification
- P1 = All prior PTE increases requiring permits on or after 11/15/1990
- P2 = All prior PTE decreases requiring permits on or after 11/15/1990
- D = Pre-1990 baseline actual emission decreases = zero

This facility's net emissions increase since November 15, 1990 (the day the federal Clean Air Act Amendments was adopted in 1990) is attributed to ATC 9734 and ATC 9884. The NEI for the Dominion Lease is shown in Table 5.6-1. The Greka South Cat Canyon stationary source NEI is listed in Attachment 10.4 of this permit. This stationary source does not exceed any APCD Rule 802 offset thresholds .

**Table 5.6-1 Facility Net Emissions Increase (NEI-90)**

Permit	Description	Issued	Units	NOx	ROC	CO	Sox	PM	PM10
ATC 9734	Line Heater	5/19/1997	lbs/hr	0.10	0.01	0.02	0.14	0.01	0.01
			lbs/day	2.40	0.13	0.50	3.27	0.29	0.29
			TPQ	0.11	0.01	0.02	0.15	0.01	0.01
			TPY	0.44	0.02	0.09	0.60	0.05	0.05
ATC 9884	Oil Loading Rack	5/12/1998	lbs/hr	0.15	0.36	0.03	0.20	0.02	0.02
			lbs/day	3.60	8.80	0.80	4.90	0.40	0.40
			TPQ	0.17	0.66	0.04	0.22	0.02	0.02
			TPY	0.66	2.62	0.14	0.89	0.08	0.08
Facility NEI Contribution		P1	lbs/hr	<b>0.25</b>	<b>0.37</b>	<b>0.05</b>	<b>0.34</b>	<b>0.03</b>	<b>0.03</b>
	lbs/day		<b>6.00</b>	<b>8.93</b>	<b>1.30</b>	<b>8.17</b>	<b>0.69</b>	<b>0.69</b>	
	TPQ		<b>0.28</b>	<b>0.66</b>	<b>0.06</b>	<b>0.37</b>	<b>0.03</b>	<b>0.03</b>	
	TPY		<b>1.10</b>	<b>2.64</b>	<b>0.23</b>	<b>1.49</b>	<b>0.13</b>	<b>0.13</b>	

## **6. Air Quality Impact Analyses**

### **6.1 Modeling**

Air quality modeling was not required for this stationary source.

### **6.2 Increments**

An air quality increment analysis was not required for this stationary source

### **6.3 Monitoring**

Air quality monitoring is not required for this stationary source.

### **6.4 Health Risk Assessment**

The Greka - Cat Canyon stationary source is subject to the Air Toxics Hot-Spots Program (AB-2588). A health risk assessment (HRA) for the Greka - Cat Canyon stationary source, as it was configured at that time, was prepared by the APCD in 2000 under the requirements of the Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588). The HRA is based on 1998 toxic emissions inventory data submitted to the APCD by Greka.

Based on the 1998 toxic emissions inventory, a cancer risk of 12 per million at the property boundary was estimated for part of the Cat Canyon stationary source, which included the Bell, Blockman and Palmer-Stendl leases and all associated equipment. This risk is primarily due to emissions of polycyclic aromatic hydrocarbons (PAHs) and acrolein from internal combustion engines and gas-fired boilers. The hazard index (HI) for the facilities was determined to be 0.27 for chronic risk, and 22.93 for acute risk. HI is a ratio of the predicted concentration of the facilities reported emissions to a concentration considered acceptable to public health professionals. The baseline for significant cancer risk is 10 and for non-cancer risk is 1, therefore both the cancer and acute risk are considered significant. The cancer and non-cancer chronic risk projections are over the APCD's AB-2588 significance thresholds of 10 in a million and 1.0 respectively.

A separate HRA was completed for the Dominion and UCB leases since the leases historically were owned and operated by Dominion Oil Company, separate from the current owners/operators of the Greka Cat Canyon source. Based on the 1998 toxic emissions inventory, these two leases were assessed a cancer risk of 2 per million at the property boundary. This risk is primarily due to emissions of acrolein from internal combustion engines and gas-fired boilers. The hazard index (HI) for the facilities was determined to be 0.05 for chronic risk, and 4.3 for acute risk. The baseline for significant non-cancer risk is 1, therefore only the acute risk is considered significant.

An HRA for the four Vintage Petroleum - West Cat Canyon leases was completed in June 1993, including Goodwin A, Lloyd, Mortensen, and Security Fee leases. Based on the 1991 toxic emissions inventory, these four leases were assessed a cancer risk of 4 per million at the property boundary. The hazard index (HI) for the facilities was determined to be 0.5 for

chronic risk, and 0.7 for acute risk. The baseline for significant non-cancer risk is 1, therefore neither the acute or chronic risk is considered significant.

The APCD is currently reviewing an Air Toxics Emission Inventory Report (ATEIR) for reporting year 2003 for the stationary source. Upon APCD approval of the ATEIR, the APCD will conduct a health risk assessment using the Hotspots Analysis and Reporting Program (HARP) software. The HRA, based on reporting year 2003, is expected to be completed in 2009.

## **7. CAP Consistency, Offset Requirements and ERCs**

### **7.1 General**

Santa Barbara County has been classified as non attainment for the state eight-hour ozone standard as well as the state 24-hour and annual PM<sub>10</sub> ambient air quality standards. The County is either in attainment of or unclassified with respect to all other state ambient air quality standards.

Santa Barbara County's air quality has historically violated federal ozone standards. Since 1999 however, local air quality data show that every monitoring location in the County complied with the federal one-hour ambient air quality standard for ozone. The Santa Barbara County Air Pollution District adopted the 2001 Clean Air Plan (2001 CAP) that demonstrated attainment of the federal one-hour ozone standard and continued maintenance of that standard through 2015. Consequently, on August 8, 2003, the United States Environmental Protection Agency (USEPA) designated Santa Barbara County as an attainment area for the federal one-hour ozone standard.

On June 15, 2004, USEPA replaced the federal one-hour ozone standard with an eight-hour ozone standard. This eight-hour ozone standard, originally promulgated by USEPA on July 18, 1997, was set at 0.08 parts per million measured over eight hours and is more protective of public health and more stringent than the federal one-hour standard. In March 2008, USEPA lowered that standard to 0.075 parts per million. While USEPA has yet to formally designate Santa Barbara County with respect to the 0.075 parts per million standard, the state has recommended to USEPA that Santa Barbara County be designated as attainment.

Therefore, emissions from all emission units at the stationary source and its constituent facilities must be consistent with the provisions of the USEPA and State approved Clean Air Plans (CAP) and must not interfere with progress toward attainment or maintenance of federal and state ambient air quality standards. Under APCD regulations, any modifications at this facility (or the South Cat Canyon Stationary Source) that result in an emissions increase of any nonattainment pollutant exceeding 25 lbs/day must apply BACT (NAR). Additional increases may trigger offsets at the source or elsewhere so that there is a net air quality benefit for Santa Barbara County. These offset threshold levels are 55 lbs/day for all non-attainment pollutants except PM<sub>10</sub> for which the level is 80 lbs/day. These thresholds apply to net emission increases since November 15, 1990 as defined in District Rule 801.

## **7.2 Clean Air Plan**

On August 16, 2007, the APCD Board adopted the 2007 Clean Air Plan to chart a course of action that provided for ongoing maintenance of the federal eight-hour ozone standard through the year 2014, as well as the expeditious attainment of the state one-hour ozone standard. These plans were developed for Santa Barbara County as required by both the 1998 California Clean Air Act and the 1990 Federal Clean Air Act Amendments. Santa Barbara County has now attained the state one-hour ozone standard but does not attain the state eight-hour ozone standard.

In 2010 the APCD will update those provisions of the 2007 Clean Air Plan which demonstrate expeditious attainment of the state eight-hour ozone standard. No changes will be made 2007 Clean Air Plan sections which demonstrate continued maintenance of the federal eight-hour ozone standard.

## **7.3 Offset Requirements**

The Greka South Cat Canyon stationary source does not trigger offsets.

## **7.4 Emission Reduction Credits**

Emission reduction credits, granted to Greka, are detailed in revised DOI 006 issued to Greka by the APCD in May 2003. The ERC's are based on IC Engine emission reductions at the Bell Lease Compressor Plant [Re: *APCD PTO 8036, ATC 9975-01, DOI 006-02*] The original ERC certificate #0011-1103 issued to Greka per DOI 006 has since been sold in part to various sources within Santa Barbara County. ERC certificate #0096-1108 includes the remaining portion (CO credits) of the original ERC owned by Greka. This certificate was renewed in November 2008 as ERC Certificate #0096-0189.

## **8 Lead Agency Permit Consistency**

To the best of the APCD's knowledge, no other governmental agency's permit requires air quality mitigation for emissions pursuant to this permit issued to Dominion Lease.

## **9 Permit Conditions**

This section lists the applicable permit conditions for Dominion Lease. Section A lists the standard administrative conditions. Section B lists 'generic' permit conditions, including emission standards, for all equipment in this permit. Section C lists conditions affecting specific equipment. Section D lists non-federally enforceable (i.e., APCD only) permit conditions. Conditions listed in Sections A, B and C are enforceable by the USEPA, the APCD, the State of California and the public. Conditions listed in Section D are enforceable only by the APCD and the State of California. Where any reference contained in Sections 9.A, 9.B or 9.C refers to any other part of this permit, that part of the permit referred to is federally enforceable. In case of a discrepancy between the wording of a condition and the applicable federal or APCD rule(s), the wording of the rule shall control.

For the purposes of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any standard in this permit, nothing in the permit shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test had been performed.

## 9.A Standard Administrative Conditions

The following federally-enforceable administrative permit conditions apply to Dominion Lease:

### Section 9.A Standard Administrative Conditions

Number	Title
A.1	Compliance with Permit Conditions
A.2	Emergency Provisions
A.3	Compliance Plan
A.4	Right of Entry
A.5	Permit Life
A.6	Payment of Fees
A.7	Prompt Reporting of Deviations
A.8	Reporting Requirements/Compliance Certification
A.9	Federally Enforceable Conditions
A.10	Recordkeeping Requirements
A.11	Conditions for Permit Reopening
A.12	Credible Evidence

#### A.1 Compliance with Permit Conditions.

- (a) The permittee shall comply with all permit conditions in Sections 9.A, 9.B and 9.C.
- (b) This permit does not convey property rights or exclusive privilege of any sort.
- (c) Any permit noncompliance with sections 9.A, 9.B, or 9.C constitutes a violation of the Clean Air Act and is grounds for enforcement action; for permit termination, revocation and re-issuance, or modification; or for denial of a permit renewal application..
- (d) It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
- (e) A pending permit action or notification of anticipated noncompliance does not stay any permit conditions.
- (f) Within a reasonable time period, the permittee shall furnish any information requested by the Control Officer, in writing, for the purpose of determining:
  - (i) Compliance with the permit, or
  - (ii) Whether or not cause exists to modify, revoke and reissue, or terminate a permit or for an enforcement action.
- (g) In the event that any condition herein is determined to be in conflict with any other condition contained herein, then, if principles of law do not provide to the contrary, the condition most protective of air quality and public health and safety shall prevail to the extent feasible. *[Re: 40 CFR Part 70.6.(a)(6), APCD Rules 1303.D.1]*

- A.2 **Emergency Provisions.** The permittee shall comply with the requirements of the APCD, Rule 505 (Upset/Breakdown rule) and/or APCD Rule 1303.F, whichever is applicable to the emergency situation. In order to maintain an affirmative defense under Rule 1303.F, the permittee shall provide the APCD, in writing, a “notice of emergency” within 2 working days of the emergency. The “notice of emergency” shall contain the information/documentation listed in Sections (1) through (5) of Rule 1303.F. *[Re: 40 CFR 70.6(g), APCD Rule 1303.F ]*
- A.3 **Compliance Plan.**
- (a) The permittee shall comply with all federally enforceable requirements that become applicable during the permit term in a timely manner.
  - (b) For all applicable equipment, the permittee shall implement and comply with any specific compliance plan required under any federally-enforceable rules or standards. *[Re: APCD Rule 1302.D.2]*
- A.4 **Right of Entry.** The Regional Administrator of USEPA, the Control Officer, or their authorized representatives, upon the presentation of credentials, shall be permitted to enter upon the premises where a Part 70 Source is located or where records must be kept:
- (a) To inspect the stationary source, including monitoring and control equipment, work practices, operations, and emission-related activity;
  - (b) To inspect and duplicate, at reasonable times, records required by this Permit to Operate;
  - (c) To sample substances or monitor emissions from the source or assess other parameters to assure compliance with the permit or applicable requirements, at reasonable times. Monitoring of emissions can include source testing. *[Re: APCD Rule 1303.D.2]*
- A.5 **Permit Life.** The Part 70 permit shall become invalid three years from the date of issuance unless a timely and complete renewal application is submitted to the APCD. Any operation of the source to which this Part 70 permit is issued beyond the expiration date of this Part 70 permit and without a valid Part 70 operating permit (or a complete Part 70 permit renewal application) shall be a violation of the CAAA, § 502(a) and 503(d) and of the APCD rules.
- (a) The permittee shall apply for renewal of the Part 70 permit no later than 6 months before the date of the permit expiration. Upon submittal of a timely and complete renewal application, the Part 70 permit shall remain in effect until the Control Officer issues or denies the renewal application. *[Re: APCD Rule 1304.D.1]*
- A.6 **Payment of Fees.** The permittee shall reimburse the APCD for all its Part 70 permit processing and compliance expenses for the stationary source on a timely basis. Failure to reimburse on a timely basis shall be a violation of this permit and of applicable requirements and can result in forfeiture of the Part 70 permit. Operation without a Part 70 permit subjects the source to potential enforcement action by the APCD and the USEPA pursuant to section 502(a) of the Clean Air Act. *[Re: APCD Rules 1303.D.1 and 1304.D.11, 40 CFR 70.6(a)(7)]*
- A.7 **Prompt Reporting of Deviations.** The permittee shall submit a written report to the APCD documenting each and every deviation from the requirements of this permit or any applicable federal requirements within seven (7) days after discovery of the violation, but not later than six (6) months after the date of occurrence. The report shall clearly document 1) the

probable cause and extent of the deviation, 2) equipment involved, 3) the quantity of excess pollutant emissions, if any, and 4) actions taken to correct the deviation. The requirements of this condition shall not apply to deviations reported to APCD in accordance with Rule 505, Breakdown Conditions, or Rule 1303.F Emergency Provisions. [APCD Rule 1303.D.1, 40 CFR 70.6(a) (3)]

- A.8 **Reporting Requirements/Compliance Certification.** The permittee shall submit compliance certification reports to the USEPA and the Control Officer every six months. These reports shall be submitted on APCD forms and shall identify each applicable requirement/condition of the permit, the compliance status with each requirement/condition, the monitoring methods used to determine compliance, whether the compliance was continuous or intermittent, and include detailed information on the occurrence and correction of any deviations (excluding emergency upsets) from permit requirement. The reporting periods shall be each half of the calendar year, e.g., January through June for the first half of the year. These reports shall be submitted by September 1<sup>st</sup> and March 1<sup>st</sup>, respectively, each year. Supporting monitoring data shall be submitted in accordance with the “Semi-Annual Compliance Verification Report” condition in section 9.C. The permittee shall include a written statement from the responsible official, which certifies the truth, accuracy, and completeness of the reports. [Re: APCD Rules 1303.D.1, 1302.D.3, 1303.2.c]
- A.9 **Federally Enforceable Conditions.** Each federally enforceable condition in this permit shall be enforceable by the USEPA and members of the public. None of the conditions in the APCD-only enforceable section of this permit are federally enforceable or subject to the public/USEPA review. [Re: CAAA, §502(b)(6), 40 CFR 70.6(b)]
- A.10 **Recordkeeping Requirements.** The permittee shall maintain records of required monitoring information that include the following:
- (a) The date, place as defined in the permit, and time of sampling or measurements;
  - (b) The date(s) analyses were performed;
  - (c) The company or entity that performed the analyses;
  - (d) The analytical techniques or methods used;
  - (e) The results of such analyses; and
  - (f) The operating conditions as existing at the time of sampling or measurement;

The records (electronic or hard copy), as well as all supporting information including calibration and maintenance records, shall be maintained for a minimum of five (5) years from date of initial entry by the permittee and shall be made available to the APCD upon request. [Re: APCD Rule 1303.D.1.f, 40 CFR 70.6(a)(3)(ii)(A)]

- A.11 **Conditions for Permit Reopening.** The permit shall be reopened and revised for cause under any of the following circumstances:
- (a) Additional Requirements: If additional applicable requirements (e.g., NSPS or MACT) become applicable to the source which has an unexpired permit term of three (3) or more years, the permit shall be reopened. Such a reopening shall be completed no later than 18 months after promulgation of the applicable requirement. However, no such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or

any of its terms and conditions has been extended. All such re-openings shall be initiated only after a 30 day notice of intent to reopen the permit has been provided to the permittee, except that a shorter notice may be given in case of an emergency.

- (b) Inaccurate Permit Provisions: If the APCD or the USEPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emission standards or other terms or conditions of the permit, the permit shall be reopened. Such re-openings shall be made as soon as practicable.
- (c) Applicable Requirement: If the APCD or the USEPA determines that the permit must be revised or revoked to assure compliance with any applicable requirement including a federally enforceable requirement, the permit shall be reopened. Such re-openings shall be made as soon as practicable.
- (d) Administrative procedures to reopen a permit shall follow the same procedures as apply to initial permit issuance. Re-openings shall affect only those parts of the permit for which cause to reopen exists. If the permit is reopened, and revised, it will be reissued with the expiration date that was listed in the permit before the re-opening. *[Re: 40 CFR 70.7(f), 40 CFR 70.6(a)]*

A.12 **Credible Evidence.** Nothing in this permit shall alter or affect the ability of any person to establish compliance with, or a violation of, any applicable requirement through the use of credible evidence to the extent authorized by law. Nothing in this permit shall be construed to waive any defenses otherwise available to the permittee, including but not limited to, any challenge to the Credible Evidence Rule (see 62 Fed. Reg. 8314, Feb. 24, 1997), in the context of any future proceeding. *[Re: 40 CFR 52.12(c)]*

## 9.B. Generic Conditions

The generic conditions listed below apply to all emission units, regardless of their category or emission rates. These conditions are federally enforceable. Compliance with these requirements is discussed in Section 3. In case of a discrepancy between the wording of a condition and the applicable federal or APCD rule(s), the wording of the rule shall control.

### Section 9.B Generic Permit Conditions

Number	Title
B.1	Circumvention (Rule 301).
B.2	Visible Emissions (Rule 302).
B.3	Nuisance (Rule 303).
B.4	PM Concentration – North Zone (Rule 304).
B.5	Specific Contaminants (Rule 309).
B.6	Sulfur Content of Fuels (Rule 311).
B.7	Organic Solvents (Rule 317).
B.8	Metal Surface Coating Thinner and Reducer (Rule 322).
B.9	Architectural Coatings (Rule 323).
B.10	Disposal and Evaporation of Solvents (Rule 324).
B.11	Surface Coating of Metal Parts and Products (Rule 330).
B.12	Adhesives and Sealants (Rule 353).
B.13	Oil and Natural Gas Production MACT (Subpart HH)
B.14	Proposed MACT Standards (Subpart DDDDD)

- B.1 **Circumvention (Rule 301).** A person shall not build, erect, install, or use any article, machine, equipment or other contrivance, the use of which, without resulting in a reduction in the total release of air contaminants to the atmosphere, reduces or conceals an emission which would otherwise constitute a violation of Division 26 (Air Resources) of the Health and Safety Code of the State of California or of these Rules and Regulations. This Rule shall not apply to cases in which the only violation involved is of Section 41700 of the Health and Safety Code of the State of California, or of APCD Rule 303. [*Re: APCD Rule 301*]
- B.2 **Visible Emissions (Rule 302).** Greka shall not discharge into the atmosphere from any single source of emission any air contaminants for a period or periods aggregating more than three minutes in any one hour which is:
- (a) As dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines, or
  - (b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subsection B.2(a) above.

- B.3 **Nuisance (Rule 303).** No pollutant emissions from any source at Greka shall create nuisance conditions. No operations shall endanger health, safety or comfort, nor shall they damage any property or business. *[Re: APCD Rule 303]*
- B.4 **PM Concentration - North Zone (Rule 304).** Greka shall not discharge into the atmosphere, from any source, particulate matter in excess of 0.3 gr/scf. *[Re: APCD Rule 304]*
- B.5 **Specific Contaminants (Rule 309).** Greka shall not discharge into the atmosphere from any single source sulfur compounds and combustion contaminants in excess of the applicable standards listed in Sections A and E Rule 309. *[Re: APCD Rule 309]*
- B.6 **Sulfur Content of Fuels (Rule 311).** Greka shall not burn fuels with a sulfur content in excess of 796 ppmvd or 15 gr/100 scf (calculated as H<sub>2</sub>S) for gaseous fuel. Compliance with this condition shall be based on monthly (for H<sub>2</sub>S) or annual (for TRS) measurements, as applicable, of the fuel gas using APCD-approved methods. *[Re: APCD Rule 311]*
- B.7 **Organic Solvents (Rule 317).** Greka shall comply with the emission standards listed in Section B of Rule 317. Compliance with this condition shall be based on Greka's compliance with Condition D.12 of this permit. *[Re: APCD Rule 317]*
- B.8 **Metal Surface Coating Thinner and Reducer (Rule 322).** The use of photochemically reactive solvents as thinners or reducers in metal surface coatings is prohibited. Compliance with this condition shall be based on Greka's compliance with Condition D.12 of this permit. *[Re: APCD Rule 322]*
- B.9 **Architectural Coatings (Rule 323).** Greka shall comply with the emission standards listed in Section D of Rule 323 as well as the Administrative requirements listed in Section F of Rule 323. Compliance with this condition shall be based on Greka's compliance with Condition D.12 of this permit. *[Re: APCD Rule 323]*
- B.10 **Disposal and Evaporation of Solvents (Rule 324).** Greka shall not dispose through atmospheric evaporation of more than one and a half gallons of any photochemically reactive solvent per day. Compliance with this condition shall be based on Greka's compliance with Condition D.12 of this permit. *[Re: APCD Rule 324]*
- B.11 **Surface Coating of Metal Parts and Products (Rule 330).** Greka shall not apply any coating or specify the use of any coating on any metal part or product subject to the provisions of this Rule which, as applied, emits or may emit reactive organic compounds into the atmosphere in excess of the limits identified in section D of this rule. *[Re: APCD Rule 330]*
- B.12 **Adhesives and Sealants (Rule 353).** The permittee shall not use adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, or any other primers, unless the permittee complies with the following:

- (a) Such materials used are purchased or supplied by the manufacturer or suppliers in containers of 16 fluid ounces or less; or alternately
- (b) When the permittee uses such materials from containers larger than 16 fluid ounces and the materials are not exempt by Rule 353, Section B.1, the total reactive organic compound emissions from the use of such material shall not exceed 200 pounds per year unless the substances used and the operational methods comply with Sections D, E, F, G, and H of Rule 353. Compliance shall be demonstrated by recordkeeping in accordance with Section B.2 and/or Section O of Rule 353. *[Re: APCD Rule 353]*

**B.13 Oil and Natural Gas Production MACT.** Greka shall comply with the following General Recordkeeping (40 CFR 63.10(b)(2)) MACT requirements:

- (a) Greka shall maintain records of the occurrence and duration of each startup, shutdown, or malfunction of operation;
- (b) Actions taken during periods of startup, shutdown, and malfunction when different from the procedures specified in Greka's startup, shutdown, and malfunction plan (SSMP);
- (c) All information necessary to demonstrate conformance with Greka's SSMP when all actions taken during periods of startup, shutdown, and malfunction are consistent with the procedures specified in such plan;
- (d) All required measurements needed to demonstrate compliance with a relevant standard, including all records with respect to applicability determination, and black oil documentation per 40 CFR 63.760;
- (e) Any information demonstrating whether a source is meeting the requirements for a waiver of record-keeping or reporting requirements under this condition.
- (f) Greka shall maintain records of SSM events indicating whether or not the SSMP was followed;
- (g) Greka shall submit a semi-annual startup, shutdown, and malfunction report as specified in 40 CFR 63.10.d.5. The report shall be due by July 30<sup>th</sup> and January 30<sup>th</sup>. *[Re: 40 CFR 63, Subpart HH]*

## 9.C Requirements and Equipment Specific Conditions

This section includes non generic federally-enforceable conditions, including emissions and operations limits. Monitoring, record keeping and reporting conditions are included in this section for each specific equipment group. This section may also contain other non-generic conditions.

### Section 9.C Equipment Specific Conditions

Number	Title
C.1	External Combustion
C.2	Fugitive Hydrocarbon Emissions Components
C.3	Storage Tanks
C.4	Compliance with Rule 325
C.5	Wastewater Tanks/Cellars/Pits
C.6	Loading/Unloading Racks
C.7	Facility Throughput Limitations
C.8	Recordkeeping
C.9	Compliance Verification Reports
C.10	Rule Compliance Report
C.11	Fuel Gas Sulfur and HHV Monitoring Plan
C.12	Sampling Provisions for Non-Operational Equipment/Activities

- C.1 **External Combustion Equipment - Boiler, Heater Treater, and Line Heater.** The following equipment items are included in this emissions unit category:

**Table C.1-1 External Combustion Equipment List**

APCD Device No.	Name and Brief Description
4097	Boiler, field gas-fired: National Boiler, 0.271 MMBtu/hr heat input
4096	Heater Treater, field gas-fired: Superior, 2.0 MMBtu/hr heat input
4104	Line Heater, field gas-fired: Lakota Eng., 1.0 MMBtu/hr heat input

- (a) Emission Limits: Mass emissions from the equipment listed in Table C.1-1 shall not exceed the emission limits listed for this item as listed in Tables 5.2-3 and 5.2-4 of this permit. Compliance with these limits shall be assessed with the monitoring, record-keeping, and reporting (MRR) conditions listed in this permit. [Re: APCD ATC 9374]
- (b) Operational Limits: The following operational limits apply to the external combustion equipment as specified:

- (i) *Gaseous Fuel Sulfur Limit.* All units listed in Table C.1-1 shall be fired on field-gas. The concentration of sulfur compounds (calculated as H<sub>2</sub>S at standard conditions, 60°F and 14.7 psia) in fuel burned in these units shall not exceed 50 grains per 100 cubic feet (796 ppmvd).
- (c) **Monitoring:** The following monitoring conditions apply to the external combustion equipment listed in Table C.1-1:
  - (i) *Fuel Meters.* Each unit listed in Table C.1-1 shall be equipped with a fuel meter (totalizer) to measure the total cubic feet (scf) delivered to the engine. The fuel meter shall be accurate to within five percent (5%) of the full scale reading. The fuel meter/gauge shall be calibrated in accordance with the fuel meters manufacturer's procedures. The calibrations shall be performed as specified by the fuel meter manufacturer, but no later than the date of the next required emissions source test.
  - (ii) *Fuel Gas Sulfur Data.* Greka shall measure the total sulfur content of the gaseous fuel annually in accordance with ASTM-D1072 and an APCD approved *Fuel Gas Sulfur Reporting Plan*. Greka shall measure the hydrogen sulfide (H<sub>2</sub>S) content of the gaseous fuel monthly via sorbent tube method and an APCD approved *Fuel Gas Sulfur and HHV Monitoring Plan*.
  - (iii) *Fuel Gas High Heating Value.* Greka shall measure the higher heating value of the fuel gas on a quarterly basis using APCD approved methods and per an APCD approved *Fuel Gas Sulfur and HHV Monitoring Plan*.
    - (a) *Fuel Use Monitoring and Process Monitor Calibration and Maintenance Plan.* The APCD-approved *Fuel Use Monitoring and Process Monitor Calibration and Maintenance Plan* (April 2004) for the Dominion Lease shall be implemented for the life of the project. The Plan, and any subsequent APCD approved revisions, is incorporated by reference as an enforceable part of this permit. Prior to operation of any of the permitted combustion units Greka shall submit for APCD approval a revised version of this plan.
- (d) **Recordkeeping:** The following record keeping conditions apply to the external combustion equipment items listed above:
  - (i) *Sulfur Content.* The monthly measured hydrogen sulfide content and the annually measured total sulfur content, both in units of ppmvd, of the gaseous fuel burned on the lease from each permitted combustion unit.
  - (ii) *High Heating Value.* The quarterly high heating value and specific gravity of the fuel gas.

(iii) *Fuel Gas Use*. The total amount of fuel gas combusted each unit listed in Table C.1-1 shall be recorded on a daily, quarterly, and annual basis in units of standard cubic feet and million Btus (x.xxx format).

(e) **Reporting:** On a semi-annual basis, a report detailing the previous six month’s activities shall be provided to the APCD. The report must list all data required by the *Semi-Annual Compliance Verification Reports* condition of this permit. (Re: *APCD Rules 311 and 1303, 40 CFR 70.6*)

C.2 **Fugitive Hydrocarbon Emissions Components.** The following equipment are included in this emissions unit category:

**Table C.2-1 Fugitive Hydrocarbon Emission Components Equipment List**

ID #	Name
	<i>Gas/Light Liquid Service Components</i>
4098	Valves – Bellows Seal
4098	Valves – Accessible/Inaccessible
4098	Valves – Unsafe
4098	Valves - LEV Accessible/Inaccessible
4098	Valves - LEV Unsafe
4098	Flanges/Connections – Accessible/Inaccessible
4098	Flanges/Connections – Unsafe
4098	Compressor Seals – To Atm
4098	Compressor Seals – To VRU
4098	Relief Valves – To Atm
4098	Relief Valves – To VRU
4098	Pump Seals – Tandem
4098	Pump Seals – Single
4098	Exempt
	<i>Oil Service Components</i>
4098	Valves – Bellows Seal
4098	Valves – Accessible/Inaccessible
4098	Valves – Unsafe
4098	Valves - LEV Accessible/Inaccessible
4098	Valves - LEV Unsafe
4098	Flanges/Connections – Accessible/Inaccessible
4098	Flanges/Connections – Unsafe
4098	Compressor Seals – To Atm
4098	Compressor Seals – To VRU
4098	Relief Valves – To Atm
4098	Relief Valves – To VRU
4098	Pump Seals – Tandem
4098	Pump Seals – Single
4098	Exempt
4106	Wellheads — located at all 11 well units, nine equipped with cellars

- (a) Operational Limits: Operation of the equipment listed above shall conform to the requirements listed in APCD Rule 331.D and E. Compliance with these limits shall be assessed through compliance with the monitoring, record-keeping and reporting (MRR) conditions listed in this permit. In addition Greka shall meet the following:
- (i) *VRS Use*. A vapor recovery system (VRS) and the gas collection system (GCS) shall be in operation when the equipment items at the facility connected to these systems are in use. These systems includes piping, valves, and flanges associated with the systems. The systems shall be maintained and operated to minimize the release of emissions from all systems, including pressure relief valves and gauge hatches.
- (1) *Rule 331 I&M Program*. The APCD-approved I&M Plan for Greka South Cat Canyon Stationary Source (April 2004) shall be implemented for the life of the project. The Plan, and any subsequent APCD approved revisions, is incorporated by reference as an enforceable part of this permit. A revised version of this plan shall be submitted for APCD approval thirty (30) days prior to operation of this lease.

*Rule 331 Exemption Request*. If Greka wishes to maintain the Rule 331 B.2.c exemption from the MRR requirements of Rule 331, then Greka shall submit an exemption request to the APCD which shall include a current inventory of all 1/2" or smaller stainless steel tube fittings and a written statement certifying under penalty of perjury that all one-half inch and smaller stainless steel tube fittings have been inspected in accordance with the requirements of Rule 331 Section H.1 and found to be leak-free.

- (b) Monitoring: The equipment listed in this section is subject to all the monitoring requirements listed in APCD Rule 331.F. The test methods in Rule 331.H shall be used, when applicable.
- (c) Recordkeeping: All inspection and repair records shall be retained at the source for a minimum of five years. The equipment listed in this section are subject to all the recordkeeping requirements listed in APCD Rule 331.G. These include:
- (i) *Rule 331 I&M Log* - Greka shall record in a log the following:
- (1) a record of leaking components found (including name, location, type of component, date of leak detection, the ppmv reading, date of repair attempt, method of detection, date of re-inspection and ppmv reading after leak is repaired);
  - (2) a record of the total components inspected and the total number and percentage found leaking by component type;
  - (3) a record of leaks from critical components;
  - (4) a record of leaks from components that incur five repair actions within a continuous 12-month period; and,
  - (5) a record of component repair actions including dates of component re-inspections.

- (d) **Reporting:** The equipment listed in this section are subject to all the reporting requirements listed in APCD Rule 331.G. On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the APCD. The report must list all data required by the *Semi-Annual Compliance Verification Reports* condition of this permit. [Re: APCD Rules 331 and 1303, 40 CFR 70.6]

C.3 **Storage Tanks.** The following equipment items are included in this emissions category:

**Table C.3-1 Storage Tank Equipment List**

APCD Device No.	Name, capacity, dimensions, process rate
4091	Crude storage tank; Plant ID #501, 500 barrels, 15.25' diameter by 16' high, cone roof with a ht. of 0.5' above the shell, equipped with P-R valve
4090	Crude oil reject tank; Plant ID # 9833, 1,000 barrels, 21.5' diameter by 16' high, cone roof with a ht. of 0.7' above the shell, equipped with P-R valve
4092	Diluent storage tank; Plant ID # 502, 463 barrels, 15.25' diameter by 16' high, cone roof with a ht. of 0.5' above the shell, equipped with P-R valve, <i>maximum tank height reduced to 14' by a 2" overflow line with an "U" shape vapor trap to prevent vapor venting.</i>

- (a) **Operational Limits:** Greka shall not operate the crude storage or the crude oil reject tanks identified in Table C.3-1. See Condition C.4 for specific operational restrictions on these tanks. Operation of the equipment listed in Table C.3-1 above shall conform to the requirements listed in APCD Rule 325, Rule 343, and Rule 346. Compliance with these limits shall be assessed through compliance with the monitoring, record-keeping and reporting (MRR) conditions listed in this permit. In addition Greka shall meet the following:
- (i) *Diluent Storage Tank Capacity.* The diluent storage tank capacity shall not exceed 463 barrels or 19,446 gallons at any time, to comply with *Rule 326.D threshold of 20,000 gallons.*
  - (ii) *Oil Processing Limitation.* The volume of oil processed by the facility or the loading rack shall not exceed 500 barrels of oil (dry) per day and 182,500 barrels per year. [Re: APCD ATC 9884].
  - (iii) *Oil Tank ROC Emissions Control.* A vapor recovery system shall be connected to each tank and operating during production or processing (including storage, holding or placement) of petroleum and petroleum related products and shall meet the requirement of Rule 325. The system includes all associated piping, valves, and flanges. The system shall be maintained and operated properly including a leak-free mode of operation and shall achieve a vapor removal efficiency of 90% or greater. [Re: APCD ATC 6677]

- (iv) *Degassing/Purging of Tanks Containing Sulfur Compounds.* The stationary tanks/vessels listed in Table C.3-1 above are used to store organic liquids containing odorous sulfur compounds hence, these vessels shall be purged or degassed in a manner consistent with APCD Rule 343, and the APCD-approved Vessel Degassing Plan (April 2004) Plan.
  - (v) *Notification of Operation.* As of the date of final issuance of this permit the diluent tank listed in Table C.3-1 is not operating. Greka must notify the APCD of their intent to begin operations of diluent tank (#4092 in Table C.3-1) prior to commencement of operations. Upon notification, Greka must schedule an APCD inspection of the tank to insure that a vapor recovery system is intact and operational prior to the introduction of oil/fluids into the tank or show that it is otherwise exempt.
- (b) Monitoring: Monitoring requirements for the equipment listed above are, as follows:
- (i) The volume of dry oil (bbl) processed through the oil storage tanks each month and the number of days during that month that oil was processed through each oil storage tank identified in Table C.3-1.
  - (ii) For each tank subject to APCD Rule 325 based on the required analysis in Section G.2, Greka shall visually inspect the tank roof, internal floating cover, and its closures/seals at least once every five (5) years, and shall perform a complete inspection of any roof or cover whenever the tank is emptied for non-operational reasons, whichever is more frequent.
  - (iii) For each tank subject to APCD Rule 343 based on the required analysis in condition 9.C.3.a.iv, Greka shall maintain a record of all degassing operations per APCD Rule 343 Section F, which includes the following:
    - (1) The date of degassing
    - (2) The tanks degassed
    - (3) The emission reduction method used
    - (4) Documentation generated from monitoring the degassing process.
- (c) Recordkeeping: The records required below shall be maintained by the permittee for a minimum period of five (5) calendar years and shall be made available to the APCD personnel upon request.
- (i) Greka shall record in a log the monthly and annual volumes of dry oil production and the actual number of days in production per month. The daily limit is based on actual days of operation per month.
  - (ii) The following records required to be maintained per APCD Rules 325, Section F (Recordkeeping):
    - (1) The type of liquid in each tank

- (2) The maximum vapor pressure of the liquid in the tank
  - (3) The results of the inspections required by Section H of Rule 325
  - (4) The API gravity of the oil in the tank
- (iii) The records required per APCD Rule 343, as identified in Condition 9.C.3.b.iv shall be maintained in a readily accessible location for at least five (5) years.
- (d) **Reporting:** On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the APCD. The report shall list all the data required by the Semi-Annual Monitoring/Compliance Verification Reports condition of this permit. [Re: APCD Rules 325, 343 and 1303, APCD ATC's 6677, 40 CFR 70.6.(a)(3)]

**C.4 Compliance with Rule 325.** The crude oil tank (#4091) and the reject tank (#4090), currently located on the Dominion lease are subject to the emission control requirements of Rule 325. Except as provided for in Section (b) below, Greka shall cease all operations of these tanks and maintain the tanks in an *out of service state* in lieu of satisfying the requirements of Rule 325 Section I. An out of service state is defined as being completely drained of any fluids and disconnected from all liquid flow lines at all times. If, at any time, a tank does not meet this *out of service* definition, that tank shall be deemed in direct violation of the permit. In addition the following requirements apply:

- (a) **Inspections:** Greka shall inspect each tank once per quarter to confirm that the tank is empty and that all lines remain disconnected. Each inspection shall be recorded in a log which shall include the date of inspection, the tank identification number, the name of the person completing the inspection, and the signature of the responsible official confirming the inspection has been completed and that the tanks were not operated.
- (b) **Operation:** Prior to introducing fluids to any of the tanks identified in this condition, Greka shall submit an application for an Authority to Construct (ATC) permit and obtain an ATC permit for installation of ROC controls in accordance with Rule 325.

**C.5 Wastewater Tanks/Cellars/Pits.** The following equipment are included in this emissions category:

**Table C.5-1 Well Cellars, and Pits Equipment List**

APCD Device No.	Name
4107	Well cellars; 9 in number, total area = 358 ft <sup>2</sup>
108966	Emergency diluent overflow containment pit; total area = 9 ft <sup>2</sup>

- (a) **Operational Limits:** All process operations from the cellar units listed in this section shall meet the requirements of APCD Rule 344, Section D. Compliance with these operational limits shall be assessed through compliance with the MRR conditions listed in this permit.

- (i) The diluent overflow pit may only be used during an emergency condition. If an emergency condition occurs, any diluent remaining in the pit or surrounding area shall be removed within 24 hours of the emergency event. The overflow pit shall remain empty of hydrocarbon fluids at all other times to ensure compliance by the diluent tank with Rule 326.
- (ii) The liquid depth and the oil/petroleum depth of the well cellars shall not exceed the limits in Rule 344.D.3.c.
- (b) Monitoring: The cellars listed in this section are subject to all applicable monitoring requirements of APCD Rule 344.F. Greka shall also inspect the well cellars on a *weekly* basis to ensure that the liquid depth and the oil/petroleum depth does not exceed the following:
  - (i) liquid depth exceeding 50 percent of the depth of the well cellar.
  - (ii) oil/petroleum depth exceeding 2 inches.
  - (iii) no observable diluent liquid in the pit, unless there is an emergency
  - (iv) unless the owner/operator has discovered the condition and the cellar is pumped within 7 days of discovery (if the cellar is inaccessible due to muddy conditions, it shall be pumped as soon as it is accessible).
- (c) Recordkeeping: The cellar units are subject to all applicable record-keeping requirements listed in APCD Rule 344.G. Specifically, Greka shall record, for each detection, the following information relating to detection of conditions which require pumping of a well cellar pursuant to Rule 344.D.3.c:
  - (i) the date of the detection.
  - (ii) the name of the person and company performing the test or inspection, and
  - (iii) the date and time the well cellar is pumped.
  - (iv) Greka shall also keep a record of all emergency conditions requiring the pit use and its cleaning.
- (d) Reporting: On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the APCD. The report shall list all the data required by the Semi-Annual Monitoring/Compliance Verification Reports condition listed below. [Ref: APCD Rules 344 and 1303, 40 CFR 70.6]

C.6 **Unloading Station/Loading Rack.** The following equipment are included in this emissions category:

**Table C.6-1 Loading Rack Equipment List**

APCD Device No.	Description, petroleum liquid loaded, loading Method, process rate
8387	Diluent unloading station; 463 barrels/day, 10,950 bbl/yr, uncontrolled
8386	Crude oil loading rack; 500 barrels/day, 182,500 bbl/yr, uncontrolled

- (a) Emission Limits: Mass emissions from the loading and unloading racks shall not exceed the emission limit listed for these items in **Error! Reference source not found.** and **Error! Reference source not found.** of this permit. Compliance with these limits shall be assessed through compliance with the monitoring, record-keeping and reporting (MRR) conditions listed in this permit. [Re: APCD ATC 9884]
- (b) Operational Limits: Process operations at the diluent unloading station shall meet all requirements of APCD Rule 346, Sections D, E, F and G, *if the vapor pressure of the diluent used is greater than 1.5 psia at any time.* Operations at the crude oil loading rack shall meet all applicable requirements of Rule 346. Compliance with these limits shall be assessed through compliance with the MRR conditions in this permit.
  - (i) Crude oil loading shall vent displaced vapors to the VRS and shall be performed using a submerged fill pipe or bottom loaded into trucks.
  - (ii) Crude oil loading shall be performed using a submerged fill pipe or bottom loaded into trucks.
  - (iii) *Crude Oil Loading Rack Throughput Limitations.* Greka shall restrict the loading rack operations to 500 bbl/day and 182,500 bbl/year of dry oil loading for the stationary rack (APCD # 8386).
  - (iv) *Diluent Unloading Rack Throughput Limitations.* Greka shall restrict the diluent consumption to 30 bbl/day and 10,950 bbl/year.
  - (v) Greka shall record in a log the monthly and annual volumes of dry oil production and diluent consumption as well as the actual number of days in oil production and diluent consumption per month. The daily limit is based on actual days of operation during the month. [Re: ATC 9884]
  - (vi) *Notification of Operation.* As of the date of final issuance of this permit the equipment items listed in Table C.6-1 are not operating. Greka must notify the APCD of their intent to begin operations of this equipment prior to commencement of operations. Upon notification, Greka must schedule an APCD inspection of this equipment to ensure that it is connected to a functioning

vapor recovery system prior to the introduction of oil/fluids into the equipment or show that either equipment item is otherwise exempt.

- (c) **Monitoring:** The equipment listed in this section is subject to all the monitoring requirements of APCD Rule 346.F, if applicable, based on a valid TVP measurement.
  - (i) Greka shall *annually* measure the TVP for the diluent used, per the methodology listed in the APCD Rules 346/326.
- (d) **Recordkeeping:** The equipment listed in this section is subject to all the record-keeping requirements listed in APCD Rule 346.G, if applicable based on valid TVP measurement.
  - (i) Greka shall record the volumes and dates of shipments from the loading racks and the total number of loads trucked daily.
  - (ii) Greka shall record the name and HC type (generic) of diluent used and its TVP as measured by Greka.
- (e) **Reporting:** On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the APCD. The report shall list all the data required by the Semi-Annual Monitoring/Compliance Verification Reports condition of this permit.  
*[Ref: APCD Rules 346 and 1303, 40 CFR 70.6 and ATC 10174]*

C.7 **Facility Throughput Limitations.** Dominion Lease oil production shall be limited to 500 barrels of oil (dry) per day and 182,500 barrels of oil (dry) per year. Greka shall restrict the diluent consumption to 30 bbl/day and 10,950 bbl/year.

*[Re: ATC 9884]*

C.8 **Recordkeeping.** All records and logs required by this permit and any applicable District, state or federal rule or regulation shall be maintained for a minimum of five calendar years from the date of information collection or log entry at the lease. These records or logs shall be readily accessible and be made available to APCD upon request. *[Re: APCD Rule 1303, 40 CFR 70.6]*

C.9 **Semi-Annual Monitoring/Compliance Verification Reports.** Twice a year, Greka shall submit a compliance verification report to the APCD. Each report shall document compliance with all permit, rule or other statutory requirements during the prior two calendar quarters. The first report shall cover calendar quarters 1 and 2 (January through June) and the second report shall cover calendar quarters 3 and 4 (July through December). The reports shall be submitted by March 1<sup>st</sup> and September 1<sup>st</sup> each year. Each report shall contain information necessary to verify compliance with the emission limits and other requirements of this permit and shall document compliance separately for each calendar quarter. These reports shall be in a format approved by the APCD. Compliance with all limitations shall be documented in the submittals. All logs and other basic source data not

included in the report shall be made available to the APCD upon request. The second report shall also include an annual report for the prior four quarters. Pursuant to Rule 212, a completed *APCD Annual Emissions Inventory* questionnaire should be included in the annual report or submitted electronically via the APCD website. Greka may use the Compliance Verification Report in lieu of the Emissions Inventory questionnaire if the format of the CVR is acceptable to the APCD's Emissions Inventory Group and if Greka submits a statement signed by a responsible official stating that the information and calculations emissions presented in the CVR are accurate and complete to best knowledge of the individual certifying the statement. The report shall include the following information:

- (a) *External Combustion Units.* (*Boiler, Heater Treater, and Line Treater*)
  - (i) The monthly measured sulfur concentration of the fuel gas calculated as H<sub>2</sub>S
  - (ii) The annually measured total sulfur content of fuel gas consumed at each combustion unit (*each annual data will suffice for both reports*).
  - (iii) The quarterly measured high heating value (Btu/scf).
- (b) *Fugitive Hydrocarbons.* Rule 331 fugitive hydrocarbon I&M program data (quarterly data):
  - (i) Inspection summary.
  - (ii) Record of leaking components.
  - (iii) Record of leaks from critical components.
  - (iv) Record of leaks from components that incur five repair actions within a continuous 12-month period.
  - (v) Record of component repair actions including dates of component re-inspections.
  - (vi) An updated FHC I&M inventory due to change in component list or diagrams.
- (c) *Storage Tanks*
  - (i) The volume of dry oil (bbl) processed through each tank each month and the number of days during that month that oil was processed through each tank.
  - (ii) The volume of diluent (bbl) consumed each month and the number of days during each month diluent was consumed.
  - (iii) For all degassing events subject to APCD Rule 343, the volume purged, characteristics of the vapor purged and the control device/method used;
  - (iv) For each tank listed in Table C.3-1, a summary annual report consisting of the following:
    - (1) The type of liquid in each tank.
    - (2) The maximum vapor pressure of the tank content under operating conditions.
    - (3) The date each tank was degassed.

- (d) *Pits/Separators/Cellars*
  - (i) For the cellars, a summary of detection data obtained per Rule 344.D.3.c. & 344.G.
- (e) *Unloading/Loading Racks*
  - (i) On a monthly basis, the total volume (in barrels) of dry oil trucked along with the number of days trucking actually occurred.
  - (ii) The total annual volume (in barrels) of dry oil trucked.
  - (iii) All information required under Rule 346.G.
- (f) *General Reporting Requirements*
  - (i) A summary of each and every occurrence of non-compliance with the provisions of this permit, APCD rules, and any other applicable air quality requirement.
  - (ii) On an annual basis, the ROC and/or NO<sub>x</sub> emissions from all permit exempt activities.

C.10 **Rule Compliance Report.** Greka shall submit a semi-annual report certifying compliance with APCD Rule 325 as described in section (a) of condition C.4. The report shall include copies of the quarterly inspection logs with the signature of the responsible official certifying compliance with each rule as well as all sample data required in section (a) of condition C.4. The semi-annual report shall be submitted to the APCD by March 1<sup>st</sup>, and September 1<sup>st</sup> with the semi-annual compliance verification report each year.

- (a) The first inspection report shall include a photo log of each unit identified in conditions C.4. The log shall provide photographs of all sides of the units, including potential points of connection. The photographs shall be date stamped. The photo log shall be updated once annually thereafter, and submitted with the March 1<sup>st</sup> Rule Compliance Report.

C.11 **Fuel Gas Sulfur and HHV Monitoring Plan.** Greka shall abide by an *APCD-approved Fuel Gas Sulfur and HHV Monitoring Plan*. Greka shall submit a revised *Fuel Gas Sulfur Reporting Plan* for APCD approval prior to commencing operations at this lease. The plan shall include the following elements:

- (a) *Unit Description.* A brief description of the combustion units permitted to operate using fuel gas in the Greka South Cat Canyon stationary source, including the APCD ID#, and the purpose for operation in the source.
- (b) *Fuel Monitoring Devices.* A description of the fuel gas sulfur and HHV monitoring devices in place on each permitted unit. A diagram identifying the fuel gas lines by lease with the sampling location for each permitted combustion unit.

- (c) *Fuel Sampling Procedures.* A description of the procedures in place for collecting fuel gas samples for total reduced sulfur (TRS) and H<sub>2</sub>S concentration, and the High Heating Value (HHV) of the fuel.
- (d) *Recordkeeping.* Monthly and annual records shall be kept onsite for a minimum of five (5) years and will be made available to the APCD upon request.
  - (i) The monthly records of fuel gas sulfur content and HHV will be submitted in the semi-annual and annual compliance verification report (CVR). The CVR will include the results of total reduced sulfur concentration as measured and recorded annually, the results of HHV as measured as recorded quarterly, and the results of H<sub>2</sub>S concentration as measured and recorded monthly for each permitted combustion unit.

Greka may submit a revision to the *Fuel Gas Sulfur and HHV Monitoring Plan* at any time to address sampling locations. Revisions to this plan must be approved by the APCD prior to implementing any modifications to sampling frequency, location, or sampling methodology.

**C.12 Sampling Provisions for Non-Operational Equipment/Activities.** Greka shall complete all sampling/analysis required in section 9.C or 9.D conditions at the designated frequencies (e.g., daily, weekly, monthly, quarterly, and/or annual) except under circumstances when equipment subject to sampling is non-operational, as described below:

- (a) *Equipment currently in extended shut-down mode.* For any permitted equipment that has been shut-down for twelve or more consecutive months and whose operation is not prevented by conditions contained within this permit, Greka shall not be required to complete the required sampling and analysis while the equipment remains shut-down.

Within 30 days of issuance of this permit, Greka shall submit a revised written list of all equipment/activities (by facility permit) subject to sampling that have been shut-down for at least 12 consecutive months, along with monthly records documenting the non-operational status of the equipment

Prior to startup of a permitted equipment unit that has been shutdown for twelve (12) or more consecutive months, Greka shall submit a written notification of the projected startup date. Upon start-up, Greka shall resume the required sampling and analysis at the frequency designated in this permit.

- (b) *Planned equipment shut-downs.* For planned shut-downs of permitted equipment, Greka shall complete the sampling/analyses required before the unit is shutdown. For planned shut-downs of equipment/activities of duration less than the sampling frequency defined in this permit for that unit, Greka must complete the required sampling. If the actual shut-down duration is for a period greater than the sampling frequency defined in this permit for that unit, then Greka does not have to complete the sampling for the unit while shut-down. Upon equipment start-up, Greka shall

resume the required sampling and analysis at the frequency designated in this permit. Prior to any planned shut-downs of units subject to sampling, Greka shall submit a written shutdown notification to the APCD which identifies the unit(s) to be shutdown and the scheduled period (dates) of the shutdown.

## 9.D APCD-Only Conditions

The following section lists permit conditions that are not federally enforceable (i.e., not enforceable by the USEPA or the public). However, these conditions are enforceable by the APCD and the State of California. These conditions have been determined as being necessary to ensure that operation of the facility complies with all applicable local and state air quality rules, regulations and laws. Failure to comply with any of these conditions shall be a violation of APCD Rule 206, this permit, as well as any applicable section of the California Health & Safety Code.

### Section 9.D APCD-Only Conditions

Number	Title
D.1	Consistency with Analysis
D.2	Equipment Maintenance
D.3	Compliance
D.4	Severability
D.5	Conflict Between Permits
D.6	Access to Records and Facilities
D.7	Odorous Organic Sulfides (Rule 310)
D.8	Mass Emission Limitations
D.9	Process Monitoring Systems - Operation and Maintenance
D.10	External Combustion Equipment – Boilers/Glycol Regenerator
D.11	Storage Tanks
D.12	Solvent Usage
D.13	Permitted Equipment
D.14	Annual Compliance Reporting

- D.1 **Consistency with Analysis.** Operation under this permit shall be conducted consistent with all data, specifications and assumptions included with the application and supplements thereof (as documented in the APCD's project file) and the APCD's analyses under which this permit is issued as documented in the Permit Analyses prepared for and issued with the permit.
- D.2 **Equipment Maintenance.** All equipment permitted herein shall be properly maintained and kept in good working condition in accordance with the equipment manufacturer specifications at all times.
- D.3 **Compliance.** Nothing contained within this permit shall be construed as allowing the violation of any local, state, or federal rules, regulations, air quality standards or increments.

- D.4 **Severability.** In the event that any condition herein is determined to be invalid, all other conditions shall remain in force. *[Re: APCD Rules 103 and 1303.D.1]*
- D.5 **Conflict Between Permits.** The requirements or limits that are more protective of air quality shall apply if any conflict arises between the requirements and limits of this permit and any other permitting actions associated with the equipment permitted herein.
- D.6 **Access to Records and Facilities.** As to any condition that requires for its effective enforcement the inspection of records or facilities by the APCD or its agents, the permittee shall make such records available or provide access to such facilities upon notice from the APCD. Access shall mean access consistent with California Health and Safety Code Section 41510 and Clean Air Act Section 114A.
- D.7 **Odorous Organic Sulfides (Rule 310).** The permittee shall not discharge into the atmosphere H<sub>2</sub>S and organic sulfides that result in a ground level impact beyond the Greka property boundary in excess of either 0.06 ppmv averaged over 3 minutes and 0.03 ppmv averaged over one hour. *[Re: APCD Rule 310]*.
- D.8 **Mass Emission Limitations.** Mass emissions for each equipment item associated with this lease shall not exceed the values listed in Tables 5.2-3 and 5.2-4 of this permit. Emissions for the entire facility shall not exceed the emissions limits, as listed in Table 5.3-1.
- D.9 **Process Stream Sampling and Analysis.** Greka shall sample and analyze the process streams listed in Section 4.9.2 of this permit according to the methods and frequency detailed in that Section. All process stream samples shall be taken according to APCD approved ASTM methods and must follow traceable chain of custody procedures. Compliance with this condition shall be assessed through compliance with the monitoring, record-keeping and reporting (MRR) conditions listed in this permit.
- D.10 **External Combustion Equipment - Boiler, Heater Treater, and Line Heater.** The following equipment are included in this emissions category:

**Table D.10-1 External Combustion Equipment**

APCD Device No.	Name and Brief Description
4097	Boiler, field gas-fired: National Boiler, 0.271 MMBtu/hr heat input
4096	Heater Treater, field gas-fired: Superior, 2.0 MMBtu/hr heat input
4104	Line Heater, field gas-fired: Lakota Eng., 1.0 MMBtu/hr heat input

- (a) **Operational Limits:** The equipment listed in the Table D.10-1 must be properly maintained in accordance with the equipment manufacturer's/operator's maintenance manual to minimize combustion emissions. The following additional operational limits apply:
  - (i) **Heat Input Limits.** The daily and annual heat input to the boiler, heater treater, and line heater shall not exceed the values listed in Table D.10-2 below. These limits are based on the design rating of the equipment. Compliance with this

condition shall be based on fuel usage, high heating value of the fuel and hours of operation.

**Table D.10-2 External Combustion Unit – Heat Input Limits**

Equipment	Fuel	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/year)
Boiler (#4097)	Field Gas	6.50	2,374
HT (#4096)	Field Gas	48.0	17,520
Line Heater (#4104)	Field Gas	24.0	8,760

- (b) Recordkeeping: Greka shall record in a log the following information on a monthly basis:
- (i) The volume (scf) of field gas consumed monthly by each combustion unit.
  - (ii) The number of days gaseous fuel was burned each month at each combustion unit.
  - (iii) Maintenance for each unit identified in Table D.10-1 and their emission control systems.
  - (iv) Calibration logs for the fuel flow meters for each unit identified in Table D.10-1.
- (c) Reporting: On an annual basis, a report detailing the previous twelve month’s activities shall be provided to the APCD. The report shall list all the data required by the Annual Compliance Report condition D.13.

**D.11 External Combustion Units - Permits Required.**

- 1) An ATC/PTO permit shall be obtained prior to installation of any grouping of Rule 360 applicable boilers or hot water heaters whose combined system design heat input rating exceeds 2.000 MMBtu/hr.
- 2) An ATC permit shall be obtained prior to installation, replacement, or modification of any existing Rule 361 applicable boiler or water heater rated over 2.000 MMBtu/hr.
- 3) An ATC shall be obtained for any size boiler or water heater if the unit is not fired on natural gas or propane.

**D.12 Solvent Usage.** Use of solvents for wipe cleaning maintenance and laboratory use shall conform to the requirements of APCD Rules 202 and 324. On an annual basis, Greka shall monitor the following for each solvent used:

- (a) Emission Limits: Mass emissions for solvent usage associated with Dominion Lease shall not exceed the values listed in Table 5.5-1. of this permit.
- (b) Operational Limits: Use of solvents for cleaning, degreasing, thinning and reducing shall conform to the requirements of APCD Rules 317 and 324. Compliance with these rules shall be assessed through compliance with the monitoring, recordkeeping and reporting conditions in this permit and facility inspections. In addition, Greka shall comply with the following:
  - (i) *Containers*. Vessels or containers used for storing materials containing organic solvents shall be kept closed unless adding to or removing material from the vessel or container.

- (ii) *Materials*. All materials that have been soaked with cleanup solvents shall be stored, when not in use, in closed containers that are equipped with tight seals.
- (iii) *Solvent Leaks*. Solvent leaks shall be minimized to the maximum extent feasible or the solvent shall be removed to a sealed container and the equipment taken out of service until repaired. A solvent leak is defined as either the flow of three liquid drops per minute or a discernable continuous flow of solvent.

*Solvent Reclamation Plan*. Greka may submit a *Solvent Reclamation Plan* that describes the proper disposal of any reclaimed solvent. All solvent disposed of pursuant to an APCD approved Plan will not be assumed to have evaporated as emissions into the air and, therefore, will not be counted as emissions from the source. The Plan shall detail all procedures used for collecting, storing and transporting the reclaimed solvent. Further, the ultimate fate of these reclaimed solvents must be stated in the Plan.

- (c) Monitoring: The monitoring shall meet the requirements of Rule 202.U.3 and be adequate to demonstrate compliance with Rule 202.N threshold.
- (d) Recordkeeping: All monitoring data shall be recorded in a log. Any product sheets (MSDS or equivalent) detailing the constituents of all solvents shall be maintained in a readily accessible location on the facility. Greka shall record the amount used in gallons per month, the percentage of ROC by weight (as applied), the solvent density, and whether the solvent is photo-chemically reactive. Greka shall also record the amount of surface coating used in gallons per month and the percentage of ROC by weight of the surface coating.
- (e) Reporting: On an annual basis, a report detailing the previous twelve month's activities shall be provided to the APCD. The report shall list all the data required by the Annual Compliance Report condition D.14.

D.13 **Permitted Equipment**. Only those equipment items listed in Attachment 10.5 are covered by the requirements of this permit and District Rule 201.E.2.  
[Re: APCD Rule 201]

D.14 **Annual Compliance Reporting**. In addition to its federally required semi-annual reporting, Greka shall also submit an annual report to the APCD, by March 1<sup>st</sup> of the following year containing the information listed below. These reports shall be in a format approved by the APCD. All logs and other basic source data not included in the report shall be available to the APCD upon request. Except where noted, the annual compliance report shall include monthly summaries of the following information:

- (a) *External Combustion Equipment - Boiler, Heater Treater, Line Heater*
  - (i) The volume of field gas consumed monthly by each combustion unit measured in standard cubic feet (scf).
  - (ii) The number of days gaseous fuel was burned each month by each combustion unit.

(b) *Storage Tanks*

- (i) The API Gravity of the crude oil and the true vapor pressure (TVP) of the crude oil at the maximum expected temperature (180°F) as defined in 9.D.11.b.i, as measured per Rule 325.G.2 and recorded. Each tank temperature shall also be recorded while measuring the vapor pressure per Rule 325.G.2.

(c) *Solvent Usage*

- (i) The volume (in gallons) of each non-photo-chemically reactive solvent used each month.
- (ii) The density of each such solvent and the percentage of ROC by weight in each solvent.
- (iii) The total weight (in pounds) of all "photo-chemically reactive" (per APCD Rule 102.FF) solvents used each month, and the number of days each month these were used.
- (iv) The volume (in gallons) of surface coating used each month.
- (v) The percentage of ROC by weight of the surface coating used.

(d) *Adhesives and Sealants*

- (i) All records of adhesives and sealants used in the facility including their ROC content, unless all such adhesives or sealants were contained in containers less than 16 ounces in size or all such materials were exempt from Rule 353 requirements pursuant to Rule 353.B.1.

(e) *Mass Emissions*

- (i) The annual emissions (TPY) from each permitted emissions unit for each criteria pollutant.
- (ii) The annual emissions (TPY) from each exempt emissions unit for each criteria pollutant.
- (iii) The annual emissions (TPY) totaled for each criteria pollutant.

- (f) *General Reporting Requirements*
- (i) A brief summary of breakdowns and variances reported/obtained per Regulation V along with the excess emissions that accompanied each occurrence.
  - (ii) A summary of each use of CARB Certified equipment used at the facility. List the type of equipment used, CARB Registration Number, first date of use and duration of use and an estimate of the emissions generated.
  - (iii) A copy of the Rule 202 De Minimis Log for the stationary source.

AIR POLLUTION CONTROL OFFICER

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February 2010

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Date

NOTES:

- (a) This permit supersedes all previous “APCD-only” Permits-to-Operate issued for Dominion Lease;
- (b) Permit Reevaluation Due Date: February 2013

## **7 10.0Attachments**

- 10.1 Emission Calculation Documentation**
- 10.2 Emission Calculation Spreadsheets**
- 10.3 Fee Calculations**
- 10.4 IDS Database Emission Tables**
- 10.5 Equipment List**
- 10.6 Well List**

## 10.1 Emission Calculation Documentation

### Dominion Lease

This attachment contains all relevant emission calculation documentation used for the emission tables in Section 5. Refer to Section 4 for the general equations. The letters A-F refer to Table 5.2-1 and 5.2-2.

### Reference A - External Combustion Equipment (Boiler, heater treater etc.)

- The maximum operating schedule is in units of hours
- The gaseous fuel default characteristics are:
  - HHV = 1,050 Btu/scf
  - Fuel S = 796 ppmvd for all equipment
- NO<sub>x</sub>, ROC, CO and PM<sub>10</sub> emission factors are based on those listed in USEPA's AP-42 (Reference: Air Chief, Version 6.0, October, 1998, Tables 1.4-1 and 1.4-2). The AP-42 data listed in lb/MMscf units are converted to lb/MMBtu units using a fuel HHV of 1050 Btu/scf. The emission factors are: NO<sub>x</sub> = 0.0980 lb./MMBtu, ROC = 0.0054 lb/MMBtu, CO = 0.0824 lb/MMBtu, and PM<sub>10</sub> = 0.0075 lb/MMBtu.
- SO<sub>2</sub> emission limit (factor) = 0.1362 lb./MMBtu is based on re-conversion of AP-42 data, based on fuel S level of 796 ppmvd (50 grains/100 scf) at Dominion Lease.

### Reference B - Fugitive Components (Valves, fittings etc., at the wellheads)

- The maximum operating schedule is in units of hours.
- All safe to monitor components are credited an 80 percent control efficiency
- For existing onshore sources without a detailed component count inventory, the statistical models developed by the CARB/KVB was used. The CARB/KVB Method uses statistical models based on the facility's gas/oil ratio and the number of active wells to determine the emission factor. (see Attachment 10.2)
- APCD Policy and Procedure 6100.060.1996 (Calculation of Fugitive Hydrocarbon Emissions at Oil and Gas Facilities by the CARB/KVB Method, July 1996) is used as the basis for implementing the CARB/KVB methodology. (see Attachment 10.2)
- Emission factors from the CARB/KVB Method were also used determining fugitive emissions from wellheads casing (i.e., piping and equipment associated with the underground casing) and from pumps and compressors (see Attachment 10.2)

- In order to determine the applicable fugitive hydrocarbon (FHC) emission factors for equipment in a facility, the following definitions are provided specific to this methodology.
- Gas to Oil Ratio (GOR): The volume ratio of gas to liquid crude oil produced by the facility wells in units of standard cubic feet per day (scfd) of gas to barrel per day (bbl/day) of crude oil.
- Wells Heads: Well piping and pumping equipment located above the underground oil and gas well casing.
- Active Oil Wells: All oil and gas producing wells not abandoned (e.g. not plugged with concrete to block the well). Active oil wells do not include wastewater re-injection wells.

To calculate FHC emissions from an oil and gas facility, the CARB/KVB method requires the following data listed in Table. From this data, Facility Model Numbers can be determined from Table 10.1-2.

**Table 10.1-1 Data Required**

Parameter	Units
1. The total gas production from the facility	SCF/day
2. The total dry crude oil production and API gravity of the crude produced by the facility	bbl/day and °API
3. The total gas production divided by the total dry oil produced. (Gas oil Ratio (GOR))	SCF/bbl
4 The number of active oil and gas production wells that are serviced by the facility. Do not count waste water re-injection, or abandoned (plugged) wells	Number of wells
5. The types, quantities and characteristics of the following equipment at the facility:	
5.1 Pumps (facility has them or not)	Yes/no
5.2 Compressors (facility has them or not)	Yes/no

**Table 10.1-1 Facility Model Numbers**

Model #1	Number of wells on the lease is less than 10 and the GOR is less than 500.
Model #2:	Number of wells on the lease is between 10 and 50 and the GOR is less than 500.
Model #3	Number of wells on the lease is greater than 50 and the GOR is less than 500.
Model #4:	Number of wells on the lease is less than 10 and the GOR is greater than or equal to 500.
Model #5:	Number of wells on the lease is between 10 and 50 and the GOR is greater than or equal to 500.
Model #6:	Number of wells on the lease is greater than 50 and the GOR is greater than or equal to 500.

Emission Factors: “Uncontrolled” ROC emission factors are provided in Table 10.1-3 and Table 10.1-4 for valves and fittings based on the lease model number. Table 10.1-5 provides emission factors for wellheads, pumps and compressors. All emission factors listed in Tables 10.1-3 through 10.1-5 are for ROC emission factors. The methane and ethane constituents have been removed. Control efficiencies are provided in Table 10.1-6.

**Table 10.1-2 Valve Emission Factors**

Lease Model	ROC Emission Factor by Service Type (Lb/day-well)*10 <sup>-4</sup>			
	Gas	Liquid	Mixture	Condensate
Model #1	14,171.70	0.982	748.355	0
Model #2	6,807.46	0.971	190.993	0
Model #3	62.177	0.260	154.327	0
Model #4	44,784.90	1.215	303.513	0
Model #5	8,293.50	0.509	334.359	0
Model #6	16,839.20	0.084	239.978	0

**Table 10.1-3 Fitting Emission Factors**

Lease Model	ROC Emission Factor by Service Type (Lb/day-well)*10 <sup>-4</sup>			
	Gas	Liquid	Mixture	Condensate
Model #1	8,483.620	323.495	1,139.750	0.000
Model #2	5,788.960	0.000	302.830	0.000
Model #3	166.743	9.719	496.834	0.099
Model #4	20,399.100	0.001	920.142	0.000
Model #5	17,547.300	29.052	1,847.850	0.000
Model #6	24,890.200	0.000	115.139	0.243

**Table 10.1-4 Emission Factors for Wellheads, Pumps, and Compressors**

Active (Not abandoned) Oil Wells	0.0097 lb-ROC/well-day
If Facility Uses Pumps	0.0028 lb-ROC/well-day
If Facility Uses Compressors	0.0680 lb-ROC/well-day

**Table 10.1-6 Standard Control Efficiency**

Equipment Category	Type of Control	ROC Control Efficiency (% by wt.)
Fugitive components	Fugitive inspection and maintenance program implemented per Rule 331	80

Detailed emission calculations are shown in Attachment 10.2

Reference C - Storage Tanks

- The maximum operating schedule is in units of hours;
- The hourly/daily/annual emissions scenario is based on the following assumptions:
  - Maximum True vapor pressure: 1.2 psia @ 180 °F (this is an estimate only)
  - Crude oil (heated) is stored in steam-heated tanks (at 180° F).
  - Emissions occur 24 hours/day and 365 days/year.
  - The oil throughput rate for each shipping tank is 150 barrels/day.

- Emission factors are based on the USEPA's AP-42, Section 7 guidelines.

#### *Diluent Tank*

- Maximum true vapor pressure at average ambient temperature (67° F) is 0.49 psia.
- ROC emissions from the diluent tank is computed following the same procedures as for the crude oil tanks at the facility, i.e., the ones outlined in the USEPA's AP-42; except, the "working losses" were set to zero since they were computed elsewhere.
- The diluent throughput rate for the tank is 463 barrels/day (bpd).
- Emissions occur throughout 24 hours/day and 365 days/year.

#### Reference D - Pit/Cellars

- Maximum operating schedule is in units of hours.
- Emission calculation methodology for the diluent pit and well cellars is based on the CARB/KVB report Emissions Characteristics of Crude Oil Production Operations in California (1/83).
- The pit is not subject to Rule 344. A control efficiency of 70% is assumed for the pit
- Maximum surface area of each cellar does not exceed 28.27 sq. ft. (i.e., a cellar diameter does not exceed 6 ft.). The control efficiency for the cellar emissions are assumed to be 70%.

## Reference E - Unloading/Loading Racks

### Diluent Loading Rack:

- The maximum operating schedule is in units of hours;
- The hourly/daily/annual emissions scenario for the “working losses” (AP-42, Chap.5) is based on the following assumptions:
- Diluent unloading rate is 463 bbl/day (i.e., tank capacity) maximum, 10,950 bbl/yr; emissions are assumed to occur 2.89 hours/day and 68.44 hours/year;
- The unloading at the loading racks is of the submerged fill or bottom loading type.
- The “filling/splash loss” does not occur at the diluent unloading station since the station is at grade level and submerged type unloading takes place.

### Crude Oil Loading Rack:

- Oil loading rack emission factors appear in AP-42, Volume 1, Section 5.
- Oil loading rate is 500 bbl/day maximum (i.e., stock tank capacity), 54,750 bbl./yr; emissions are assumed to occur 3.13 hours/day and 342.19 hours/year;
- The loading at the loading racks is of the submerged fill or bottom loading type.
- The “filling/splash loss” does not occur at the oil loading racks since the loading rack is at grade level and submerged type loading takes place.

## Reference F - Solvents

- All solvents not used to thin surface coatings are included in this equipment category.
- Exempt solvent emissions (per Rule 202.U.3) are assumed to be based on 55 gallons of solvent use (maximum expected) at the facility with 6.6 lb. of ROC per gallon of solvent.
- Emissions from exempt solvent use, per Rule 202.N shall not exceed 10 tons per year

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## **10.2 Emission Calculation Spreadsheets**

**FIXED ROOF TANK CALCULATION (AP-42: Chapter 7 Method)**

Basic Input Data	
liquid {1:G13, 2:G10, 3:G7, 4:C, 5:JP, 6:ker, 7:O2, 8:O6} =	4
liquid TVP =	1.2
if TVP is entered, enter TVP temperature (°F) =	180
tank heated (yes, no) =	yes
if tank is heated, enter temp (°F) =	180
vapor recovery system present? (yes, no) =	no
is this a wash tank? (yes, no) =	no
will flashing losses occur in this tank? (yes, no) =	no
breather vent pressure setting range (psi) (def = 0.06):	0.11

Tank Data	
diameter (feet) =	15.4
capacity (enter barrels in first col, gals will compute) =	500 21,000
conical or dome roof? (c, d) =	c
shell height (feet) =	16
roof height (def = 1):	1
ave liq height (feet):	8
color {1:Spec Al, 2:Diff Al, 3:Lite, 4:Med, 5:Rd, 6:Wh} =	4
condition {1: Good, 2: Poor} =	1

Liquid Data		A	B
maximum daily throughput (bopd) =			500
Ann thruput (gal): (enter value in Column A if not max PTE)		7.665E+06	
RVP (psia):		0.25021	
°API gravity =			12

Computed Values	
roof outage <sup>1</sup> (feet):	0.3
vapor space volume <sup>2</sup> (cubic feet):	1,546
turnovers <sup>3</sup> :	365
turnover factor <sup>4</sup> :	0.25
paint factor <sup>5</sup> :	0.68
surface temperatures (°R, °F)	
average <sup>6</sup> :	640 180
maximum <sup>7</sup> :	641.25 181.25
minimum <sup>8</sup> :	638.75 178.75
product factor <sup>9</sup> :	0.75
diurnal vapor ranges	
temperature <sup>10</sup> (fahrenheit degrees):	5
vapor pressure <sup>11</sup> (psia):	0.065521
molecular weight <sup>12</sup> (lb/lb-mol):	50
TVP <sup>13</sup> (psia) [adjusted for ave liquid surface temp]:	1.20002
vapor density <sup>14</sup> (lb/cubic foot):	0.008737
vapor expansion factor <sup>15</sup> :	0.005
vapor saturation factor <sup>16</sup> :	0.654498
vented vapor volume (scf/bbl):	8
fraction ROG - flashing losses:	0.308
fraction ROG - evaporative losses:	0.885

Attachment: 10.2-1  
 Permit: 10259  
 Date: 11/04/09  
 Tank: Shipping Tank  
 Owner: Greka  
 Lease: Dominion  
 District: Santa Barbara  
 Version: Tank-2c.xls

paint color	Paint Factor Matrix	
	paint condition	
	good	poor
spec alum	0.39	0.49
diff alum	0.60	0.68
lite grey	0.54	0.63
med grey	0.68	0.74
red	0.89	0.91
white	0.17	0.34

Molecular Wei	
liquid	
gas rvp 13	
gas rvp 10	
gas rvp 7	
crude oil	
JP -4	
jet kerosene	
fuel oil 2	
fuel oil 6	

Adjusted TVP Matrix	
liquid	TVP value
gas rvp 13	23.7
gas rvp 10	11.2
gas rvp 7	10.7
crude oil	1.20002
JP -4	4.9
jet kerosene	0.0385
fuel oil 2	0.0422
fuel oil 6	0.00016

RVP Ma	
liquid	
gas rvp 13	
gas rvp 10	
gas rvp 7	
crude oil	
JP -4	
jet kerosene	
fuel oil 2	
fuel oil 6	

Long-Term  
 VRU\_Eff =  
 Short-Term  
 VRU\_Eff =

Emissions	Uncontrolled ROC emissions			Controlled ROC emissions		
	lb/hr	lb/day	ton/year	lb/hr	lb/day	ton/year
breathing loss <sup>17</sup> =	0.00	0.04	0.01	0.00	0.04	0.01
working loss <sup>18</sup> =	0.21	4.98	0.91	0.21	4.98	0.91
flashing loss <sup>19</sup> =	0.00	0.00	0.00	0.00	0.00	0.00
<b>TOTALS =</b>	<b>0.21</b>	<b>5.02</b>	<b>0.92</b>	<b>0.21</b>	<b>5.02</b>	<b>0.92</b>

**FIXED ROOF TANK CALCULATION (AP-42: Chapter 7 Method)**

Basic Input Data	
liquid (1:G13, 2:G10, 3:G7, 4:C, 5:JP, 6:ker, 7:O2, 8:O6) =	4
liquid TVP =	1.2
if TVP is entered, enter TVP temperature (°F) =	180
tank heated (yes, no) =	yes
if tank is heated, enter temp (°F) =	180
vapor recovery system present? (yes, no) =	no
is this a wash tank? (yes, no) =	no
will flashing losses occur in this tank? (yes, no) =	no
breather vent pressure setting range (psi) (def = 0.06):	0.11

Tank Data	
diameter (feet) =	21.5
capacity (enter barrels in first col, gals will compute) =	1,000 42,000
conical or dome roof? (c, d) =	c
shell height (feet) =	16
roof height (def = 1):	1
ave liq height (feet):	8
color (1:Spec Al, 2:Diff Al, 3:Lite, 4:Med, 5:Rd, 6:Wh) =	4
condition (1: Good, 2: Poor) =	1

Liquid Data	
maximum daily throughput (bopd) =	500
Ann thrupt (gal): (enter value in Column A if not maxPTE)	7.665E+06
RVP (psia):	0.25021
°API gravity =	12

Computed Values	
roof outage <sup>1</sup> (feet):	0.3
vapor space volume <sup>2</sup> (cubic feet):	3,013
turnovers <sup>3</sup> :	182.5
turnover factor <sup>4</sup> :	0.33
paint factor <sup>5</sup> :	0.68
surface temperatures (°R, °F)	
average <sup>6</sup> :	640 180
maximum <sup>7</sup> :	641.25 181.25
minimum <sup>8</sup> :	638.75 178.75
product factor <sup>9</sup> :	0.75
diurnal vapor ranges	
temperature <sup>10</sup> (fahrenheit degrees):	5
vapor pressure <sup>11</sup> (psia):	0.065521
molecular weight <sup>12</sup> (lb/lb-mol):	50
TVP <sup>13</sup> (psia) (adjusted for ave liquid surface temp):	1.20002
vapor density <sup>14</sup> (lb/cubic foot):	0.008737
vapor expansion factor <sup>15</sup> :	0.005
vapor saturation factor <sup>16</sup> :	0.654498
vented vapor volume (scf/bbl):	8
fraction ROG- flashing losses:	0.308
fraction ROG- evaporative losses:	0.885

Emissions	Uncontrolled ROC emissions			Controlled ROC emissions		
	lb/hr	lb/day	ton/year	lb/hr	lb/day	ton/year
breathing loss <sup>17</sup> =	0.00	0.08	0.01	0.00	0.08	0.01
working loss <sup>18</sup> =	0.27	6.57	1.20	0.27	6.57	1.20
flashing loss <sup>19</sup> =	0.00	0.00	0.00	0.00	0.00	0.00
<b>TOTALS</b> =	<b>0.28</b>	<b>6.65</b>	<b>1.21</b>	<b>0.28</b>	<b>6.65</b>	<b>1.21</b>

Attachment: 10.2-2  
 Permit: 10259  
 Date: 11/04/09  
 Tank: Reject Tank  
 Owner: Greka  
 Lease: Dominion  
 District: Santa Barbara  
 Version: Tank-2c.xls

paint color	paint condition	
	good	poor
spec alum	0.39	0.49
diff alum	0.60	0.68
lite grey	0.54	0.63
med grey	0.68	0.74
red	0.89	0.91
white	0.17	0.34

Molecular Weight Matrix	
liquid	mol wt
gas rvp 13	62
gas rvp 10	66
gas rvp 7	68
crude oil	50
JP-4	80
jet kerosene	130
fuel oil 2	130
fuel oil 6	190

Adjusted TVP Matrix	
liquid	TVP value
gas rvp 13	23.7
gas rvp 10	11.2
gas rvp 7	10.7
crude oil	1.20002
JP-4	4.9
jet kerosene	0.0385
fuel oil 2	0.0422
fuel oil 6	0.00016

RVP Matrix	
liquid	RVP value
gas rvp 13	13
gas rvp 10	10
gas rvp 7	7
crude oil	0.250206
JP-4	2.7
jet kerosene	0.029
fuel oil 2	0.022
fuel oil 6	0.00019

Long-Term  
 VRU\_Eff = 95.00%  
 Short-Term  
 VRU\_Eff = 95.00%

**FIXED ROOF TANK CALCULATION (AP-42: Chapter 7 Method)**

Basic Input Data	
liquid (1:G13, 2:G10, 3:G7, 4:C, 5:JP, 6:ker, 7:O2, 8:O6) =	4
liquid TVP =	0.49
if TVP is entered, enter TVP temperature (°F) =	67
tank heated (yes, no) =	no
if tank is heated, enter temp (°F) =	
vapor recovery system present? (yes, no) =	no
is this a wash tank? (yes, no) =	no
will flashing losses occur in this tank? (yes, no) =	no
breather vent pressure setting range (psi) (def = 0.06):	0.11

Tank Data	
diameter (feet) =	15.5
capacity (enter barrels in first col, gals will compute) =	463 19,446
conical or dome roof? (c, d) =	c
shell height (feet) =	14
roof height (def = 1):	1
ave liq height (feet):	7
color (1:Spec Al, 2:Diff Al, 3:Lite, 4:Med, 5:Rd, 6:Wh) =	4
condition (1: Good, 2: Poor) =	1

Liquid Data		
	A	B
maximum daily throughput (bopd) =		30
Ann thrupt (gal): (enter value in Column A if not max PTE)		4.599E+06
RVP (psia):		1.20026
*API gravity =		20

Computed Values		
roof outage <sup>1</sup> (feet):		0.3
vapor space volume <sup>2</sup> (cubic feet):		1,377
turnovers <sup>3</sup> :		23.66
turnover factor <sup>4</sup> :		1
paint factor <sup>5</sup> :		0.68
surface temperatures (°R, °F)		
average <sup>6</sup> :	527.2	67.2
maximum <sup>7</sup> :	539	79
minimum <sup>8</sup> :	515.4	55.4
product factor <sup>9</sup> :		0.75
diurnal vapor ranges		
temperature <sup>10</sup> (fahrenheit degrees):		47.2
vapor pressure <sup>11</sup> (psia):		0.294355
molecular weight <sup>12</sup> (lb/lb-mol):		50
TVP <sup>13</sup> (psia) [adjusted for ave liquid surface temp]:		0.49249
vapor density <sup>14</sup> (lb/cubic foot):		0.004353
vapor expansion factor <sup>15</sup> :		0.103
vapor saturation factor <sup>16</sup> :		0.839952
vented vapor volume (scf/bbl):		8
fraction ROG - flashing losses:		0.308
fraction ROG - evaporative losses:		0.885

Attachment: 10.2-3  
 Permit: 10259  
 Date: 11/04/09  
 Tank: Diluent Tank  
 Owner: Greka  
 Lease: Dominion  
 District: Santa Barbara  
 Version: Tank-2c.xls

paint color	paint condition	
	good	poor
spec alum	0.39	0.49
diff alum	0.60	0.68
lite grey	0.54	0.63
med grey	0.68	0.74
red	0.89	0.91
white	0.17	0.34

Molecular Weight Matrix	
liquid	mol wt
gas rvp 13	62
gas rvp 10	66
gas rvp 7	68
crude oil	50
JP -4	80
jet kerosene	130
fuel oil 2	130
fuel oil 6	190

Adjusted TVP Matrix	
liquid	TVP value
gas rvp 13	7.908
gas rvp 10	5.56
gas rvp 7	3.932
crude oil	0.49249
JP -4	1.516
jet kerosene	0.0103
fuel oil 2	0.009488
fuel oil 6	0.0000472

RVP Matrix	
liquid	RVP value
gas rvp 13	13
gas rvp 10	10
gas rvp 7	7
crude oil	1.200260862
JP -4	2.7
jet kerosene	0.029
fuel oil 2	0.022
fuel oil 6	0.00019

Long-Term  
 VRU\_Eff = 95.00%  
 Short-Term  
 VRU\_Eff = 95.00%

Emissions	Uncontrolled ROC emissions			Controlled ROC emissions		
	lb/hr	lb/day	ton/year	lb/hr	lb/day	ton/year
breathing loss <sup>17</sup> =	0.02	0.46	0.08	0.02	0.46	0.08
working loss <sup>18</sup> =	0.02	0.49	0.09	0.02	0.49	0.09
flashing loss <sup>19</sup> =	0.00	0.00	0.00	0.00	0.00	0.00
<b>TOTALS</b> =	<b>0.04</b>	<b>0.95</b>	<b>0.17</b>	<b>0.04</b>	<b>0.95</b>	<b>0.17</b>

## LOADING RACK EMISSION CALCULATION PROGRAM

### ADMINISTRATIVE INFORMATION

Diluent Unloading Rack - Attachment 10.2-4  
 Company: Greka  
 Facility: Dominion Lease  
 Processed by: JJM  
 Date: 11/4/2009

Reference: Loading Rack

Rack Type: Enter X as Appropriate	S Factor
Submerged loading of a clean cargo tank	0.50
Submerged loading: Dedicated normal service	<u>    X    </u> 0.60
Submerged loading: Dedicated vapor balance service	1.00
Splash loading of a clean cargo tank	1.45
Splash loading: Dedicated normal service	1.45
Splash loading: Dedicated vapor balance service	1.00

Input data	Reference
S = Saturation Factor	0.60
M = Molecular Weight	50
P = True Vapor Pressure (psia)	2.800
T = Liquid Temperature °R	527
R = Loading Rate (bbl/hr)	160.00
C = Storage Capacity (bbl)	463
A = Annual Production (bbl)	10,950
eff = Vapor Recovery Efficiency	0.00
ROC/THC = Reactivity	0.885
See AP-42 Table 4.4-1	2
Crude Oil: Default = 50 lb/lb-mole	3
See AP-42 Table 12.3-5	1
67 °F + 460 = °R	5
6,720 gallons (42 gallons = 1 bbl)	1
19,446 gallons (42 gallons = 1 bbl)	1
459,900 gallons (42 gallons = 1 bbl)	1
Default = 0.95	1
Crude Oil: Default = 0.885	

HLPD = hours loading per day = (C/R) if < 24 =	<u>2.89</u>	hours/day
HLPY = hours loading per year = (A/R) =	<u>68.44</u>	hours/year
L <sub>L</sub> = Loading loss (lb/1000 gal) = 12.46 (S)(P)(M)(T) =	<u>1.9860</u>	lb/1000 gal

**Total Uncontrolled Hydrocarbon Losses:**

<b>Hourly</b>	THL <sub>H</sub> = (THL <sub>A</sub> /HLPY) =	<u>11.81</u>	lbs/hr
<b>Daily</b>	THL <sub>D</sub> = (THL <sub>H</sub> )(HLPD) =	<u>34.18</u>	lbs/day
<b>Annual</b>	THL <sub>A</sub> = (L <sub>L</sub> )(A)(42 gal/bbl)(1 ton/2,000 lbs)(ROC/THC) =	<u>0.40</u>	TPY

**Total Controlled Hydrocarbon Losses:**

<b>Hourly</b>	THL <sub>H</sub> = (THL <sub>A</sub> /HLPY)(1-eff) =	<u>11.81</u>	lbs/hr
<b>Daily</b>	THL <sub>D</sub> = (THL <sub>H</sub> )(HLPD)(1-eff) =	<u>34.18</u>	lbs/day
<b>Annual</b>	THL <sub>A</sub> = (L <sub>L</sub> )(A)(42 gal/bbl)(1 ton/2,000 lbs)(1-eff)(ROC/THC) = tons/year =	<u>0.40</u>	TPY

Path & File Name:

\\sbcapcd.org\shares\Groups\ENGR\WP\Oil&Gas\Greka\SOUTH Cat Canyon - P70\Dominion\P70 Renew al-2009\Dominion Loading Rack Calcs.xls\JULR

**Notes:**

1. Data provided by the applicant
2. AP-42, (Chapter 5, 5th Edition), Table 5.2-1
3. If not otherwise provided, crude oil is assumed to be 50 lb/lb-mole.
4. If not otherwise provided, vapor pressure is calculated from CARB AB-2588 Guidelines, page 103, eq. 25
5. R is calculated by adding 460 to °F.

Template Revised: September 10, 1997

## LOADING RACK EMISSION CALCULATION PROGRAM

### ADMINISTRATIVE INFORMATION

Crude Oil Loading Rack - Attachment 10.2-5  
 Company: Greka SMV  
 Facility: Dominion Lease  
 Processed JJM  
 Date: 11/4/2009

Reference: Loading Rack

Rack Type: Enter X as Appropriate	S Factor
Submerged loading of a clean cargo tank	0.50
Submerged loading: Dedicated normal service	<u>        </u> 0.60
Submerged loading: Dedicated vapor balance service	<u>        </u> 1.00
Splash loading of a clean cargo tank	<u>        </u> 1.45
Splash loading: Dedicated normal service	<u>        </u> 1.45
Splash loading: Dedicated vapor balance service	<u>        </u> 1.00

### Input data

			Reference
S = Saturation Factor	<u>0.60</u>	See AP-42 Table 4.4-1	2
M = Molecular Weight	<u>50</u>	Crude Oil: Default = 50 lb/lb-mole	3
P = True Vapor Pressure (psia)	<u>1.200</u>	See AP-42 Table 12.3-5	1
T = Liquid Temperature °R	<u>640</u>	<u>180</u> °F + 460 = °R	5
R = Loading Rate (bbl/hr)	<u>160.00</u>	<u>6,720</u> gallons (42 gallons = 1 bbl)	1
C = Storage Capacity (bbl)	<u>500</u>	<u>21,000</u> gallons (42 gallons = 1 bbl)	1
A = Annual Production (bbl)	<u>182,500</u>	<u>7,665,000</u> gallons (42 gallons = 1 bbl)	1
eff = Vapor Recovery Efficiency	<u>0.00</u>	Default = 0.95	1
ROC/THC = Reactivity	<u>0.885</u>	Crude Oil: Default = 0.885	

HLPD = hours loading per day = (C/R) if < 24 =	<u>3.13</u>	hours/day
HLPY = hours loading per year = (A/R) =	<u>1140.63</u>	hours/year
L <sub>L</sub> = Loading loss (lb/1000 gal) = 12.46 (S)(P)(M)/T =	<u>0.7009</u>	lb/1000 gal

### Total Uncontrolled Hydrocarbon Losses:

#### Hourly

THL<sub>H</sub> = (THL<sub>A</sub>/HLPY) = 4.17 lbs/hr

#### Daily

THL<sub>D</sub> = (THL<sub>H</sub>)(HLPD) = 13.03 lbs/day

#### Annual

THL<sub>A</sub> = (L<sub>L</sub>)(A)(42 gal/bbl)(1 ton/2,000 lbs)(ROC/THC) = 2.38 TPY

### Total Controlled Hydrocarbon Losses:

#### Hourly

THL<sub>H</sub> = (THL<sub>A</sub>/HLPY)(1-eff) = 4.17 lbs/hr

#### Daily

THL<sub>D</sub> = (THL<sub>H</sub>)(HLPD)(1-eff) = 13.03 lbs/day

#### Annual

THL<sub>A</sub> = (L<sub>L</sub>)(A)(42 gal/bbl)(1 ton/2,000 lbs)(1-eff)(ROC/THC) = tons/year = 2.38 TPY

Path & File Name:

\\sbcapcd.org\s\hares\Groups\ENGR\WP\Oil&Gas\Greka\SOUTH Cat Canyon - P70\Dominion\PR70 Renew al-2009\[Dominion Loading Rack Calcs.xls]LR

### Notes:

1. Data provided by the applicant
2. AP-42, (Chapter 5, 5th Edition), Table 5.2-1
3. If not otherwise provided, crude oil is assumed to be 50 lb/lb-mole.
4. If not otherwise provided, vapor pressure is calculated from CARB AB-2588 Guidelines, page 103, eq. 25
5. R is calculated by adding 460 to °F.

Template Revised: September 10, 1997

## FUGITIVE HYDROCARBON CALCULATIONS - CARB/KVB METHOD

Page 1 of 2

ADMINISTRATIVE INFORMATION			
Attachment:			
Company:	Greka	Version:	fhc-kvb5.xls
Facility:	Dominion Lease	Date:	24-Oct-00
Processed by:	JJM 11/4/09		
Path & File Name:			
\\sbcapcd.org\shares\Groups\ENGR\WPOil&Gas\Greka\SOUTH Cat Canyon - P70\Dominion\P70 Renew al-2009\[Dominion FHC KVB Calcs.xls]FHC CALC KVB			

Reference: CARB speciation profiles #s 529, 530, 531, 532

<u>Data</u>	<u>Value</u>	<u>Units</u>
Number of Active Wells at Facility	11	wells
Facility Gas Production	not available	scf/day
Facility Dry Oil Production	150	bbls/day
Facility Gas to Oil Ratio (if > 500 then default to 501)	501	scf/bbl
API Gravity	12	degrees API
Facility Model Number	5	dimensionless
No. of Steam Drive Wells with Control Vents	0	wells
No. of Steam Drive Wells with Uncontrol Vents	0	wells
No. of Cyclic Steam Drive Wells with Control Vents	0	wells
No. of Cyclic Steam Drive Wells with Uncontrol Vents	0	wells
Composite Valve and Fitting Emission Factor	2.8053	lb/day-well

Lease Model	Valve	Fitting	Composite	
	ROG Emission Factor Without Ethane	ROG Emission Factor Without Ethane	ROG Emission Factor Without Ethane	
1	1.4921	0.9947	2.4868	lbs/day-well
2	0.6999	0.6092	1.3091	lbs/day-well
3	0.0217	0.0673	0.0890	lbs/day-well
4	4.5090	2.1319	6.6409	lbs/day-well
5	0.8628	1.9424	2.8053	lbs/day-well
6	1.7079	2.5006	4.2085	lbs/day-well

- Model #1: Number of wells on lease is less than 10 and the GOR is less than 500.  
 Model #2: Number of wells on lease is between 10 and 50 and the GOR is less than 500.  
 Model #3: Number of wells on lease is greater than 50 and the GOR is less than 500.  
 Model #4: Number of wells on lease is less than 10 and the GOR is greater than 500.  
 Model #5: Number of wells on lease is between 10 and 50 and the GOR is greater than 500.  
 Model #6: Number of wells on lease is greater than 50 and the GOR is greater than 500.

### ROC Emission Calculation Summary Results Table Reactive Organic Compounds<sup>(c)</sup>

	lbs/hr	lbs/day	tons/year
Valves and Fittings <sup>(a)</sup>	0.26	6.17	1.13
Sumps, Wastewater Tanks and Well Cellars <sup>(b)</sup>	0.42	10.16	1.85
Oil/Water Separators <sup>(b)</sup>	0.00	0.00	0.00
Pumps/Compressors/Well Heads <sup>(a)</sup>	0.01	0.18	0.03
Enhanced Oil Recovery Fields	0.00	0.00	0.00
<b>Total Facility FHC Emissions (ROC)</b>	<b>0.69</b>	<b>16.51</b>	<b>3.01</b>

- a: Emissions amount reflect an 80% reduction due to Rule 331 implementation.  
 b: Emissions reflect control efficiencies where applicable.  
 c: Due to rounding, the totals may not appear correct

Emission Calculation by Emission Unit

**Pumps, Compressors, and Well Heads Uncontrolled Emission Calculations**

Number of Wells	11	wells
Wellhead emissions	0.1067	ROC (lb/well-day)
FHC from Pumps	0.0429	ROC (lb/well-day)
FHC from Compressors	<u>0.7469</u>	ROC (lb/well-day)
Total:	0.8965	ROC (lb/well-day)

**Sumps, Uncovered Wastewater Tanks, and Well Cellars**

Efficiency Factor: (70% for well cellars, 0% for uncovered WW tanks, sumps and pits)  
 Unit Type/Emissions Factor

	Heavy Oil Service	Light Oil Service	
Primary	0.0941	0.138	(lb ROC/ft <sup>2</sup> -day)
Secondary	0.0126	0.018	(lb ROC/ft <sup>2</sup> -day)
Tertiary	0.0058	0.0087	(lb ROC/ft <sup>2</sup> -day)

**Surface Area and Type (emissions in lbs/day)**

Description/Name	Number	Area (ft <sup>2</sup> )	Primary	Secondary	Tertiary
Well Cellars <sup>(a)</sup>	9	358	10.11		
Diluent Emergency Pit	1	9			0.05
(a) A 70% reduction is applied for implementation of Rule 344 (Sumps, Pits, and Well Cellars).			10.11	0.00	0.05

**Covered Wastewater Tanks**

Efficiency Factor: 85%

**Surface Area and Type (emissions in lbs/day)**

Description/Name	Number	Area (ft <sup>2</sup> )	Primary	Secondary	Tertiary
			0.00		
				0.00	
					0.00
			0.00	0.00	0.00

**Covered Wastewater Tanks Equipped with Vapor Recovery**

Efficiency Factor: 95%

**Surface Area and Type (emissions in lbs/day)**

Description/Name	Number	Area (ft <sup>2</sup> )	Primary	Secondary	Tertiary
			0.00		
				0.00	
					0.00
			0.00	0.00	0.00

**Oil/Water Separators**

Efficiency Factor: varies (85% for cover, 95% for VRS, 0% for open top)  
 Emissions Factor: 560 (lb ROC/MM Gal)

**Type (emissions in lbs/day)**

Description/Name	TP-MM Gal	Equipped with Cover	Equipped with VRS	Open Top	Total lb/day
		0.0			
			0.0		
				0.0	
		0.0	0.0	0.0	0.0



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### **10.3            *Fee Calculations***

Permit fees for the Dominion Lease are based on equipment rating, pursuant to APCD Rule 210.I.B.2 and Schedule A. See Attachment **Error! Reference source not found.** for a list of fee-permitted equipment at this facility.

NOTE: All work performed with respect to implementing the requirements of the Part 70 Operating Permit program, including federal permit processing and federal permit compliance monitoring are assessed on a cost reimbursement basis pursuant to APCD Rule 210.I.C.

## FEE STATEMENT

PT-70/Reeval No. 10259 - R4

FID: 04127 Dominion Lease / SSID: 02658



Device No.	Device Name	Fee Schedule	Qty of Fee Units	Fee per Unit	Fee Units	Max or Min. Fee Apply?	Number of Same Devices	Pro Rate Factor	Device Fee	Penalty Fee?	Fee Credit	Total Fee per Device
004097	Boiler	A3	0.270	440.07	Per 1 million Btu input	No	1	1.000	118.82	0.00	0.00	118.82
004096	Heater Treater	A3	2.000	440.07	Per 1 million Btu input	No	1	1.000	880.14	0.00	0.00	880.14
004104	Line Heater	A3	1.000	440.07	Per 1 million Btu input	No	1	1.000	440.07	0.00	0.00	440.07
004106	Oil and Gas Wellheads	A1.a	1.000	58.66	Per equipment	No	11	1.000	645.26	0.00	0.00	645.26
004098	Valves & Fittings	A1.a	1.000	58.66	Per equipment	No	1	1.000	58.66	0.00	0.00	58.66
108966	Emergency Diluent Overflow Pit	A1.a	1.000	58.66	Per equipment	No	1	1.000	58.66	0.00	0.00	58.66
004091	Crude Oil Stock Tank	A6	21.000	3.36	Per 1000 gallons	No	1	1.000	70.56	0.00	0.00	70.56
004090	Crude Oil Reject Tank	A6	42.000	3.36	Per 1000 gallons	No	1	1.000	141.12	0.00	0.00	141.12
004092	Diluent Storage Tank	A6	19.500	3.36	Per 1000 gallons	No	1	1.000	65.52	0.00	0.00	65.52
008387	Diluent Truck Unloading Station	A1.a	1.000	58.66	Per equipment	No	1	1.000	58.66	0.00	0.00	58.66
008386	Crude Oil Loading Rack	A1.a	1.000	58.66	Per equipment	No	1	1.000	58.66	0.00	0.00	58.66
004093	Horizontal Free Water Knockout Vessel	A6	1.000	3.36	Per 1000 gallons	Min	1	1.000	58.28	0.00	0.00	58.28
<b>Device Fee Sub-Totals =</b>									<b>\$2,654.41</b>	<b>\$0.00</b>	<b>\$0.00</b>	
<b>Device Fee Total =</b>												<b>\$2,654.41</b>

**Fee Statement Grand Total = \$2,654**

Notes:

- 
- (1) Fee Schedule Items are listed in APCD Rule 210, Fee Schedule "A".
  - (2) The term "Units" refers to the unit of measure defined in the Fee Schedule.

## 10.4 IDS Database Emission Tables

Table 10.4-1 Permitted Potential to Emit (PTE)

Facility	Units	NOx	ROC	CO	SOx	PM	PM10
Dominion	lbs/day	7.74	76.73	5.00	10.72	0.71	0.71
	TPY	1.41	8.16	0.91	1.96	0.13	0.13

Table 10.4-2. Greka South Cat Canyon Stationary Source PTE

Facility	FID	Units	NOx	ROC	CO	SOx	PM	PM10
Bell Lease	3211	lbs/day	19.04	232.44	16.03	28.66	1.60	1.60
		TPY	3.47	42.21	2.93	5.23	0.29	0.29
Blockman Lease	3306	lbs/day	0.00	42.99	0.00	0.00	0.00	0.00
		TPY	0.00	7.85	0.00	0.00	0.00	0.00
Dominion Lease	4127	lbs/day	7.74	76.73	5.00	10.72	0.71	0.71
		TPY	1.41	8.16	0.91	1.96	0.13	0.13
ICE Facility	3831	lbs/day	1,166.08	70.58	1,004.02	76.09	6.49	6.49
		TPY	212.81	12.88	178.91	13.89	2.19	2.19
Palmer Stendl Lease	3307	lbs/day	0.00	17.53	0.00	0.00	0.00	0.00
		TPY	0.00	3.20	0.00	0.00	0.00	0.00
UCB Lease	4126	lbs/day	8.70	26.52	7.32	12.09	0.67	0.67
		TPY	1.59	4.04	1.34	2.21	0.12	0.12
TOTALS		lbs/day	1,201.56	466.79	1,032.37	127.56	9.47	9.47
		TPY	219.28	78.34	184.09	23.29	2.73	2.73

**Table 10.4-3. Greka South Cat Canyon Stationary Source NEI Since 1990 (FNEI90)**

Facility	FID	Permits	Units	NOx	ROC	CO	SOx	PM	PM10
Bell Lease	3211	ATC 9146, 9412, and 9387	lbs/hr	0.00	1.44	4.58	0.00	0.00	0.00
			lbs/day	0.00	23.15	109.92	0.00	0.00	0.00
			TPQ	0.00	0.76	4.69	0.00	0.00	0.00
			TPY	0.00	4.22	18.75	0.00	0.00	0.00
Blockman	3306	ATC 9964	lbs/hr	0.00	0.03	0.00	0.00	0.00	0.00
			lbs/day	0.00	0.60	0.00	0.00	0.00	0.00
			TPQ	0.00	0.03	0.00	0.00	0.00	0.00
			TPY	0.00	0.11	0.00	0.00	0.00	0.00
Dominion Lease	4127	ATC 9734 and 9884	lbs/hr	0.25	0.37	0.05	0.34	0.03	0.03
			lbs/day	6.00	8.93	1.30	8.17	0.69	0.69
			TPQ	0.28	0.66	0.06	0.37	0.03	0.03
			TPY	1.10	2.64	0.23	1.49	0.13	0.13
ICE Facility	3831	ATC 9610, 9975, 10133, and 10421	lbs/hr	0.00	0.00	0.00	0.00	0.05	0.05
			lbs/day	0.00	0.00	0.00	0.00	0.95	0.95
			TPQ	0.00	0.00	0.00	0.00	0.05	0.05
			TPY	0.00	0.00	0.00	0.00	0.18	0.18
Palmer Stendel	3307	ATC 9665	lbs/hr	0.00	0.02	0.00	0.00	0.00	0.00
			lbs/day	0.00	0.48	0.00	0.00	0.00	0.00
			TPQ	0.00	0.03	0.00	0.00	0.00	0.00
			TPY	0.00	0.10	0.00	0.00	0.00	0.00
UCB Lease	4126	ATC 10174	lbs/hr	0.00	0.12	0.00	0.00	0.00	0.00
			lbs/day	0.00	2.83	0.00	0.00	0.00	0.00
			TPQ	0.00	0.04	0.00	0.00	0.00	0.00
			TPY	0.00	0.14	0.00	0.00	0.00	0.00
	Source NEI		lbs/hr	<b>0.25</b>	<b>1.97</b>	<b>4.63</b>	<b>0.34</b>	<b>0.08</b>	<b>0.08</b>
			lbs/day	<b>6.00</b>	<b>35.99</b>	<b>111.22</b>	<b>8.17</b>	<b>1.64</b>	<b>1.64</b>
			TPQ	<b>0.28</b>	<b>1.51</b>	<b>4.75</b>	<b>0.37</b>	<b>0.08</b>	<b>0.08</b>
			TPY	<b>1.10</b>	<b>7.21</b>	<b>18.98</b>	<b>1.49</b>	<b>0.31</b>	<b>0.31</b>

Facility	FID	Permits	Units	NOx	ROC	CO	SOx	PM	PM10
Bell Lease	3211	ATC 9146, 9412, and 9387	lbs/hr	0.00	1.44	4.58	0.00	0.00	0.00
			lbs/day	0.00	16.61	109.92	0.00	0.00	0.00
			TPQ	0.00	0.76	4.69	0.00	0.00	0.00
			TPY	0.00	3.03	18.75	0.00	0.00	0.00
Blockman	3306	ATC 9964	lbs/hr	0.00	0.03	0.00	0.00	0.00	0.00
			lbs/day	0.00	0.60	0.00	0.00	0.00	0.00
			TPQ	0.00	0.03	0.00	0.00	0.00	0.00
			TPY	0.00	0.11	0.00	0.00	0.00	0.00
Dominion Lease	4127	ATC 9734 and 9884	lbs/hr	0.25	0.37	0.05	0.34	0.03	0.03
			lbs/day	6.00	8.93	1.30	8.17	0.69	0.69
			TPQ	0.28	0.66	0.06	0.37	0.03	0.03
			TPY	1.10	2.64	0.23	1.49	0.13	0.13
ICE Facility	3831	ATC 9610, 9975, 10133, and 10421	lbs/hr	-0.24	-1.67	-3.16	-0.81	0.05	0.05
			lbs/day	-5.61	-22.14	-75.90	-17.35	0.95	0.95
			TPQ	-0.26	-1.03	-3.14	-0.76	0.05	0.05
			TPY	-1.03	-4.07	-12.56	-3.03	0.18	0.18
Palmer Stendel	3307	ATC 9665	lbs/hr	0.00	0.02	0.00	0.00	0.00	0.00
			lbs/day	0.00	0.48	0.00	0.00	0.00	0.00
			TPQ	0.00	0.03	0.00	0.00	0.00	0.00
			TPY	0.00	0.10	0.00	0.00	0.00	0.00
Security Fee	3063	ATC 9252	lbs/hr	0.00	0.07	0.00	0.00	0.00	0.00
			lbs/day	0.00	1.68	0.00	0.00	0.00	0.00
			TPQ	0.00	0.07	0.00	0.00	0.00	0.00
			TPY	0.00	0.28	0.00	0.00	0.00	0.00
UCB Lease	4126	ATC 10174	lbs/hr	0.00	0.12	0.00	0.00	0.00	0.00
			lbs/day	0.00	2.83	0.00	0.00	0.00	0.00
			TPQ	0.00	0.04	0.00	0.00	0.00	0.00
			TPY	0.00	0.14	0.00	0.00	0.00	0.00
United California	3040	ATC 8895, 9250, 9159, and 9834	lbs/hr	1.65	2.67	5.02	2.36	0.31	0.31
			lbs/day	39.73	64.29	120.16	56.99	7.23	7.23
			TPQ	1.81	2.93	5.48	2.60	0.33	0.33
			TPY	7.25	11.70	21.93	10.40	1.32	1.32
Source NEI	Source NEI		lbs/hr	<b>1.66</b>	<b>3.04</b>	<b>6.50</b>	<b>1.89</b>	<b>0.39</b>	<b>0.39</b>
			lbs/day	<b>40.12</b>	<b>73.28</b>	<b>155.48</b>	<b>47.81</b>	<b>8.87</b>	<b>8.87</b>
			TPQ	<b>1.83</b>	<b>3.48</b>	<b>7.09</b>	<b>2.21</b>	<b>0.41</b>	<b>0.41</b>
			TPY	<b>7.32</b>	<b>13.93</b>	<b>28.35</b>	<b>8.86</b>	<b>1.63</b>	<b>1.63</b>

## **10.5 *Equipment List***

**Tuesday, November 03, 2009**  
**Santa Barbara County APCD – Equipment List**

PT-70/Reeval 10259 R4 / FID: 04127 Dominion Lease / SSID: 02658

**A PERMITTED EQUIPMENT**

**1 Boiler**

<i>Device ID #</i>	<b>004097</b>	<i>Device Name</i>	<b>Boiler</b>
<i>Rated Heat Input</i>	0.270 MMBtu/Hour	<i>Physical Size</i>	
<i>Manufacturer</i>	National Boiler Company	<i>Operator ID</i>	
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>			

**2 Heater Treater**

<i>Device ID #</i>	<b>004096</b>	<i>Device Name</i>	<b>Heater Treater</b>
<i>Rated Heat Input</i>	2.000 MMBtu/Hour	<i>Physical Size</i>	
<i>Manufacturer</i>	Superior	<i>Operator ID</i>	
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>	Produced gas is routed to the gas collection system.		

**3 Line Heater**

<i>Device ID #</i>	<b>004104</b>	<i>Device Name</i>	<b>Line Heater</b>
<i>Rated Heat Input</i>	1.000 MMBtu/Hour	<i>Physical Size</i>	
<i>Manufacturer</i>	Lakota Engineering	<i>Operator ID</i>	
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>			

## 4 O&G Wells, Cellars and Unassociated Valves & Flanges

### 4.1 Oil and Gas Wellheads

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<i>Device ID #</i>	<b>004106</b>	<i>Device Name</i>	<b>Oil and Gas Wellheads</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	11.00 Total Wells
<i>Manufacturer</i>		<i>Operator ID</i>	
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>	Nine wellheads equipped with well cellars.		

---

### 4.2 Well Cellars - All

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<i>Device ID #</i>	<b>004107</b>	<i>Device Name</i>	<b>Well Cellars – All</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	358.00 Square Feet Cellar Area
<i>Manufacturer</i>		<i>Operator ID</i>	
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>	Nine well cellars of various sizes having a combined square footage of 358 square feet (maximum).		

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### 4.3 Valves & Fittings

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<i>Device ID #</i>	<b>004098</b>	<i>Device Name</i>	<b>Valves &amp; Fittings</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	11.00 Active Wells
<i>Manufacturer</i>		<i>Operator ID</i>	
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>			

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## 5 Emergency Diluent Overflow Pit

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<i>Device ID #</i>	<b>108966</b>	<i>Device Name</i>	<b>Emergency Diluent Overflow Pit</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	9.00 Square Feet Area
<i>Manufacturer</i>		<i>Operator ID</i>	
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>			
<i>Description</i>			

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## 6 Crude Oil Stock Tank

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<i>Device ID #</i>	<b>004091</b>	<i>Device Name</i>	<b>Crude Oil Stock Tank</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	500.00 BBL
<i>Manufacturer</i>		<i>Operator ID</i>	501
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>			
<i>Description</i>	Dia.15.3', shell height of 16.0' and a cone roof height above the shell of 0.5'. The tank vents to atmosphere, it is heated by the boiler, and it has a pressure-vacuum relief valve with a pressure setting range of 0.11 psig.		

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## 7 Crude Oil Reject Tank

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<i>Device ID #</i>	<b>004090</b>	<i>Device Name</i>	<b>Crude Oil Reject Tank</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	1000.00 BBL
<i>Manufacturer</i>		<i>Operator ID</i>	9833
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>			
<i>Description</i>	Diameter of 21.5 feet, shell height of 16.0 feet and a cone roof height above the shell of 0.7 feet. The tank vents to atmosphere, it is heated by the boiler, and it has a pressure-vacuum relief valve with a pressure setting range of 0.11 psig.		

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## 8 Diluent Storage Tank

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<i>Device ID #</i>	<b>004092</b>	<i>Device Name</i>	<b>Diluent Storage Tank</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	463.00 BBL
<i>Manufacturer</i>		<i>Operator ID</i>	502
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>	Diameter of 15.3 feet, shell height of 16.0 feet with a cone roof height above the shell of 0.4 feet. The tank vents to atmosphere, is unheated, and has a pressure-vacuum relief valve with a pressure setting range of 0.06 psig. The maximum tank height is reduced by a 2 inch overflow line located 14 feet above the base of the tank configured with a “U” shape vapor trap to prevent vapors from venting to the atmosphere.		
<i>Description</i>			

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## 9 Diluent Truck Unloading Station

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<i>Device ID #</i>	<b>008387</b>	<i>Device Name</i>	<b>Diluent Truck Unloading Station</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>		<i>Operator ID</i>	
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>	Equipped with one (1) loading nozzle for unloading diluent from highway tanker truck into the diluent storage tank.		
<i>Description</i>			

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## 10 Crude Oil Loading Rack

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<i>Device ID #</i>	<b>008386</b>	<i>Device Name</i>	<b>Crude Oil Loading Rack</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>		<i>Operator ID</i>	
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>	For loading hot crude oil from the stock tank to tanker trucks, connected to the Vapor Recovery System.		
<i>Description</i>			

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**11 Horizontal Free Water Knockout Vessel**

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<i>Device ID #</i>	<b>004093</b>	<i>Device Name</i>	<b>Horizontal Free Water Knockout Vessel</b>
<i>Rated Heat Input</i>		<i>Physical Size</i>	
<i>Manufacturer</i>		<i>Operator ID</i>	
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device</i>	Dia. 8.0' and 20.0' long. Produced gas is routed to the gas collection		
<i>Description</i>	system.		

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**10.6 Well List**

Attachment 10.6. Permitted Wells.

<u>Operator Name</u>	<u>Field Name</u>	<u>Lease</u>	<u>Well#</u>	<u>API</u>	<u>Well Stat</u>	<u>Pool</u>	<u>Well Type</u>	<u>PWT Stat</u>	<u>S</u>	<u>T</u>	<u>R</u>	<u>BM</u>	<u>Area</u>	<u>Area Name</u>	<u>NEI</u>
Greka Oil & Gas, Inc.	Cat Canyon	Dominion	35X	<a href="#">08300693</a> -	Idle	00	OG	Idle	23	9N	33W	SB	21	West Area	No
Greka Oil & Gas, Inc.	Cat Canyon	Dominion	28-23	<a href="#">08301419</a> -	Idle	00	OG	Idle	23	9N	33W	SB	21	West Area	No
Greka Oil & Gas, Inc.	Cat Canyon	Dominion	34-23	<a href="#">08301421</a> -	Idle	00	OG	Idle	23	9N	33W	SB	21	West Area	No
Greka Oil & Gas, Inc.	Cat Canyon	Dominion	35-23	<a href="#">08301422</a> -	Idle	00	OG	Idle	23	9N	33W	SB	21	West Area	No
Greka Oil & Gas, Inc.	Cat Canyon	Dominion	36-23	<a href="#">08301423</a> -	Idle	00	OG	Idle	23	9N	33W	SB	21	West Area	No
Greka Oil & Gas, Inc.	Cat Canyon	Dominion	38-23	<a href="#">08301424</a> -	Idle	00	OG	Idle	23	9N	33W	SB	21	West Area	No
Greka Oil & Gas, Inc.	Cat Canyon	Dominion	46-23	<a href="#">08301426</a> -	Idle	00	OG	Idle	23	9N	33W	SB	21	West Area	No
Greka Oil & Gas, Inc.	Cat Canyon	Dominion	47-23	<a href="#">08301427</a> -	Idle	00	OG	Idle	23	9N	33W	SB	21	West Area	No
Greka Oil & Gas, Inc.	Cat Canyon	Dominion	48-23	<a href="#">08301428</a> -	Active	00	OG	Active	23	9N	33W	SB	21	West Area	No
Greka Oil & Gas, Inc.	Cat Canyon	Dominion	57-23	<a href="#">08301429</a> -	Active	00	OG	Active	23	9N	33W	SB	21	West Area	No
Greka Oil & Gas, Inc.	Cat Canyon	Dominion	58-23	<a href="#">08301430</a> -	Idle	00	OG	Idle	23	9N	33W	SB	21	West Area	No

1. This table represents the number of active and idle oil and gas wells at this facility as reported by the DOGGR.
2. Section (S), Township (T) and Range, (R) is a surveyed rectangular land grid system that covers most of the United States. A township is the measure of units north or south of a baseline, the horizontal line where the survey began. A Range is the measure of units east or west of a meridian, the vertical line where the survey began. Each Township/Range is thirty-six square miles, measuring 6 miles by 6 miles, and contains 36 one-mile square sections. In California, there are three base and meridians, Humboldt, Mount Diablo, and San Bernardino.

