

Proposed

**APCD PERMIT TO OPERATE NO. 8076
AND
PART 70 OPERATING PERMIT NO. 8076**

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

**BLOCKMAN 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
gr	grain
HAP	hazardous air pollutant (as defined by CAAA, Section 112(b))
H ₂ 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 ₂	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
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. 8076) as well as the State Operating Permit (Permit to Operate No. 8076).
- 1.1.2 Part 70 Permitting. The initial Part 70 permit for the Blockman 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. Blockman Lease facility (FID 3306) is a part of the Greka South Cat Canyon stationary source (SSID = 2658), which is a major source for NO_x 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.

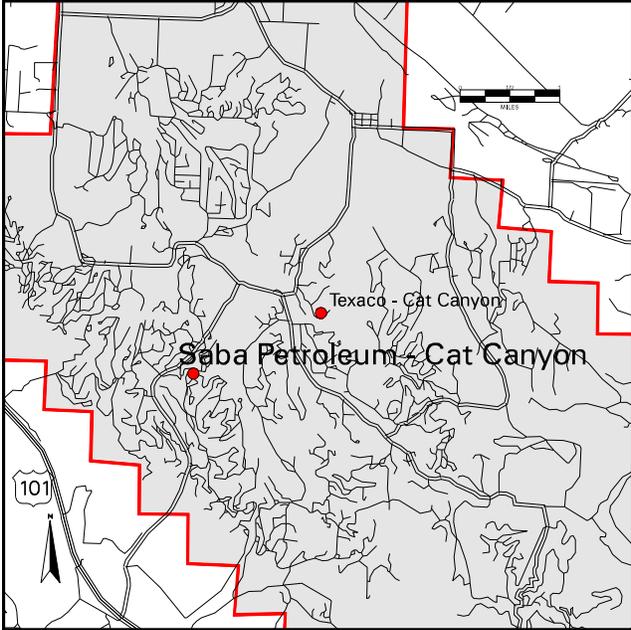
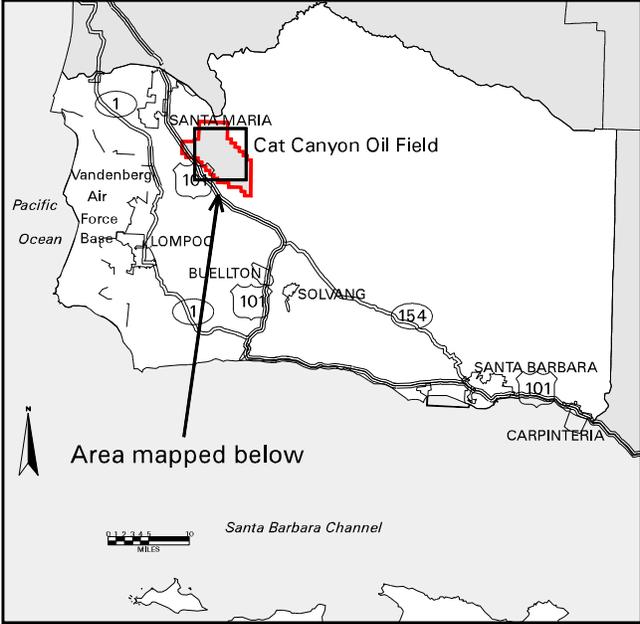
Pursuant to the stated aims of Title V of the CAAA of 1990 (i.e., the Part 70 operating permit program), this permit has been designed to meet two objectives. First, compliance with all conditions in this permit would ensure compliance with all federally-enforceable requirements for the facility. Next, 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 Blockman Lease, located at 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 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 County¹. Figure 1.1 shows the relative location of the facility within the county.

¹ APCD Rule 102, Definition: "Northern Zone"

Figure 1.1 Location Map for Greka Cat Canyon



Blockman Lease was operational in September 1979 when its owner/operator Union Oil of California applied to the APCD for its first operating permit (ATC/PTO 4041). An operating permit was issued to Union Oil by the APCD in October 1979. In June 1993 the ownership of the Cat Canyon stationary source including the Blockman Lease was transferred from Unocal to Saba Petroleum Corporation doing business as D&S Industrial Services. In January 2000, Greka assumed sole ownership of the facility. Oil, water, and gas are currently produced from twenty 20 wells located on the lease. As described below in Section 2.1, the entire production is piped to the central processing facility at Bell Lease.

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 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.

Oil and gas well production at the Greka South Cat Canyon stationary source is produced by wells at the Bell, Blockman, Dominion, Palmer-Stendl and UCB leases and is piped to the central processing facility at the Bell Lease. The crude oil processed at the Bell lease is sent off-site via pipelines or tanker trucks. Gas production from these wells is processed at the Bell lease and used by the boilers and heater treaters at the Bell lease, by the field combustion equipment throughout the Greka Cat Canyon leases, or piped to locations offsite.

The Blockman Lease consists of the following systems:

- Oil & Gas Production wells and surface system
- Oil and gas separation system
- Gas gathering system

1.2.2 Facility New Source Review Overview: Since the issuance of the initial operating permit in October 1979, the following permit actions have been issued::

ATC/PTO 9664: Saba submitted an application (ATC/PTO 9664) to drill an oil and gas well at Blockman Lease. The combined permit ATC/PTO (Authority to Construct/Permit to Operate) 9664 was issued on 12/30/96.

Change of Ownership 8076: One ownership change notice was approved. On June 1, 1993, Saba Petroleum Corporation, doing business as D&S Industrial Services, applied to the

APCD and obtained a change of ownership status for this lease and several other former Unocal properties.

TRN/OO 8076-02: Greka obtained ownership of Blockman Lease from Saba Petroleum. The APCD document TRN/OO 8076-02 was issued on February 29th, 2000.

1.3 Emission Sources

Air pollution emissions from Blockman Lease are the result of oil and gas wells, pits and well cellars, 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, as well as, the entire Blockman Lease. It also lists the potential emissions from non-permitted emission units.

The emission sources include:

1. Oil and gas production wells (20 wells)
2. Sump (1) and well cellars (14)
3. Fugitive emission components

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

1.4 Emission Control Overview

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

- 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 Table 3.4-1 and Table 3.4-2 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 1st 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 below*)
- 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 4.9 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 Process Summary

Process Summary: Blockman Lease is an oil and gas production facility. Oil, water and gas from production wells is piped to the Bell Lease for processing.

Production: The Blockman Lease operates twenty (20) wells. See Attachment 10.6 for a list of these wells. One of these was drilled in 1994. Oil and water emulsion and gas produced by the wells are piped to the central tank battery at the Bell Lease. The production wells are not free flowing; artificial lift pumps are installed in all wells to assist in the crude oil emulsion production. Each well is connected to a casing head gas header system. This system directs produced gas to the compressor plant at the Bell Lease. A 9,894 sq. ft. tertiary service sump (*lower pond*) is located on this lease to receive wastewater from Bell Lease.

2.2 Drilling Activities

2.2.1 *Drilling Program*: A well drilling operation was conducted on Blockman Lease facility in 1994. There are currently no drilling operations at this facility.

2.2.2 *Well Work-over Program*: Well work-over programs have been conducted in the past on Blockman Lease. There are currently no well workover operations at this facility.

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 the tables in Attachment 10.0 for a complete listing of all permitted and exempt emission units.

3. Regulatory Review

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

3.1 Rule Exemptions Claimed

APCD Rule 202 (Exemptions to Rule 201): The only exemption requested by Greka is a de minimis exemption for two Baker tanks installed in October 2005. The ROC emissions from these tanks (1.38 lb/day) constitute de minimis emissions.

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)): Blockman 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): None of the equipment in this permit is subject NSPS requirements.
- 3.2.3 40 CFR Part 61 (NESHAP): None of the equipment in this permit is subject NESHAP requirements.
- 3.2.4 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.9.
- 3.2.5 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.

- 3.2.6 40 CFR Part 70 {Operating Permits}: This Subpart is applicable to Blockman Lease. **Table 3.4-1** lists the federally-enforceable APCD promulgated rules that are “generic” and apply to Blockman 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 Renewal Operating Permit application submitted in July 2009. Table 3.4-4 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 Blockman 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 the Blockman 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: The following is a rule-by-rule evaluation of compliance for Blockman 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 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: Blockman 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

boiler and the heater treaters 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 SO₂ (by volume) and 0.3 gr/scf (at 12% CO₂) respectively. Sulfur emissions due to combustion of field gas containing no more than 796 ppmv H₂S will comply with the SO₂ 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 H₂S 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 and 0.03 ppmv averaged over 1 hour. No measured data exists to confirm compliance with this rule, however, all produced gas from Blockman Lease is sweet. As a result, it is expected that compliance with this rule will be achieved.

Rule 317 - Organic Solvents: This rule sets specific prohibitions against the discharge of emissions of both photo-chemically and non-photo-chemically 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 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 photo-chemically 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, adopted January 25, 1994, 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 Section E. Section E requires that all produced gas be controlled at all times, except for wells undergoing routine maintenance. Compliance with Section E is met by directing all produced gas to the GCS and from there to the off-site pipeline. Compliance with this rule will also be verified by District inspections.

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 will be 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 344 - Petroleum Sumps, Pits and Well Cellars: This rule applies to petroleum sumps, pits and well cellars at petroleum production sources, provided such sources have output exceeding 150 barrels per day. Blockman lease well cellars are subject to this rule. The compliance requirements of this rule are met since all the cellars are inspected weekly to check for spillage or leaks.

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 Blockman 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 by the APCD in April 2004

Table 3.4-1 Generic Federally-Enforceable APCD Rules

Generic Requirements	Affected Emission Units	Basis for Applicability
<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	New equipment addition or 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 212</u> : Emission Statements	All emission units	Administrative
<u>RULE 301</u> : Circumvention	All emission units	Any pollutant emission
<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 317</u> : Organic Solvents	Emission units using solvents	Solvents used in operations.
<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 353</u> : Adhesives and Sealants	Emission units using adhesives	Adhesives and sealants used in

Generic Requirements	Affected Emission Units	Basis for Applicability
	and sealants	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 – Cat Canyon is a major source.
<u>REGULATION VIII</u> : New Source Review	All emission units	Addition of new equipment or modification to existing equipment. Applications to generate ERC Certificates.
<u>REGULATION XIII (RULES 1301-1305)</u> : Part 70 Operating Permits	All emission units	Greka – Cat Canyon is a major source.

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

Unit-Specific Requirements	Affected Emission Units	Basis for Applicability
<u>RULE 325</u> : Crude Oil Production and Separation	Produced Gas Emissions from components	All pre-custody production and processing emission units
<u>RULE 331</u> : Fugitive Emissions Inspection & Maintenance	All components handling oil and gas :	Components emit fugitive ROCs.
<u>RULE 344</u> : Petroleum sumps, cellars and pits	Well cellar units	Cellars at an oil production lease.

Table 3.4-3 Non-Federally-Enforceable APCD Rules

Requirement	Affected Emission Units	Basis for Applicability
<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

Rule No.	Rule Name	Adoption Date
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
Rule 309	Specific Contaminants	October 23, 1978
Rule 310	Odorous Organic Sulfides	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 No.	Rule Name	Adoption Date
Rule 360	Emissions from Oxides of Nitrogen from Large Water Heaters and Small 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 1001	National Emission Standards for Hazardous Air Pollutants (NESHAPS)	October 23, 1993
Rule 1301	General Information	September 18, 1997
Rule 1302	Permit Application	November 9, 1993
Rule 1303	Permits	November 9, 1993
Rule 1304	Issuance, Renewal, Modification and Reopening	November 9, 1993
Rule 1305	Enforcement	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 March 23, 2007, December 11, 2007, May 29, 2009 and September 18, 2009. NOVs 9026 and 9035 were issued as a result of the December 11, 2007 inspection. With the exception of these NOVs, 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.

3.5.2 Enforcement Actions: The following enforcement actions were issued for Blockman lease since the previous permit renewal:

NOV 8909: Violation of Rule 331. Issued 09/05/2007. Failure to repair leaking Fugitive I&M components.

NOV 9025: Violation of Rule 344. Issued 12/12/2007. Failure to control emissions from the upper pond sump.

NOV 9026: Violation of Rule 201. Issued 12/13/2007. Failure to permit four Baker tanks.

NOV 9035: Violation of Rule 344. Issued 03/11/2008. Failure to control emissions from the upper pond sump.

NOV 9384: Violation of Rule 311. Issued 06/09/2009. Exceedance of the allowable number of leaking components per Rule 331.D.1.

3.5.3 Significant Historical Hearing Board Actions and Variances: The following variance was issued to this facility since the prior permit renewal:

Variance Order 08-05E. Issued 06/28/2008. Variance for pond sump cover.

4. Engineering Analysis

4.1 General

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

- ☞ 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 Fugitive Hydrocarbon Sources

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. For 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 Attachments 10.1 and 10.2.

4.3 **Sumps/Well Cellars**

Sumps and Well Cellars: Sumps and well cellars are used for collecting oil spills from the facility at various locations such as the well head stuffing boxes and test sites. Fugitive emissions from well cellars are credited a 70 percent control efficiency for maintaining the cellars per Rule 344 requirements. These emissions are estimated based APCD P&P 6100.060 (Calculation of Fugitive Hydrocarbon Emissions at Oil and Gas Facilities by the CARB/KVB Method - Modified for the Revised ROC Definition). These emissions units are classified as being in primary, secondary, tertiary or post-tertiary service. The calculation methodology is:

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

Where:

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

See Attachments 10.1 and 10.2 for detailed calculations.

4.4 **Gas Gathering System**

Gas from the wellhead casings are gathered by a gas gathering system. Collected gases are piped to the Bell Lease gas compressors for further processing. A control efficiency of 95 percent is assigned to the gas gathering system, since it is a part of the Bell Lease vapor recovery system.

4.5 **Other Emission Sources**

The following is a brief discussion of other emission sources at Blockman Lease:

General Solvent Cleaning/Degreasing: Solvent usage (not used as thinners for surface coating) occurring on Blockman Lease 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.

Surface Coating: Surface coating operations involving the use of paints, coatings and thinners typically include normal touch up activities. Also, entire facility painting programs are performed once every few years. Emissions are determined based on mass balance calculations assuming all solvents evaporate into the atmosphere. Emissions of PM/PM₁₀ from paint overspray are not calculated due to the lack of established calculation techniques.

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 PM₁₀ when needed for compliance evaluations. A PM/PM₁₀ ratio of 1.0 is assumed.

4.6 NSPS/NESHAP/MACT

- 4.6.1 *BACT:* None of the emission units at Blockman Lease are subject to best available control technology (BACT) or new source performance standards (NSPS).
- 4.6.2 *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 Blockman lease, is still exempt from the requirements of this MACT.

4.7 CEMS/Process Monitoring/CAM

- 4.7.1 *CEMS:* There are no CEMS at this facility.
- 4.7.2 *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. No process monitoring is required at Blockman Lease.
- 4.7.3 *CAM:* The Greka South Cat Canyon stationary source 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.

4.8 Source Testing/Sampling

None of the emission units at Blockman Lease listed in this permit are subject to source testing requirements.

4.9 Part 70 Engineering Review: Hazardous Air Pollutant Emissions

Hazardous air pollutant emissions (HAPs) have not been estimated in this permit.

5. Emissions

5.1 *General*

This Part 70/APCD PTO 8076 reevaluation addresses operations at this Lease. The Part70/PTO 8076 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:

- Reactive Organic Compounds (ROC)

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. Table 5.2-1 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

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	ID#	Device Specifications				Usage Data				References				
			Fuel	HHV (Btu/scf)	ppmv S	Size	Units	Capacity	Units	Emission Reduction %		hr	day	qtr	year
Fugitive Components	Valves & Fittings	2883	--	--	--	20	well units	--	--	80%	1.00	24	2190	8760	A
	Wellheads	2884	--	--	--	20	well units	--	--	80%	1.00	24	2190	8760	
	Compressors	2883	--	--	--	20	well units	--	--	80%	1.00	24	2190	8760	
	Pumps	2883	--	--	--	20	well units	--	--	80%	1.00	24	2190	8760	
Sumps/Cellars/Pits	Sump - Lower Pond	100234	--	--	--	9,894	ft ²	--	--	70%	1.00	24	2190	8760	B
	Well Cellars	2885	--	--	--	504	ft ²	--	--	70%	1.00	24	2190	8760	

Table 5.2-2. Equipment Emission Factors

Equipment Category	Description	Emission Factors						References	
		NOx	ROC	CO	SOx	PM	PM10		Units
Fugitive Components	Valves & Fittings	--	2.8053	--	--	--	--	lb/day-well	A
	Wellheads	--	0.0097	--	--	--	--	lb/day-well	
	Compressors	--	0.0679	--	--	--	--	lb/day-well	
	Pumps	--	0.0039	--	--	--	--	lb/day-well	
Sumps/Cellars/Pits	Sump - Lower Pond	--	0.0058	--	--	--	--	lb/ft ² -day	B
	Well Cellars	--	0.0941	--	--	--	--	lb/ft ² -day	

Table 5.2-3. Short Term Emission Limits

Equipment Category	Description	NOx	ROC	CO	SOx	PM	PM10	Federal
		lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	Enforceability
Fugitive Components	Valves & Fittings	--	11.22	--	--	--	--	AE
	Wellheads	--	0.04	--	--	--	--	AE
	Compressors	--	0.27	--	--	--	--	AE
	Pumps	--	0.02	--	--	--	--	AE
Sumps/Cellars/Pits	Sump - Lower Pond	--	17.22	--	--	--	--	AE
	Well Cellars	--	14.23	--	--	--	--	AE

Notes

FE = federally enforceable

AE = APCD-only enforceable

Table 5.2-4. Long Term Emission Limits.

Description	NOx	ROC	CO	SOx	PM	PM10	Federal
	TPY	TPY	TPY	TPY	TPY	TPY	Enforceability
Valves & Fittings	--	2.05	--	--	--	--	AE
Wellheads	--	0.01	--	--	--	--	AE
Compressors	--	0.05	--	--	--	--	AE
Pumps	--	0.003	--	--	--	--	AE
Sump - Lower Pond	--	3.14	--	--	--	--	AE
Well Cellars	--	2.60	--	--	--	--	AE

Notes

FE = federally enforceable
 AE = APCD-only enforceable

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 defined in Table 5.2-1 for each emission unit are assumed. Table 5.3-1 shows the total permitted emissions for the facility.

Daily Scenario:

- Fugitive components (wellheads, valves and fittings)
- Petroleum sump (1)
- Well cellars

Annual Scenario:

- Fugitive components (wellheads, valves and fittings)
- Petroleum sump (1)
- Well cellars

**Table 5.3-1
Blockman Lease - Part 70 PTO 8076
Total Permitted Facility Emissions**

A. Daily

Equipment Category	NOx	ROC	CO	SOx	PM	PM10
Fugitive Components	--	11.55	--	--	--	--
Sumps/Cellars/Pits	--	31.45	--	--	--	--
Totals (lb/day)	0.00	42.99	0.00	0.00	0.00	0.00

B. Annual

Equipment Category	NOx	ROC	CO	SOx	PM	PM10
Fugitive Components	--	2.11	--	--	--	--
Sumps/Cellars/Pits	--	5.74	--	--	--	--
Totals (TPY)	0.00	7.85	0.00	0.00	0.00	0.00

5.4 Part 70: Federal Potential to Emit for the Facility

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. Blockman Lease is not subject to any NSPS/NESHAP. All emissions from Blockman Lease are fugitive in nature. Thus, the federal PTE for this facility is zero.

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	C
	Laboratory Use	202.N			

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 ¹			--	10	--	--	--	--
Totals (TPY):				0.00^r	10.18	0.00	0.00	0.00	0.00

1. The 10 tpy emission 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 November 15, 1990
- P2 = All prior PTE decreases requiring permits on or after November 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 listed below in Table 5.6-1. Attachment 10.4 of this permit shows the NEI for the Greka South Cat Canyon stationary source. .

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

Permit	Description	Issued	Units	NOx	ROC	CO	SOx	PM	PM10
ATC 9964	Oil and Gas Well	12/30/1996	lbs/hr	--	0.03	--	--	--	--
			lbs/day	--	0.6	--	--	--	--
			TPQ	--	0.03	--	--	--	--
			TPY	--	0.11	--	--	--	--
Facility NEI Contribution		P1	lbs/hr	--	0.03	--	--	--	--
			lbs/day	--	0.60	--	--	--	--
			TPQ	--	0.03	--	--	--	--
			TPY	--	0.11	--	--	--	--

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 PM₁₀ 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 at the Greka 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 PM₁₀ 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 Cat Canyon stationary source does not trigger offsets for any pollutants.

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 ERC certificate was renewed in November 2008 as certificate #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 Blockman Lease.

9 Permit Conditions

This section lists the applicable permit conditions for Blockman 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 Blockman 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 earlier than 18 months and not 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 1st and March 1st, 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 Conditions

Number	Title
B.1	Circumvention (Rule 301).
B.2	Nuisance (Rule 303).
B.3	Organic Solvents (Rule 317).
B.4	Metal Surface Coating Thinner and Reducer (Rule 322).
B.5	Architectural Coatings (Rule 323).
B.6	Disposal and Evaporation of Solvents (Rule 324).
B.7	Adhesives and Sealants (Rule 353).
B.8	Oil and Natural Gas Production MACT (Subpart HH)

- 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 **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.3 **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.10 of this permit. *[Re: APCD Rule 317]*
- B.4 **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 Condition D.10 in this permit and facility inspections. *[Re: APCD Rule 322]*
- B.5 **Architectural Coatings (Rule 323).** Greka shall comply with the coating ROC content and handling 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.10 of this permit and facility inspections. *[Re: APCD Rules 323, 317, 322, 324]*

B.6 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.10 of this permit and facility inspections.
[Re: APCD Rule 324]

B.7 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.8 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 30th and January 30th.
[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	Fugitive Hydrocarbon Emissions Components
C.2	Sumps/Cellars/Pits
C.3	Recordkeeping
C.4	Compliance Verification Reports

- C.1 **Fugitive Hydrocarbon Emissions Components.** The following equipment are included in this emissions unit category:

Table C.1-1 Fugitive Hydrocarbon Component List

APCD Device No.	Name
	<i>Oil Service Components</i>
2883	Valves – Bellows Seal
2883	Valves – Accessible/Inaccessible
2883	Valves – Unsafe
2883	Valves - LEV Accessible/Inaccessible
2883	Valves - LEV Unsafe
2883	Flanges/Connections – Accessible/Inaccessible
2883	Flanges/Connections – Unsafe
2883	Compressor Seals – To Atm
2883	Compressor Seals – To VRU
2883	Relief Valves – To Atm
2883	Relief Valves – To VRU
2883	Pump Seals – Tandem
2883	Pump Seals – Single
2883	Exempt
2884	Wellheads — located at twenty one (20) well units
100236	Oil & Gas Traps (separator): 2 in number, 3' diam. by 13' high, each
100235	One Oil & Gas Separator: 4' diam. by 13' high
100237	Weigh Meters: 2 in number, 4' diam. by 5' high

- (a) **Operational Limits:** Operation of the equipment listed in this section 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 conditions in this permit. In addition Greka shall meet the following requirements:

- (i) *GCS Use.* The gas collection system (GCS) including the gas plant compressors fed by the GCS shall be in operation when the equipment connected to the GCS system at the facility is in use. The GCS system also includes headers, manifolds, piping, valves, and flanges associated with the GCS system. The GCS system shall be maintained and operated to minimize the release of emissions from all systems, including pressure relief valves and gauge hatches and any components belonging to the oil and gas separators and weigh meters listed above.
- (ii) *Rule 331 I&M Program.* The APCD-approved I&M Plan (March 2005) for the Greka South Cat Canyon Stationary Source 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. Within 60-days of the issuance of this permit Greka shall submit a revised Fugitive I&M Plan for the South Cat Canyon stationary source.

Rule 331 Exemption Request. If Greka wishes to obtain 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 items listed in this section are 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: The equipment listed in this section are subject to all the record-keeping requirements listed in APCD Rule 331.G. Greka shall record in a log the following:
 - (i) 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);
 - (ii) A record of the total components inspected and the total number and percentage found leaking by component type;
 - (iii) A record of leaks from critical components;
 - (iv) A record of leaks from components that incur five repair actions within a continuous 12-month period; and,
 - (v) A record of component repair actions including dates of component re-inspections; and
 - (vi) Calibration records of Organic Vapor analyzer including dates and methods of calibration and repairs.

- (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 Monitoring/Compliance Verification Reports* condition of this permit. [Re: APCD Rules 331 and 1303, 40 CFR 70.6]

C.2 **Wells and Well Cellars.** The following equipment are included in this emissions category:

Table C.2-1 Wells and Well Cellar Equipment List

APCD Device No.	Name
100234	Lower Pond (sump): tertiary w/w sump, surface area of 9894 ft ² .
100230	Oil & Gas Wells (20): 14 with well cellars with surface area of 36 ft ²

Emission Limits: Mass emissions from the wells and well cellars listed in Table C.2-1 above shall not exceed the limits listed in Error! Reference source not found. and

- (a) . Compliance with this condition shall be based on the operational, monitoring, recordkeeping and reporting conditions in this permit. [Re: APCD ATC 9664]
- (b) **Operational Limits:** All process operations including gas gathering from the equipment listed in this section shall meet the requirements of APCD Rule 325.E and Rule 344, Sections D and E. For the well cellars, Greka shall comply with the requirements of Rule 344.D.3, at a minimum. Compliance with these limits shall be assessed through compliance with the monitoring, record keeping and reporting conditions in this permit.
- (c) **Monitoring:** The equipment listed in this section shall is subject to all applicable monitoring requirements of APCD Rule 344, Section F. The test methods outlined in APCD Rule 344.I shall be used, when applicable.
 - (i) Greka shall inspect the well cellars on a weekly basis to ensure that the liquid depth and the oil/petroleum depth does not exceed the following:
 - (1) liquid depth exceeding 50 percent of the depth of the well cellar; or
 - (2) oil/petroleum depth exceeding 2 inches.
 - (3) 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).
- (d) **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:
 - (1) The date of the detection

- (2) The name of the person and company performing the test or inspection
- (3) The date and time the well cellar is pumped.
- (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 listed below. [Ref: APCD Rules 344 and 1303, 40 CFR 70.6]

C.3 **Recordkeeping.** All records and inspection reports/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 and log entry at the lease. These records or logs shall be readily accessible and be made available to the District upon request. [Re: APCD Rule 1303, 40 CFR 70.6]

C.4 **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 1st and September 1st 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 of 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) *Fugitive Hydrocarbons.* Rule 331 fugitive hydrocarbon I&M program data (quarterly data collected):
 - (i) A summary list of the total components inspected.
 - (ii) The total number and percentage found leaking by component type.
 - (iii) A summary record of leaks from critical components.
 - (iv) A summary record of leaks from components that incur five repair actions within a continuous 12-month period.
 - (v) A summary record of component repair actions including dates of component re-inspections.
 - (vi) The quarterly and annual emissions (TPY) for ROC.
 - (vii) On an annual basis, Rule 331 fugitive hydrocarbon I&M program data that includes an updated FHC I&M inventory due to change in component list or diagrams.

(b) *Well Cellars.*

- (i) The following information, for each detection of conditions which resulted in a pumping of any well cellar:
 - (1) The date of the detection,
 - (2) The name of the person and company performing the test or inspection, and
 - (3) The date and time the well cellar was pumped.
- (ii) The quarterly and annual emissions (TPY) for ROC

(c) *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_x emissions from all permit exempt activities.

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	Solvent Usage
D.10	Permitted Equipment
D.11	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 H₂S 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 the Blockman 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 **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.10 **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 Blockman Lease shall not exceed the values listed in **Error! Reference source not found.**
 - (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.
- (iv) *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 the 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.11.

D.11 **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.12 **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 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) *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.
- (b) *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
- (c) *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
- (d) *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.

AIR POLLUTION CONTROL OFFICER

 February 2010

 Date

NOTES:
 Permit Reevaluation Due Date: February 2013

10.0 Attachments

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

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10.1 Emission Calculation Documentation

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-C refer to Table 5.2-1.

Reference A - 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.

1. 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.
2. Wells Heads: Well piping and pumping equipment located above the underground oil and gas well casing.
3. 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 10.1-1. 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 10.1-2 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 10.1-3 Valve Emission Factors

Lease Model	ROC Emission Factor by Service Type (Lb/day-well)*10-4			
	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 10.1-4 Fitting Emission Factors

Lease Model	ROC Emission Factor by Service Type (Lb/day-well)*10-4			
	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 10.1-5 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 B - Sumps/Well Cellars

- Maximum operating schedule is in units of hours.
- Emission calculation methodology for sumps, and cellars based on the CARB/KVB report Emissions Characteristics of Crude Oil Production Operations in California (1/83).
- Calculations of cellars and sump emissions are based on surface area of emissions unit as supplied by the applicant.
- All well cellars are credited with an ROC control efficiency of 70 % for complying with Rule 344 requirements.
- Maximum surface area of each cellar does not exceed 36 sq. ft. (i.e., a square cellar not exceeding 6 ft. by 6 ft.)

Reference C - Solvents

- All solvents not used to thin surface coatings are included in this equipment category.
- Exempt solvent emissions (maintenance – wipe cleaning) (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 (laboratory use), per Rule 202.N shall not exceed 10 tons per year

10.2 Emission Calculation Spreadsheets - Table 10.1-7 Fugitive Hydrocarbon Emissions Calculations – CARB/KVB Method

FUGITIVE HYDROCARBON CALCULATIONS - CARB/KVB METHOD

Page 1 of 2

ADMINISTRATIVE INFORMATION			
Attachment:			
Company:	Greka Oil and Gas, Inc.	Version:	fhc-kvb5.xls
Facility:	Blockman Lease	Date:	24-Oct-00
Processed by:	JJM		
Date:	11/12/2009		
Path & File Name:			
\\sbcapcd.org\shares\Groups\ENGR\WPOil&Gas\Greka\SOUTH Cat Canyon - Pt70\Blochman\Pt70 Renew al-2009\Blochman FHC KVB Calcs.xls\FHC			

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

<u>Data</u>	<u>Value</u>	<u>Units</u>
Number of Active Wells at Facility	20	wells
Facility Gas Production		scf/day
Facility Dry Oil Production		bbls/day
Facility Gas to Oil Ratio (if > 500 then default to 501)	501	scf/bbl
API Gravity	20	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 ROG Emission Factor Without Ethane	Fitting ROG Emission Factor Without Ethane	Composite ROG Emission Factor Without Ethane	
	1	1.4921	0.9947	
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^(c)

	lbs/hr	lbs/day	tons/year
Valves and Fittings ^(a)	0.47	11.22	2.05
Sumps, Wastewater Tanks and Well Cellars ^(b)	2.98	71.61	13.07
Oil/Water Separators ^(b)	0.00	0.00	0.00
Pumps/Compressors/Well Heads ^(a)	0.01	0.33	0.06
Enhanced Oil Recovery Fields	0.00	0.00	0.00
Total Facility FHC Emissions (ROC)	3.47	83.16	15.18

- 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

Page 2 of 2
Emission Calculation by Emission Unit

Pumps, Compressors, and Well Heads Uncontrolled Emission Calculations

Number of Wells	20	wells
Wellhead emissions	0.194	ROC (lb/well-day)
FHC from Pumps	0.078	ROC (lb/well-day)
FHC from Compressors	1.358	ROC (lb/well-day)
Total:	1.6300	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 ² -day)
Secondary	0.0126	0.018	(lb ROC/ft ² -day)
Tertiary	0.0058	0.0087	(lb ROC/ft ² -day)

Surface Area and Type (emissions in lbs/day)

Description/Name	Number	Area (ft ²)	Primary	Secondary	Tertiary
Well Cellars	20	504	14.23	0.00	
Sump - Lower Pond		9,894			57.39
(a) A 70% reduction is applied for implementation of Rule 344 (Sumps, Pits, and Well Cellars).			14.23	0.00	57.39

Covered Wastewater Tanks

Efficiency Factor: 85%

Surface Area and Type (emissions in lbs/day)

Description/Name	Number	Area (ft ²)	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 ²)	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

10.3 Fee Calculations

Permit fees for the Blockman Lease are based on equipment rating, pursuant to APCD Rule 210.I.B.2 and Schedule A.

NOTE: However, 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. 08076 - R8

FID: 03306 Blockman Lease / SSID: 02658



Device Fee

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
002884	Oil and Gas Wellheads	A1.a	1.000	58.66	Per equipment	No	20	1.000	1,173.20	0.00	0.00	1,173.20
002883	Valves & Fittings	A1.a	1.000	58.66	Per equipment	No	1	1.000	58.66	0.00	0.00	58.66
100234	Lower Pond Sump	A6	555.072	3.36	Per 1000 gallons	No	1	1.000	1,865.04	0.00	0.00	1,865.04
100235	Oil and Gas Separator	A6	1.000	3.36	Per 1000 gallons	Min	1	1.000	58.28	0.00	0.00	58.28
100236	Oil and Gas Traps	A1.a	1.000	58.66	Per equipment	No	2	1.000	117.32	0.00	0.00	117.32
100237	Weigh Meters	A1.a	1.000	58.66	Per equipment	No	2	1.000	117.32	0.00	0.00	117.32
Device Fee Sub-Totals =									\$3,389.82	\$0.00	\$0.00	
Device Fee Total =												\$3,389.82

Permit Fee

Fee Based on Devices

3,389.82

Fee Statement Grand Total = \$3,389

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	NO _x	ROC	CO	SO _x	PM	PM10
Blockman	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

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

Facility	FID	Units	NO _x	ROC	CO	SO _x	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 Net Emission Increase Since 1990 (FNEI-90)

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	Source NEI		lbs/hr	0.25	1.97	4.63	0.34	0.08	0.08
			lbs/day	6.00	35.99	111.22	8.17	1.64	1.64
			TPQ	0.28	1.51	4.75	0.37	0.08	0.08
			TPY	1.10	7.21	18.98	1.49	0.31	0.31

10.5 Equipment List

Thursday, October 29, 2009

Santa Barbara County APCD – Equipment List

PT-70/Reeval 08076 R8 / FID: 03306 Blockman Lease / SSID: 02658

A PERMITTED EQUIPMENT

1 O&G Wells, Cellars and Unassociated Valves & Flanges

1.1 Oil and Gas Wellheads

<i>Device ID #</i>	002884	<i>Device Name</i>	Oil and Gas Wellheads
<i>Rated Heat Input</i>		<i>Physical Size</i>	20.00 Total Wells
<i>Manufacturer</i>		<i>Operator ID</i>	
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>	Fourteen (14) have well cellars with a surface area of 36 SF each		

1.2 Well Cellars

<i>Device ID #</i>	002885	<i>Device Name</i>	Well Cellars
<i>Rated Heat Input</i>		<i>Physical Size</i>	504.00 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>	Of the 20 wells, 14 have well cellars 6' square for 36 SF each.		

1.3 Valves & Fittings

<i>Device ID #</i>	002883	<i>Device Name</i>	Valves & Fittings
<i>Rated Heat Input</i>		<i>Physical Size</i>	20.00 Active Wells
<i>Manufacturer</i>		<i>Operator ID</i>	
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>	Valves, fittings and flanges, not directly associated with other permitted equipment items, which emit fugitive hydrocarbon emissions		

2 Lower Pond Sump

<i>Device ID #</i>	100234	<i>Device Name</i>	Lower Pond Sump
<i>Rated Heat Input</i>		<i>Physical Size</i>	9894.00 Square Feet Sump Area
<i>Manufacturer</i>		<i>Operator ID</i>	
<i>Model</i>		<i>Serial Number</i>	
<i>Location Note</i>			
<i>Device Description</i>	Covered sump with surface area of 9894 square feet and volume of 13,216 barrels (or 555,072 gallons), used to separate oil from water by utilizing a number of weirs		

3 Oil and Gas Separator

<i>Device ID #</i>	100235	<i>Device Name</i>	Oil and Gas Separator
<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 Description</i>	4 feet diameter by 13 feet height, located at Blockman Well # 12, connected to gas collection system (and vapor recovery)		

4 Oil and Gas Traps

<i>Device ID #</i>	100236	<i>Device Name</i>	Oil and Gas Traps
<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>	Each 3' dia. by 13' height, connected to gas collection system (and vapor recovery)		
<i>Description</i>			

5 Weigh Meters

<i>Device ID #</i>	100237	<i>Device Name</i>	Weigh Meters
<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>	Each 4' dia. by 13' feet height, connected to gas collection system (and vapor recovery)		
<i>Description</i>			

10.6 Well List

Attachment 10.6. Permitted Wells.

Operator Name	Field Name	Lease	Well#	API	Well Stat	Pool	WellType	PWT Stat	S	T	R	Field	Area	NEI
Greka Oil & Gas, Inc.	Cat Canyon	Blochman	1	08301586	Idle	00	OG	Idle	26	9N	33W	128	21	No
Greka Oil & Gas, Inc.	Cat Canyon	Blochman	4	08301587	Active	00	OG	Active	26	9N	33W	128	21	No
Greka Oil & Gas, Inc.	Cat Canyon	Blochman	10	08301592	Idle	00	OG	Idle	26	9N	33W	128	21	No
Greka Oil & Gas, Inc.	Cat Canyon	Blochman	11	08301593	Active	00	OG	Active	26	9N	33W	128	21	No
Greka Oil & Gas, Inc.	Cat Canyon	Blochman	12	08301594	Active	00	OG	Active	26	9N	33W	128	21	No
Greka Oil & Gas, Inc.	Cat Canyon	Blochman	13	08301595	Active	00	OG	Active	26	9N	33W	128	21	No
Greka Oil & Gas, Inc.	Cat Canyon	Blochman	14	08301596	Idle	00	OG	Idle	26	9N	33W	128	21	No
Greka Oil & Gas, Inc.	Cat Canyon	Blochman	15	08301597	Active	00	OG	Active	26	9N	33W	128	21	No
Greka Oil & Gas, Inc.	Cat Canyon	Blochman	16	08301598	Active	00	OG	Active	26	9N	33W	128	21	No
Greka Oil & Gas, Inc.	Cat Canyon	Blochman	18	08301599	Active	00	OG	Active	26	9N	33W	128	21	No
Greka Oil & Gas, Inc.	Cat Canyon	Blochman	20	08301600	Idle	00	OG	Idle	26	9N	33W	128	21	No
Greka Oil & Gas, Inc.	Cat Canyon	Blochman	21	08301601	Idle	00	OG	Idle	26	9N	33W	128	21	No
Greka Oil & Gas, Inc.	Cat Canyon	Blochman	23	08301602	Idle	00	OG	Idle	26	9N	33W	128	21	No
Greka Oil & Gas, Inc.	Cat Canyon	Blochman	24	08301603	Idle	00	OG	Idle	26	9N	33W	128	21	No
Greka Oil & Gas, Inc.	Cat Canyon	Blochman	29	08320116	Idle	00	OG	Idle	26	9N	33W	128	21	No

Greka Oil & Gas, Inc.	Cat Canyon	Blochman	21H	08322238	Active	00	OG	Active	26	9N	33W	128	21	No
Greka Oil & Gas, Inc.	Cat Canyon	Blochman	320H	08322258	Active	00	OG	Active	26	9N	33W	128	21	No
Greka Oil & Gas, Inc.	Cat Canyon	Blochman	300H	08322259	Idle	00	OG	Idle	26	9N	33W	128	21	No
Greka Oil & Gas, Inc.	Cat Canyon	Blochman	315H	08322264	Active	00	OG	Active	26	9N	33W	128	21	Yes
Greka Oil & Gas, Inc.	Cat Canyon	Blochman	305H	08322271	Active	00	OG	Active	26	9N	33W	128	21	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.