



DRAFT

PERMIT TO OPERATE 8036

AND

PART 70 OPERATING PERMIT 8036

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

**CAT CANYON IC ENGINES, 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**

January 2013

-- This page intentionally left blank --

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
1. INTRODUCTION	1
1.1 PURPOSE	1
1.2 FACILITY OVERVIEW.....	3
1.3 EMISSION SOURCES	5
1.4 EMISSION CONTROL OVERVIEW.....	5
1.5 OFFSETS/EMISSION REDUCTION CREDIT OVERVIEW	6
1.6 PART 70 OPERATING PERMIT OVERVIEW.....	6
2. PROCESS DESCRIPTION	8
2.1 PROCESS SUMMARY	8
2.2 SUPPORT SYSTEMS	8
2.3 DETAILED PROCESS EQUIPMENT LISTING	8
3. REGULATORY REVIEW	9
3.1 RULE EXEMPTIONS CLAIMED.....	9
3.2 COMPLIANCE WITH APPLICABLE FEDERAL RULES AND REGULATIONS.....	9
3.3 COMPLIANCE WITH APPLICABLE STATE RULES AND REGULATIONS	11
3.4 COMPLIANCE WITH APPLICABLE LOCAL RULES AND REGULATIONS	111
3.5 COMPLIANCE HISTORY	17
4. ENGINEERING ANALYSIS.....	188
4.1 GENERAL.....	188
4.2 STATIONARY COMBUSTION SOURCES	188
4.3 FUGITIVE HYDROCARBON SOURCES	20
4.4 OTHER EMISSION SOURCES.....	211
4.5 BACT/NSPS/NESHAP/MACT	21
4.6 CEMS/PROCESS MONITORING/CAM	222
4.7 SOURCE TESTING/SAMPLING	22
4.8 PART 70 ENGINEERING REVIEW: HAZARDOUS AIR POLLUTANT EMISSIONS	255
5. EMISSIONS	266
5.1 GENERAL	266
5.2 PERMITTED EMISSION LIMITS - EMISSION UNITS.....	266
5.3 PART 70: HAZARDOUS AIR POLLUTANT EMISSIONS FOR THE FACILITY	27
5.4 PERMITTED EMISSION LIMITS - FACILITY TOTALS.....	27
5.5 PART 70: FEDERAL POTENTIAL TO EMIT FOR THE FACILITY	27
5.6 EXEMPT EMISSION SOURCES/PART 70 INSIGNIFICANT EMISSIONS	27
5.7 NET EMISSIONS INCREASE (NEI) CALCULATION.....	28
6. AIR QUALITY IMPACT ANALYSES	42
6.1 MODELING.....	42
6.2 INCREMENTS.....	42
6.3 MONITORING	42
6.4 HEALTH RISK ASSESSMENT	42
7. CAP CONSISTENCY, OFFSET REQUIREMENTS AND ERCS	433
7.1 GENERAL	43

7.2	CLEAN AIR PLAN	43
7.3	OFFSET REQUIREMENTS.....	43
7.4	EMISSION REDUCTION CREDITS	433
8.	LEAD AGENCY PERMIT CONSISTENCY	44
9.	PERMIT CONDITIONS.....	44
9.A	STANDARD ADMINISTRATIVE CONDITIONS	44
9.B.	GENERIC CONDITIONS.....	48
9.C	REQUIREMENTS AND EQUIPMENT SPECIFIC CONDITIONS	50
9.D	DISTRICT-ONLY CONDITIONS.....	63
10.	ATTACHMENTS.....	688
10.1	EMISSION CALCULATION DOCUMENTATION.....	69
10.2	EQUIPMENT CALCULATION SPREADSHEETS	73
10.3	FEE CALCULATIONS	78
10.4	IDS DATABASE EMISSION TABLES	81
10.5	EQUIPMENT LIST.....	83

LIST OF FIGURES AND TABLES

	<u>PAGE</u>
FIGURE 1.1 LOCATION MAP FOR GREKA CAT CANYON	2
TABLE 3.4-1 GENERIC FEDERALLY-ENFORCEABLE DISTRICT RULES	15
TABLE 3.4-2 UNIT-SPECIFIC FEDERALLY-ENFORCEABLE DISTRICT RULES	166
TABLE 3.4-3 NON-FEDERALLY-ENFORCEABLE DISTRICT RULES	166
TABLE 3.4-4 ADOPTION DATES OF DISTRICT RULES APPLICABLE AT ISSUANCE OF PERMIT.....	166
TABLE 4.2-1 BELL LEASE COMPRESSOR PLANT IC ENGINE EMISSION CONTROLS	20
TABLE 4.2-2 BELL LEASE COMPRESSOR PLANT IC ENGINE EMISSION FACTORS	20
TABLE 4.7-1 CONTROLLED IC ENGINE SOURCE TEST REQUIREMENTS	24
TABLE 4.8-1 HAP EMISSION FACTORS.....	25
TABLE 5.2-1 UNCONTROLLED IC ENGINE OPERATING EQUIPMENT DESCRIPTION	29
TABLE 5.2-2 FUGITIVE HYDROCARBON COMPONENT OPERATING EQUIPMENT DESCRIPTION	30
TABLE 5.2-3 UNCONTROLLED IC ENGINE AND FUGITIVE COMPONENTS EMISSION FACTORS	30
TABLE 5.2-4 UNCONTROLLED IC ENGINE SHORT TERM EMISSION LIMITS.....	31
TABLE 5.2-5 UNCONTROLLED IC ENGINE LONG TERM EMISSION LIMITS.....	32
TABLE 5.2-6 FUGITIVE HYDROCARBON COMPONENT SHORT TERM EMISSION LIMITS	33
TABLE 5.2-7 FUGITIVE HYDROCARBON COMPONENT LONG TERM EMISSION LIMITS.....	33
TABLE 5.2-8 CONTROLLED IC ENGINE OPERATING EQUIPMENT DESCRIPTION	34
TABLE 5.2-9 CONTROLLED IC ENGINE EMISSION FACTORS	34
TABLE 5.2-10 CONTROLLED IC ENGINE SHORT TERM EMISSION LIMITS	35
TABLE 5.2-11 CONTROLLED IC ENGINE LONG TERM EMISSION LIMITS	35
TABLE 5.3-1 HAP EMISSION FACTORS.....	36
TABLE 5.3-2 FACILITY HAP EMISSIONS	37
TABLE 5.3-3 STATIONARY SOURCE HAP EMISSIONS	38
TABLE 5.4-1 TOTAL PERMITTED FACILITY EMISSIONS	39
TABLE 5.5-1 FEDERAL POTENTIAL TO EMIT	40
TABLE 5.6-1 ESTIMATED PERMIT EXEMPT EMISSIONS	40
TABLE 5.7-1 ICE FACILITY NET EMISSIONS INCREASE (NEI-90).....	41
TABLE 9.C.1-1 COMPRESSOR PLANT CONTROLLED IC ENGINES	51
TABLE 9.C.1-2 HEAT INPUT LIMITS FOR COMPRESSOR PLANT CONTROLLED IC ENGINES	51
TABLE 9.C.3-1 FUGITIVE HYDROCARBON EMISSION COMPONENTS	58
TABLE 10.1-1 AVERAGE EXHAUST POLLUTANT MOLECULAR WEIGHTS.....	70
TABLE 10.1-2 CALCULATED K-NGLB AND K-NGG VALUES	70
TABLE 10.1-3 FUGITIVE EMISSION FACTORS FOR OIL AND GAS FACILITIES USING THE CLP METHOD....	71
TABLE 10.2-1 UNCONTROLLED ICES PERMITTED AT THE GREKA CAT CANYON STATIONARY SOURCE... 75	75
TABLE 10.2-2 FUGITIVE HYDROCARBON EMISSION CALCULATIONS – CLP METHOD	76
TABLE 10.3-1 ICE FACILITY EQUIPMENT FEE BASED CHARGES.....	79
TABLE 10.4-1 PERMITTED POTENTIAL TO EMIT (PPTE)	81
TABLE 10.4-2 GREKA CAT CANYON STATIONARY SOURCE - FACILITY POTENTIAL TO EMIT (FPTE).....	81
TABLE 10.4-3 STATIONARY SOURCE NET EMISSION INCREASE SINCE 1990 (FNEI-90)	82

ABBREVIATIONS/ACRONYMS

AP-42	USEPA's <i>Compilation of Emission Factors</i>
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
District	Santa Barbara County Air Pollution Control District
dscf	dry standard cubic foot
EU	emission unit
°F	degree Fahrenheit
gal	gallon
gr	grain
HAP	hazardous air pollutant (as defined by CAAA, Section 112(b))
H 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
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
SCAQMD	South Coast Air Quality Management District
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 (District) 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 District's Rules and Regulations.

Santa Barbara County is designated as an ozone non-attainment area for the state ambient air quality standards. The County is also designated a non-attainment area for the state PM₁₀ ambient air quality standard.

- 1.1.2 Part 70 Permitting: This is a combined permitting action that covers both the Federal Part 70 permit (*Part 70 Operating Permit No. 8036*) as well as the State Operating Permit (*Permit to Operate No. 8036*). The initial Part 70 permit for the ICE Facility was issued November 1, 2000 in accordance with the requirements of the District's Part 70 operating permit program. This permit is the sixth renewal of the Part 70 permit, and may include additional applicable requirements. This permit also incorporates any Part 70 minor modifications since the last renewal and is being issued as a combined Part 70 and District reevaluation permit

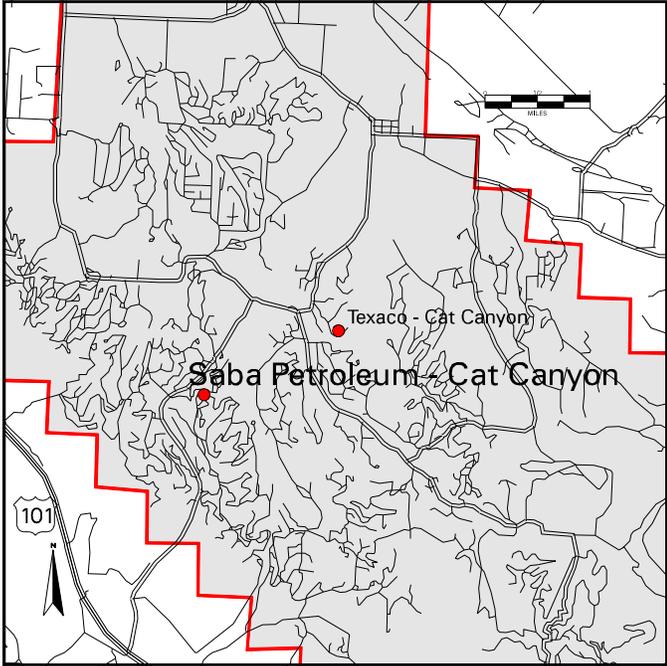
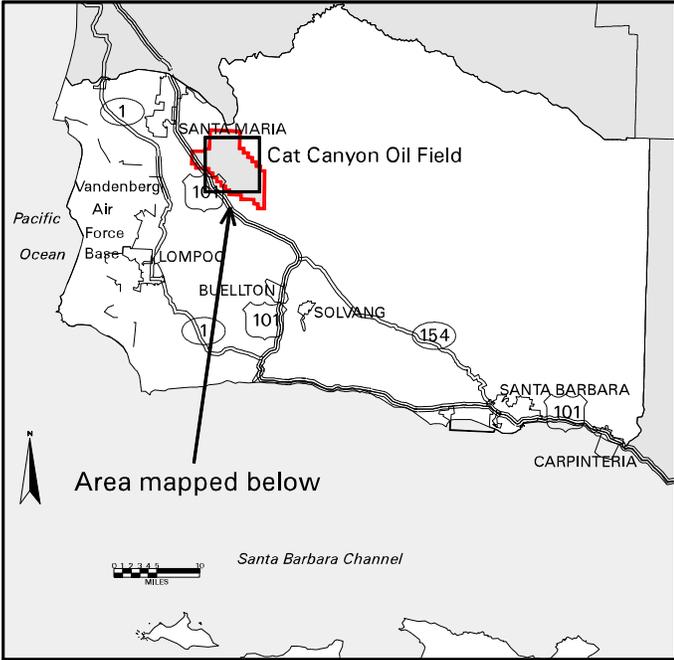
IC Engine Facility (FID 3831) is a part of the Greka South Cat Canyon stationary source (SSID 2658), which is a major source for NO_x and CO. Conditions listed in this permit are based on federal, state or local rules and requirements.

Sections 9.A, 9.B, and 9.C of this permit are enforceable by the District, 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 "District-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. Second, 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.

- 1.1.3 Tailoring Rule: This reevaluation incorporates greenhouse gas emission calculations for the stationary source. On January 20, 2011, the District revised Rule 1301 to include greenhouse gases (GHGs) that are "subject to regulation" in the definition of "Regulated Air Pollutants". District Part 70 operating permits are being updated to incorporate the revised definition.

Figure 1.1 Location Map for Greka South Cat Canyon



1.2 Facility Overview

1.2.1 Facility Overview: Greka Oil and Gas, Inc. (“Greka”) is the owner and operator of the Cat Canyon IC Engines Facility (termed hereafter as “IC Engines Facility”), located at 6527 Dominion Road, Santa Maria, California 93454. This facility consists of multiple internal combustion engines operating on the leases within the Cat Canyon South Stationary Source. These leases are 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 District 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.

The IC Engines Facility was operational in September 1979 when its owner/operator Union Oil of California applied to the District for its first operating permit (ATC/PTO 4041). An operating permit was issued to Union Oil by the District in October 1979. In June, 1993 the ownership of the Cat Canyon stationary source including the IC Engines Facility was transferred from Unocal to Saba Petroleum Corporation doing business as D&S Industrial Services. In January 2000, Greka assumed ownership of the facility. In January 2013, the owner and operator of one IC engine from this facility were transferred from Greka to ERG Resources.

1.2.2 Stationary Source Overview: Prior to August 2002, the Greka Cat Canyon Stationary Source was a Part 70 source consisting of the Bell, Blochman, Dominion, UCB, 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 Part 70 Cat Canyon Stationary Source at that time. In November 2008, Greka sold two of the leases within the stationary source; the California Lease and United California Lease. As a result of this sale, the stationary source configuration was reorganized based on the stationary source definition in District 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, Blochman, Dominion, UCB, Palmer-Stendl, and the IC Engines Leases. Following this reorganization, only the South Cat Canyon Stationary Source (SSID 2658) remained a Part 70 source. In January 2013 Greka transferred the UCB Lease, Dominion Lease, and one IC engine from the Cat Canyon IC Engine Facility to ERG Resources.

The stationary source now consists of the following facilities:

- Bell Lease (FID 3211)
- Blochman Lease (FID 3306)
- Palmer Stendl Lease (FID 3307)
- Cat Canyon IC Engines (FID 3831)

¹ District Rule 102, Definition: “Northern Zone”

Oil and gas well production at the Greka South Cat Canyon stationary source, is produced by wells at the Bell, Blochman and Palmer-Stendl 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 IC engines at Greka South Cat Canyon stationary source comprise the prime mover force for the following systems:

- Oil & Gas Production well pumps
- Gas compressors
- Wastewater injection pumps
- Two electric generators (both of these engines are currently out of service)

Operation of these IC engines and their emissions are addressed by the District in this permit. Any of these engines may be replaced by electric motors after notification to the District.

1.2.2 Facility New Source Review Overview: The following is the permit history for this facility.

PERMIT	FINAL ISSUED	PERMIT DESCRIPTION
TRN O/O 8036	06/01/1993	Saba Petroleum Corporation, doing business as D&S Industrial Services, applied to the District and obtained a change of ownership status for this lease and several other former Unocal properties.
PTO 9146	10/18/1994	Lean-burn emission control on one Clark HRA-8 and two Clark HRA-4 IC engines operating at the Bell Lease Compressor Plant. The modification reduced NO _x emissions but increased CO emissions from these engines.
ATC/PTO 9610	12/20/1996	Install and operate four new rich burn, semi-portable, NSCR catalyst-equipped IC engines at various locations of the stationary source. Two of these, namely a Waukesha 6RLZ (410 hp) and a Caterpillar G-342 NAHCR (225 hp) generated power to drive oil pumps and the third, a Waukesha F-1197G WAK powered an oil well pump.
PTO 8150	01/15/1997	Reflect the operational changes in seven (7) IC engines. Effective July 1995, these engines were no longer required to provide emission reduction credits (ERC's) to Nuevo's Point Pedernales Project. Each of these engines are also derated, using orifice plates, to obtain exemptions from District Rule 333 emission standards.
ATC 9975/9975-01	10/12/1998	Install and operate a new, three-way catalyst-equipped compressor IC engine. This engine replaces an existing Clark HRA-8 main gas compressor engine. The ATC also limits the operating hours for two Clark HRA-4 IC engines and exempts these from the Rule 333 emission standards. An ERC was created based on this ATC.

PERMIT	FINAL ISSUED	PERMIT DESCRIPTION
ATC 10133	05/19/1999	Modify the ROC and CO emission limits imposed on three of its NSCR catalyst-equipped IC engines.
TRN O/O 8036-02	02/29/2000	Greka obtained the ownership of the IC engine facility from Saba Petroleum.
ATC/PTO 10919	10/10/2002	Allowed Greka to operate the Waukesha 6LRZ IC engine at the Bell Lease Compressor Plant. The engine replaced the previously installed Waukesha F3521GSI compressor engine unit. The Waukesha F3521GSI compressor engine unit will remain on permit should Greka decide to use this unit at a later date. This permit was cancelled due to the failure of the Waukesha 6LRZ and subsequent removal from the Cat Canyons stationary source.
ATC 11103	05/12/2003	Allowed Greka to operate the Caterpillar G-342 IC engine at the Bell Lease Compressor Plant. The engine replaced the previously installed Waukesha F3521GSI compressor engine unit. The Waukesha F3521GSI compressor engine unit will remain on permit should Greka decide to use this unit at a later date.
TRN O/O 8036-R3	1/7/2013	Transferred District Device #110036 to ERG Resources Cat Canyon Central

1.3 Emission Sources

Air pollution emissions from the IC engines are the result of fuel combustion. A minor fraction, consisting of ROC emissions, comes from piping components, such as valves and flanges. Section 4 of the permit provides the District's engineering analysis of these emission sources. Section 5 of the permit describes the allowable emissions from each permitted emissions unit and the entire IC engine facility. It also lists the potential emissions from non-permitted emission units.

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

1.4 Emission Control Overview

All 11 uncontrolled IC engines operating at the Cat Canyon stationary source either have nameplate ratings less than 50 bhp or have been derated through the use of orifice plates to less than 50 bhp. Consequently, these are not subject to the NO_x, CO, or ROC emission standards of District Rule 333.

The two controlled IC engines use Non-Selective Catalytic Reduction (NSCR) and Air/Fuel Ratio (AFR) controls to reduce NO_x, CO, and ROC emissions. Neither of these engines are operating at this time.

Other controls include:

- Use of scrubber units to reduce the hydrogen sulfide content of the field gas to the NSCR-controlled IC engines to below 239 ppmvd [Re: ATC's 9610 and 9975]; also facilitates compliance with Rule 303 and 310.
- A Fugitive Hydrocarbon Inspection & Maintenance (I&M) program for detecting and repairing leaks of hydrocarbons from piping components at the Compressor Plant only, consistent with the requirements of Rule 331, to reduce ROC emissions by approximately 80 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). However, older equipment that was replaced by lower emitting equipment at Bell Lease facility's Compressor Plant provided ERCs, which must be maintained by ICE units permitted to operate at the Bell Lease Compressor Plant as described in Section 7.3 of this permit, DOI #006, and associated modifications to the DOI. This stationary source does not exceed District Rule 802 offset thresholds for any pollutant.

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 District Rules, all conditions in the District-issued Authority to Construct permits, and all conditions applicable to major sources under federally promulgated rules and regulations. All these requirements are enforceable by the public under CAAA. (*See Tables 3.4-1 and 3.4-2 for a list of federally enforceable requirements*)
- 1.6.2 Insignificant Emissions Units: Insignificant emission units are defined under District 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. The only insignificant emissions associated with this facility are solvent and surface coating operations used during maintenance operations.
- 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 which was in effect as of August 7, 1980, 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 District. 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 by requiring 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.
- 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

- 2.1.1 Uncontrolled IC Engines: A total of 11 uncontrolled reciprocating IC engines located at the South Cat Canyon stationary source operate at the three associated leases to provide power to pumps and injectors. These are fired on gaseous fuel (field gas). All of these engines are rated (or de-rated) to only operate below 50 bhp.
- 2.1.2 Controlled IC Engines: A Caterpillar G-342 controlled IC engine (225 bhp) is used to generate electricity on-site. This engine is equipped with Non-Selective Catalytic Reduction ("NSCR") and fuel/air ratio control systems to reduce NO_x, ROC, and CO emissions from the engine exhaust. As of this permitting action, the Caterpillar controlled engine is not in use, but will remain on the permit.

Complete descriptions of the non-IC engine operating processes at Greka South Cat Canyon stationary source are provided in the other Cat Canyon facility Part 70 permits.

2.2 Support Systems

A 500 gallon tank for liquefied propane is located at the Compressor Plant to service plant vehicles. These vehicles provide transportation or other services.

2.3 Detailed Process Equipment Listing

Refer to Attachment 10.5 for the Equipment List.

3. Regulatory Review

This Section identifies the federal, state and local rules and regulations applicable to the IC Engines Facility.

3.1 Rule Exemptions Claimed

District Rule 202 (Exemptions to Rule 201): Greka requested one (1) exemption under this rule. An exemption from permit, however, does not necessarily grant relief from any applicable prohibitory rule. The following exemptions were approved by the District:

- Section 202.V.8 for one 500 gallon tank for liquefied propane
- *Note for Solvents*. Per Rule 202.U, specified solvent use for operations listed in this section of the rule are exemption from permit. An exemption from permit, however, does not necessarily grant relief from any applicable prohibitory rule unless specifically exempted by that prohibitory rule.

District Rule 333 (Control of Emissions from Reciprocating Internal Combustion Engines): Twelve of the thirteen IC engines subject to this permit either have nameplate ratings less than 50 bhp or have been derated, through the use of orifice plates, to less than 50 bhp. Therefore, these engines are currently exempt from Rule 333 provisions.

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)): The IC Engines Facility was constructed and permitted prior to the applicability of these regulations. However, all permit modifications as of July, 1979 are subject to District NSR requirements. Compliance with District 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 to NSPS.
- 3.2.3 40 CFR Part 61 (NESHAP): The uncontrolled and controlled engines are not subject to requirements under 40 CFR 61.
- 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, Blochman, and Palmer-Stendl Leases were exempt from the requirements of this MACT based on its black oil production. The MACT exemption holds for the South Cat Canyon stationary source, since black oil is produced at each of the leases comprising the source. The Greka

South Cat Canyon stationary source is subject to general recordkeeping requirements as defined in condition 9.B.13.

- 3.2.5 40 CFR Part 63 {MACT Standards}: On August 27, 2003, EPA promulgated Subpart EEEE, a National Emission Standards for Hazardous Air Pollutants (NESHAPS) for Organic Liquids Distribution (Non-Gasoline). The District has determined that none of the permitted facilities within the South Cat Canyon stationary source are subject to this MACT.
- 3.2.6 40 CFR Part 63 {Proposed MACT Standards}: On March 21, 2011, EPA promulgated revisions to Subpart JJJJJ, a National Emission Standards for Hazardous Air Pollutants (NESHAPS) for Industrial, Commercial, and Institutional Boilers at Area Sources. Greka has existing small, gaseous fueled heaters (under 10.000 MMBtu/hr) at this facility. The Subpart exempts gas-fired boilers. Thus, no JJJJJ requirements apply.
- 3.2.6 Subpart ZZZZ {NESHAP - Stationary Internal Combustion Engines}: The revised National Emission Standard for Hazardous Air Pollutants (NESHAP) for reciprocating internal combustion engines (RICE) was published in the Federal Register on January 18, 2008. An affected source under the NESHAP is any existing, new, or reconstructed stationary RICE located at a major source or area source.

Existing non-emergency non-black start compression ignition RICE rated less than 300 bhp must comply with the applicable emission and operating limits by no later than May 3, 2013. All uncontrolled engines on this permit are subject to this requirement. The following operating requirements apply:

- (1) Change the oil and filter every 1,000 hours of operation or annually, whichever comes first;
- (2) Inspect the air cleaner every 1,000 hours of operation or annually, whichever comes first;
- (3) Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

Existing non-emergency, non-black start, four stroke, rich burn RICE rated less than 500 bhp must comply with the applicable emission and operating limits. The non-operational Caterpillar G-942 (Device #: 006466) shall be subject to the following requirements if it is returned to service:

- (1) Change the oil and filter every 1,440 hours of operation or annually, whichever comes first;
- (2) Inspect the spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary;

- (3) Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.

3.2.7 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.

3.2.8 40 CFR Part 70 {Operating Permits}: This Subpart is applicable to IC Engines Facility. Table 3.4-1 lists the federally enforceable District promulgated rules that are “generic” and apply to IC Engines Facility. Table 3.4-2 lists the federally enforceable District promulgated rules that are “unit-specific”. These tables are based on data available from the District’s administrative files and from Greka’s Part 70 application for this permit. Table 3.4-4 includes the adoption dates of these rules.

In its Part 70 renewal permit application (Form I), Greka certified compliance with all existing District 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 District. These provisions are District-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 ICE Facility are required to conform to these standards. Compliance will be assessed through onsite inspections. These standards are District-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 District promulgated rules that apply to the ICE facility. Table 3.4-4 lists the adoption date of all rules applicable to this permit at the date of this permit’s issuance.

3.4.2 Rules Requiring Further Discussion: This section provides a more detailed discussion regarding the applicability and compliance of certain rules.

The following is a rule-by-rule evaluation of compliance for the ICE Facility:

Rule 201 – Permits Required: This rule requires that permitted equipment be present at the stationary source at all times, unless they are temporarily off-site for maintenance or rebuilding. Failure to make this showing at the time of permit reevaluation is grounds for removing the equipment from permit.

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 District rules and regulations. To the best of the District's knowledge, Greka is operating in compliance with this rule.

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

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: The Greka South Cat Canyon stationary source is considered a Northern Zone source. This rule prohibits the discharge into the atmosphere from any source particulate matter in excess of 0.3 gr/scf. Emission units subject to this rule include the internal combustion engines. 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 or 0.03 ppmv averaged over 1 hour. No measured data exists to confirm compliance with this rule, however, all produced gas used by the ICE facility is sweet. As a result, it is expected that compliance with this rule will be achieved.

Rule 311 - Sulfur Content of Fuels: This rule limits the sulfur content of fuels combusted by the ICE Facility to 50 gr/100 scf (calculated as H₂S) {or 796 ppmvd}. Note that a more stringent limit {239 ppmvd} is in effect for gaseous fuel used by the *controlled* IC engines and IC engines operated at the Bell Lease Compressor Plant. All IC engines within the Greka South Cat Canyon stationary source fire on sweet gas (less than 6 ppmvd) at this time, thus they are expected to be in compliance with the gaseous fuel limit as determined by fuel (field gas) analysis documentation. The *Fuel Gas Sulfur and HHV Monitoring Plan* identifies sampling locations and procedures for combustion units permitted on the Greka Cat Canyon stationary source.

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

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

Rule 323 - Architectural Coatings: This rule sets standards for the application of surface coatings. The primary coating standard that will apply to the lease is for Industrial Maintenance Coatings that have a limit of 250 gram ROC per liter of coating, as applied. Greka is required to comply with the administrative requirements under Section F of the Rule for each container on the lease.

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

Rule 330 - Surface Coating of Metal Parts and Products: This rule sets standards for many types of coatings applied to metal parts and products. In addition to the ROC standards, this rule sets operating standards for application of the coatings, labeling and recordkeeping. Compliance shall be based on site 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 District-approved *Fugitive I&M Plan* (March 2005), facility inspection by District personnel using an organic vapor analyzer and analysis of operator records.

Rule 333 - Control of Emissions from Reciprocating Internal Combustion Engines: This rule applies to all engines with a rated brake horsepower of 50 or greater that are fueled by liquid

or gaseous fuels. The Caterpillar G-342 engine, operated in a non-cyclic rich-burn mode, is the only engine subject to the provisions of Section D.1 (NO_x, ROC and CO emission limits of 50, 250, and 4500 ppmvd at 15 percent O₂). Rule 333 was revised June 19, 2008, however the applicable emission limits for this ICE did not change. The only new requirement was the submittal of an *ICE Inspection and Maintenance Plan*. This plan was submitted and approved by the District in November 2009.

Due to NSR permit conditions, these engines are restricted to emission limits that are much more stringent than the provisions of Section D.1 of Rule 333 (revised 6/19/2008). See Section 9.C.1, Table C.1-2 for a summary of these emission limits.

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 recordkeeping of adhesive and sealant materials used in addition to site inspections. 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 ICE Facility.

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 District in April 2004.

Rule 810 – Federal Prevention of Significant Deterioration: This rule was adopted January 20, 2011 to incorporate the federal Prevention of Significant Deterioration rule requirements into the District's rules and regulations. Future projects at the facility will be evaluated to determine whether they constitute a new major stationary source or a major modification.

Table 3.4-1 Generic Federally-Enforceable District 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	Addition of new equipment of modification to existing equipment.
<u>RULE 205</u> : Standards for Granting Permits	All emission units	Emission of pollutants
<u>RULE 206</u> : Conditional Approval of Authority to Construct or Permit to Operate	All emission units	Applicability of relevant Rules
<u>RULE 207</u> : Denial of Applications	All emission units	Applicability of relevant Rules
<u>RULE 208</u> : Action on Applications – Time Limits	All emission units. Not applicable to Part 70 permit applications.	Addition of new equipment or modification to existing equipment.
<u>RULE 212</u> : Emission Statements	All emission units	Administrative
<u>RULE 301</u> : Circumvention	All emission units	Any pollutant emission
<u>RULE 302</u> : Visible Emissions	All emission units	Particulate matter emissions
<u>RULE 303</u> : Nuisance	All emission units	Emissions that can injure, damage or offend.
<u>RULE 304</u> : PM Concentration – North Zone	Each PM source	Emission of PM in effluent gas
<u>RULE 309</u> : Specific Contaminants	All emission units	Combustion contaminants
<u>RULE 311</u> : Sulfur Content of Fuel	All combustion units	Use of fuel containing sulfur
<u>RULE 322</u> : Metal Surface Coating Thinner and Reducer	Emission units using solvents	Solvent used in process operations.
<u>RULE 323</u> : Architectural Coatings	Paints used in maintenance and surface coating activities	Application of architectural coatings.
<u>RULE 324</u> : Disposal and Evaporation of Solvents	Emission units using solvents	Solvent used in process operations.
<u>RULE 330</u> : Surface Coating of Metal Parts	Emission units using metal parts coating	Surface coating used in maintenance operations.
<u>RULE 353</u> : Adhesives and Sealants	Emission units using adhesives and sealants	Adhesives and sealants used in process operations.
<u>RULE 505.A, B1, D</u> : Breakdown Conditions	All emission units	Breakdowns where permit limits are exceeded.
<u>RULE 603</u> : Emergency Episode Plans	Stationary sources with PTE greater than 100 TPY	Greka – Cat Canyon is a major source.
<u>RULE 810</u> : Federal Prevention of Significant Deterioration	New or modified emission units	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 District Rules

Unit-Specific Requirements	Affected Emission Units	Basis for Applicability
<u>RULE 331</u> : Fugitive Emissions Inspection & Maintenance	All components (valves, flanges, seals, compressors and pumps) used to handle oil and gas	Components emit fugitive ROCs.
<u>RULE 333</u> : Control of Emissions from Reciprocating Internal Combustion Engines	Caterpillar G-342	All ICE's with bhp greater than 50 hp

Table 3.4-3 Non-Federally-Enforceable District 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 District Rules Applicable at Issuance of Permit

Rule No.	Rule Name	Adoption/Revision Date
Rule 101	Compliance by Existing Installations: Conflicts	June 1981
Rule 102	Definitions	June 21, 2012
Rule 103	Severability	October 23, 1978
Rule 201	Permits Required	June 18, 2008
Rule 202	Exemptions to Rule 201	June 21, 2012
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 ATC or PTO	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 311	Sulfur Content of Fuels	October 23, 1978
Rule 317	Organic Solvents	October 23, 1978
Rule 321	Solvent Cleaning Operations	June 21, 2012
Rule 322	Metal Surface Coating Thinner and Reducer	October 23, 1978
Rule 323	Architectural Coatings	November 15, 2001
Rule 324	Disposal and Evaporation of Solvents	October 23, 1978
Rule 331	Fugitive Emissions Inspection and Maintenance	December 10, 1991
Rule 333	Control of Emissions from Reciprocating Internal Combustion Engines	June 19, 2008
Rule 353	Adhesives and Sealants	June 21, 2012
Rule 360	Emissions from Oxides of Nitrogen from Large Water Heaters and Small Boilers	October 17, 2002

Rule No.	Rule Name	Adoption/Revision Date
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)	September 20, 2010
Rule 1001	National Emission Standards for Hazardous Air Pollutants (NESHAPS)	October 23, 1993
Rule 1301	General Information	January 20, 2011
Rule 1302	Permit Application	November 9, 1993
Rule 1303	Permits	January 18, 2001
Rule 1304	Issuance, Renewal, Modification and Reopening	January 18, 2001
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 District's Administrative file.

- 3.5.1 Facility Inspections: Since the prior permit renewal, facility inspections were conducted on December 23, 2009, April 2, 2010, August 13, 2010, July 29, 2011, and November 1, 2012. These inspections resulted in a total of two NOV's which can be seen listed below.

The most recent facility inspection was only able to document 13 permitted uncontrolled engines present at the stationary source. Pursuant to Rule 201.J, engines that are not accounted for have been removed from permit during this reevaluation.

- 3.5.2 Violations: Two violations were issued to Greka for the IC Engine Facility since the last permit renewal.

VIOLATION NUMBER	DATE ISSUED	DESCRIPTION
10250	11/01/2012	Engines in use that were depermitted, Rule 201 Violation.
10251	11/01/2012	No identification plate on Engine Rule 206 Violation as per PTO 08036-R8, 9D "APCD-Only Conditions", D.12.a(vi).

- 3.5.3 Variances: No variances are reported by Greka for the IC Engine Facility since the last permit renewal.

- 3.5.4 Hearing Board Actions: There are no significant historical Hearing Board actions.

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
- Rule applicability for each emissions unit and process
- 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 District's document titled "*VOC/ROC Emission Factors and Reactivities for Common Source Types*" dated 7/13/98 (ver. 1.1) was used to determine non-methane, non-ethane fraction of THC.

4.2 Stationary Combustion Sources

This IC engine facility consists of gas-fired piston internal combustion engines which have been categorized into the following groups for determining emissions:

- 4.2.1 Uncontrolled IC Engines: This category includes 11 piston-type internal combustion engines which are fired on gaseous fuel (field gas) and provide power to pumps, compressors, and other equipment. Table 5.2-1 and Table 10.2-1 of this permit contains a listing of these engines, the engine specifications, the operating limitations, and the properties of the fuel burned in the engines. All of these engines either have nameplate ratings less than 50 bhp or have been de-rated to less than 50 bhp through the use of orifice plates.

$$ER = [(EF \times BHP \times BSFC \times LCF \times HPP) \div 10^6]$$

Where:

ER =	emission rate (lb/period)
EF =	pollutant specific emission factor (lb/MMBtu)
BHP =	engine rated max brake-horsepower (bhp)
BSFC =	engine brake specific fuel consumption (Btu/bhp-hr)
LCF =	fuel correction factor, LHV to HHV
HPP =	operating hours per time period (hrs/period)

The emission factor is an energy based value using the higher heating value (HHV) of the fuel. As such, energy based BSFC value must also be based on the HHV. Manufacturer BSFC data are typically based on the lower heating value (LHV) data and thus require a conversion (LCF) to the HHV basis. The LCF value is about 1.10. Volume or mass based BSFC data do not need any conversions.

Listed below are the emission factors "EF" used specifically for these IC engines. The references providing the basis for these factors are also listed:

$$\begin{aligned}\text{NO}_x &= 1.905 \text{ lb/MMBtu}^{(a)} \\ \text{ROC} &= 0.105^{(a, f)} \\ \text{CO} &= 1.60^{(d)} \\ \text{SO}_x &= 0.169 * (\text{S}) / \text{HHV}^{(b, e)} \\ \text{PM} &= 0.01^{(c)} \\ \text{PM}_{10} &= 0.01^{(c, g)}\end{aligned}$$

Where:

- (a) District Hearing Board Action specified factors for gaseous-fired engines, May 2, 1990.
- (b) Mass balance; S (*Re: District-70, Section E.2*) = total Sulfur in ppmv = 796 ppmvd
- (c) NEDs factor, (8/88)
- (d) AP-42, Section 3.2, Tables 3.2-1 and 3.2-4 (Dated 10/92)
- (e) HHV = fuel high heating value = 1100 Btu/scf
- (f) Non-methane, non-ethane ROC/THC mass fraction per 04/02/97 District memorandum.
- (g) $\text{PM}_{10}/\text{TSP}$ mass ratio assumed to be 1.00.

The BSFC is unique for each make/model engine. The BSFC numbers are based on values used in past reevaluations of this permit.

Controlled IC Engine: The Caterpillar G-342 is a rich-burn, semi-portable, internal combustion combustion engine ("ICE") at the Bell Lease Compressor Plant. This ICE was previously permitted under ATC/PTO 9610 to power various types of oil production equipment. It is equipped with Non-selective Catalytic Reduction ("NSCR"), and fuel/air ratio control systems to systems to reduce the exhaust NO_x , ROC, and CO emissions described in

- 4.2.2 Table 4.2-1. The emissions from this engine are subject, at a minimum, to the emission limitations of APCD Rule 333, §D.1, and the NO_x , ROC, and CO limitations of the Waukesha F3521GSI unit per ATC/PTO 11003. The NO_x emission factor has been reduced to 0.135 lb/MMBtu and the CO emission factor has been reduced to 0.674 lb/MMBtu, per Table 4.2-2. These emission factors correspond to 36 ppmv NO_x corrected to 15% O_2 and 299 ppmv CO corrected to 15% O_2 . The SO_x emission factor is based on a maximum sulfur content of 239 ppmv for fuel gas.

Table 4.2-1 Bell Lease Compressor Plant IC Engine Emission Controls

IC Engine #	NSCR Catalyst ² Make & Model & Rating	Fuel /Air Ratio Controller ³ Make & Model
# 6466: Caterpillar G-342 225 bhp @ 1,300 RPM	Johnson-Matthey; Model MX-20; Rated to 866 ACFM	Blackhawk Services: Model # BH-201 or Altronic Model # APC-100

As before, the emissions calculation methodology is the same for this IC engine, namely:

$$ER = [(EF \times BHP \times BSCF \times LCF \times HPP) \div 10^6]$$

Where:

- ER = emission rate (lb/period)
- EF = pollutant specific emission factor (lb/MMBtu)
- BHP = engine rate d max brake-horsepower (bhp)
- BSCF = engine brake specific fuel consumption (Btu/bhp-hr)
- LCF = fuel correction factor, LHV to HHV = 1.10
- HPP = operating hours per time period (hrs/period)

The controlled emission factors "EF" for the controlled engines are listed in Table 4.2-2:

Table 4.2-2 Bell Lease Compressor Plant IC Engine Emission Factors

District Device ID #	IC Engine Description	NO _x (lb/MMBtu)	ROC (lb/MMBtu)	CO (lb/MMBtu)	SO ₂ (lb/MMBtu)	PM ₁₀ (lb/MMBtu)	GHG (lbCO ₂ e/MMBtu)
6466	Caterpillar G-342	0.135	0.080	0.674	0.037	0.009	117.00

In order to ensure that the catalyst is effectively operating at all times, the use of an air/fuel ratio controller is required for the engine. These calculations will be implemented when the engine is brought back into service [Re: District ATC/PTO 9610]

² NSCR Catalysts: The NSCR is operated with the engine exhaust entering unit at fuel-rich to stoichiometric air/fuel ratios (i.e., oxygen content @ 0.70 to 0.20 %) as maintained by the fuel/air ratio controller.

³ Fuel/Air Ratio Controllers: Each adjusts the engine's fuel pressure regulator based upon the conditioned signal (i.e., millivolts) received from an exhaust oxygen sensor mounted in the inlet of the NSCR catalyst.

4.3 Fugitive Hydrocarbon Sources

- 4.3.1 General: Emissions of reactive organic compounds from piping components (e.g., valves and connections), and pressure relief/vacuum valves at the Bell Lease Compressor Plant have been quantified using emission factors pursuant to District P&P 6100.061 (*Determination of Fugitive Hydrocarbon Emissions at Oil and Gas Facilities Through the Use of Facility Component Counts - Modified for Revised ROC Definition*).

The component leak-path (clp) was counted consistent with P&P 6100.061. This leak-path count is not the same as the “component” count required by District Rule 331. Both gas/light liquid and oil side components are in service at this facility.

The component leak path counts are based on information presented in Greka’s September 18, 1998 submittal. The calculation methodology for the fugitive emissions is:

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

Where:

ER	= emission rate (lb/period)
EF	= ROC emission factor (lb/clp-day)
CLP	= component leak-path (clp)
CE	= control efficiency
HPP	= operating hours per time period (hrs/period)

An emission control efficiency of 80 percent is credited to components subject to the Rule 331 LDAR requirements. Detailed emission calculations for fugitive emissions are shown in Attachments 10.1 and 10.2.

4.4 General Emission Sources

The following is a brief discussion of other emission sources at the ICE Facility:

- 4.4.1 Surface Coating: Surface coating operations typically include normal touch up activities. Emissions are determined based on mass balance calculations assuming all solvents evaporate into the atmosphere. Emissions of PM/PM₁₀ from paint over-spray are not calculated due to the lack of established calculation techniques.
- 4.4.2 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.

4.5 BACT/NSPS/NESHAP/MACT

- 4.5.1 Uncontrolled IC Engines: The IC engines listed in this permit are not subject to any best available control technology (BACT) or NSPS. This equipment is subject to NESHAP Subpart ZZZZ.
- 4.5.2 Controlled IC Engines: The Caterpillar G-342 engine at the Bell Lease Compressor Plant is not subject to BACT. The engine does not trigger federal NSPS, but is subject to NESHAP Subpart ZZZZ. [Re: District ATC/PTO 9610]
- 4.5.3 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 this IC Engine permit, is still exempt from the requirements of this MACT.

4.6 CEMS/Process Monitoring/CAM

- 4.6.1 CEMS: There are no continuous emission monitors (CEMS) operating at this facility.
- 4.6.2 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, and hydrogen sulfide analyzers. Once these process monitors are in place, it is important that they be well maintained and calibrated to ensure that the required accuracy and precision of the devices are within specifications. At a minimum, the following process monitors will be required to be calibrated and maintained in good working order:
- Hour meters (totalizing, non-resettable for the two 'controlled emissions' IC engines)
 - Fuel flow meters (dedicated the two 'controlled emissions' IC engine)
 - Electronic Air/Fuel Ratio Controller (for the two 'controlled emissions' IC engines)

To implement the above calibration and maintenance requirements the District-approved *Fuel Use Monitoring and Process Monitor Calibration and Maintenance Plan* (April 2004) addresses manufacturer recommended maintenance and calibration schedules. The plan specifically identifies the acceptable operational set points for the A/F ratio controller which shows the engines' emissions to be in compliance. Where manufacturer guidance is not available, the recommendations of manufacturers of comparable equipment, and good engineering judgment is utilized.

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

4.7 Source Testing/Sampling

Source testing and sampling are required in order to ensure compliance with permitted emission limits, prohibitory rules, control measures and the assumptions that form the basis of this operating permit.

4.7.1 Uncontrolled IC Engines: None of the twelve uncontrolled IC engines require source testing. However, the fuel used by the engines is required to be sampled and analyzed, as listed below. Duplicate samples are required:

- Fuel Gas: Sample to be taken from the fuel flow inlet line to the engines. Analysis for high heating value (HHV) shall be measured quarterly, annually for total sulfur, and monthly for hydrogen sulfide. [Note: Under a County Land Use permit, Greka must keep the gas pipeline fuel S level below 29 ppmvd; Greka continuously monitors its fuel line, using District-approved methods (Re: District ATC/PTO 9412) to comply with this restriction]. Sampling shall be conducted consistent with the District approved *Fuel Gas Sulfur and HHV Monitoring Plan*.

All sampling and analyses are required to be performed according to District approved procedures and methodologies. Typically, the appropriate ASTM methods are acceptable. It is important that all sampling and analysis be traceable by chain of custody procedures.

4.7.2 Controlled IC Engines: The Caterpillar G-342 is to be source tested annually if it is operated following the submittal of an ATC application. The source test requirements are listed in Table 4.7-1. The fuel used by the engine is required to be sampled and analyzed, as listed below. Duplicate samples are required.

- Fuel Gas: Sample to be taken from the fuel flow inlet line to the engines. Analysis for high heating value (HHV) shall be measured quarterly, annually for total sulfur, and monthly for hydrogen sulfide. [Note: Under a County Land Use permit, Greka must keep the gas pipeline fuel S level below 29 ppmvd; Greka continuously monitors its fuel line, using District-approved methods (Re: District ATC/PTO 9412) to comply with this restriction]. Sampling shall be conducted consistent with the District approved *Fuel Gas Sulfur and HHV Monitoring Plan*).

Table 4.7-1 Controlled IC Engine Source Test Requirements (Caterpillar G-342)

Emission & Limit Test Points	Pollutants	Parameters^(b)	Test Methods^{(a),(c)}	Concentration (in ppmvd @ 15% O₂)
IC Engine Exhaust @ NSCR exit ^(b)	NO _x	ppmv, lb/hr	EPA Method 7E, ARB 1-100	50, 36
	CO	ppmv, lb/hr	EPA Method 10, ARB 1-100	400, 299
	ROC	ppmv, lb/hr	EPA Method 18	24, 24
	Sampling Point Det.		EPA Method 1	
	Stack Gas Flow Rate		EPA Method 2 or 19	
	O ₂	Dry, Mol. Wt	EPA Method 3	
	Moisture Content		EPA Method 4	
Fuel Gas	Fuel Gas Flow Rate		Fuel Gas Meter ^(d)	
	Higher Heating Value	BTU/scf	ASTM D 1826-88	
	Total Sulfur Content ^(d)		ASTM D 1072	
Fuel/Air Ratio Controller	O ₂ Sensor Control Setpoint		Millivolt setpoint	
	Inlet NSCR Catalyst O ₂		EPA Method 3	
IC Engine Setup	Ignition Timing		Setting used during test to be documented	

Site Specific Requirements

- (a) Alternative methods may be acceptable on a case-by-case basis.
- (b) The emission rates shall be based on EPA Methods 2 and 4, or Method 19 along with the heat input rate. Measured NO_x, ROC, and CO ppmvd shall not exceed the limits specified in Condition No. 3 of this PTO.
- (c) For NO_x, ROC, CO and O₂ a minimum of three 40-minute runs shall be obtained during each test.
- (d) Total sulfur content fuel samples shall be obtained using EPA Method 18 with Tedlar Bags (or equivalent) equipped with Teflon tubing and fittings. Turnaround time for laboratory analysis of these samples shall be no more than 24 hours from sampling in the field.
- (e) Source testing shall be performed for the IC engine in an "as found" condition operating at a representative, District-approved, IC engine load (SCF/hr).
- (f) Fuel meter shall meet the calibration and metered volume corrections specified in Rule 333, §G.3.a.

4.8 Part 70 Engineering Review: Hazardous Air Pollutant Emissions

Hazardous air pollutant (HAP) emissions for the Blochman Lease are based on various HAP emission factors and the permitted operational limits and maximum facility design throughputs of this permit. HAP emission factors are shown in Table 4.8-1. Facility potential annual HAP emissions, based on the worst-case scenario listed in Section 5.3. Stationary Source potential annual HAP emissions are summarized in Table 5.3-3. These emissions are estimates only. They are not limitations.

4.8.1 Emission Factors for HAP Potential Emissions:

Gas Fired Internal Combustion Engines: The HAP emission factors for produced gas fired IC engines were obtained from USEPA AP-42 Table 3.2-3, *Uncontrolled Emission Factors for 4-Stroke Rich-Burn Engines* (August, 2000).

Fugitive Emissions: The HAP emission factors for fugitive emissions (including valves and fittings, well heads, compressors, pumps, pigging equipment, tanks, sumps/well cellars/pits and the loading rack) were obtained from Cat Canyon crude tank headspace testing (ENSR 1990). The emission factors were converted from lb/lb TOC to lb/lb ROC using the following District-approved ROC/TOC ratios:

Table 4.8-1. HAP Emission Factors

<u>Source Type</u>	<u>ROC/TOC Ratio</u>
Sumps and Well Cellars	0.606
Valves and fittings	0.391
Pumps	0.492
Wellheads	0.606
Compressors	0.262
Loading Racks	0.885
Fixed roof tanks (crude)	0.885
Pipeline Pig Launcher (gas)	0.308

Solvents/Coatings: The HAP emission factors for solvent usage and coating operations are based on the CARB *VOC Species Profile Number 802* for mineral spirits.

5. Emissions

5.1 General

Emissions calculations are divided into "permitted" and "exempt" categories. Permit exempt equipment is determined by District 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 District uses a computer database. Attachment 10.4 contains the District's documentation for the information entered into that database.

5.2 Permitted Emission Limits - Emission Units

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

- Nitrogen Oxides (NO_x)⁴
- Reactive Organic Compounds (ROC)
- Carbon Monoxide (CO)
- Sulfur Oxides (SO_x)⁵
- Particulate Matter (PM)⁶
- Particulate Matter smaller than 10 microns (PM₁₀)
- Greenhouse Gases (GHG)

Permitted emissions are calculated for both short term (hourly and daily) and long term (quarterly and 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. Tables 5.2-1 provide the basic operating characteristics for the uncontrolled IC engines. Table 5.2-2 provides the operating characteristics of the fugitive components associated with the facility. Table 5.2-3 shows the specific emission factors for the uncontrolled IC engines and fugitive hydrocarbon components. Table 5.2-4 and Table 5.2-5 show the permitted short-term and long-term emissions for the uncontrolled IC engines, respectively. Table 5.2-6 and Table 5.2-7 show the permitted short-term and long-term emissions for the fugitive

⁴ Calculated and reported as nitrogen dioxide (NO₂)

⁵ Calculated and reported as sulfur dioxide (SO₂)

⁶ Calculated and reported as all particulate matter smaller than 100 μm

components, respectively. Tables 5.2-8 provide the basic operating characteristics for the controlled IC engines. Table 5.2-9 shows the specific emission factors for the controlled IC engines. Table 5.2-10 and Table 5.2-11 show the permitted short-term and long-term emissions for the controlled IC engines, respectively. In each table, the last column indicates whether the emission limits are federally enforceable.

5.3 Part 70: Hazardous Air Pollutant Emissions for the Facility

Hazardous air pollutants (HAP) emission factors, for each type of emissions unit, are listed in Table 5.3-1. Potential HAP emissions, based on the worst-case scenario, are shown in Table 5.3-2. Stationary source wide HAP emissions are shown in Table 5.3-3.

5.4 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 and Table 5.2-2 for each emission unit are assumed. Table 5.4-1 shows the total permitted emissions for the facility.

Short Term Scenario:

- Internal Combustion Units (uncontrolled)
- Fugitive Components

Long Term Scenario:

- Internal Combustion Units (uncontrolled)
- Fugitive Components

5.5 Part 70: Federal Potential to Emit for the Facility

Error! Reference source not found. lists the federal Part 70 potential to emit. For facilities subject to Part 70 Regulation, all emissions, except fugitive emissions, are counted in the federal definition of potential to emit. However, fugitives are counted in the Federal potential to emit if the facility is subject to any applicable NSPS or NESHAP requirement. ICE Facility is subject to NESHAP requirements therefore the Federal Potential to Emit is equal to the Permit Potential to Emit.

5.6 Exempt Emission Sources/Part 70 Insignificant Emissions

Per Rule 202, maintenance activities such as painting and surface coating qualify for a permit exemption, but may contribute to facility emissions.

Insignificant emission units are defined under District 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:

- Solvents/Surface coating operations used during maintenance operations.

Table 5.6-1 presents the estimated annual emissions from these exempt equipment items, including those exempt items not considered insignificant.

5.7 Net Emissions Increase (NEI) Calculation

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

Where:

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

This facility's net emissions increase since November 15, 1990 (the day the federal Clean Air Act Amendments was adopted in 1990) is attributed to ATC 10174 issued in July 1999. The NEI for Cat Canyon IC Engines is shown in Table 5.7-1. The Greka South Cat Canyon stationary source NEI is listed in Table 10.4-3 in Attachment 10.4 of this permit. The stationary source does not trigger District Rule 802 ROC offset thresholds for any pollutants.

**Table 5.2-1
Greka Cat Canyon IC Engines Facility -- Part 70 PTO 8036
Operating Equipment Description**

Equipment Category	Serial #	APCD De	Device Specifications		Usage Data				Ref.
			BSFC (Btu/bhp-hr)	Capacity (bhp)	hr	day	qtr	year	
M & M (605)	8932	9170	11,000	46.0	1	24	2,190	8,760	
M & M (605)	9837	8862	11,000	46.0	1	24	2,190	8,760	
Waukesha (145)	11508	5316	10,000	49.5	1	24	2,190	8,760	
Waukesha (817)	11696	3382	10,000	49.5	1	24	2,190	8,760	
M & M (605)	11854	3452	11,000	46.0	1	24	2,190	8,760	
Waukesha (F1197)	12035	6456	9,100	49.5	1	24	2,190	8,760	
M & M (605)	12069	3394	11,000	46.0	1	24	2,190	8,760	
M & M (504)	12175	3435	10,000	48.9	1	24	2,190	8,760	
Waukesha (140)	110008	6448	10,000	49.5	1	24	2,190	8,760	
Waukesha (145)	110009	3390	10,000	49.5	1	24	2,190	8,760	
Waukesha (140)	110015	3441	10,000	49.5	1	24	2,190	8,760	
M&M (605)	110037	3405	11,000	46.0	1	24	2,190	8,760	
Total			124,100.0	575.9					

Table 5.2-2
Greka Cat Canyon IC Engines Facility -- Part 70 PTO 8036
Operating Equipment Description - Fugitive

Equipment Category	Description	ID#	Device Specifications			Usage Data				References	
			Control Efficiency	Size	Units	Capacity	Hour	Day	Qtr		Year
Fugitive Components @ Compressor Plant	Valves & Fittings	100352	80%	7	cmp-leakpath	--	1	24	2190	8760	C
	Flanges/connections	100353	80%	188	cmp-leakpath	--	1	24	2190	8760	
	Compressor Seals	100355	80%	4	cmp-leakpath	--	1	24	2190	8760	
	Pressure Relief	100355	80%	4	cmp-leakpath	--	1	24	2190	8760	

Table 5.2-3
Greka Cat Canyon IC Engines Facility -- Part 70 PTO 8036
Equipment Emission Factors

Equipment Category	Description	ID #	Emission Factors								References
			NOx	ROC	CO	SOx	PM	PM10	GHG	Units	
Internal Combustion Engines	Uncontrolled ICEs	Various	1.905	0.105	1.600	0.122	0.010	0.010	117.000	lb/MMBtu	A
Fugitive Components (at Bell Compressor Plant)	Valves & Fittings	100352	--	0.018	--	--	--	--	--	lb/clp-day	C
	Flanges/connections	100353	--	0.004	--	--	--	--	--	lb/clp-day	
	Compressor Seals	100355	--	0.133	--	--	--	--	--	lb/clp-day	
	Pressure Relief	100355	--	0.414	--	--	--	--	--	lb/clp-day	

Table 5.2-4
Greka Cat Canyon IC Engines Facility -- Part 70 PTO 8036
Short Term Emission Limits by Emission Unit

Description	APCD ID#	NO_x	ROC	CO	SO_x	PM	PM10	GHG	Federal
		lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	Enforceability
M & M (605)	9170	23.13	1.28	19.43	1.49	0.12	0.12	1420.85	AE
M & M (605)	8862	23.13	1.28	19.43	1.49	0.12	0.12	1420.85	AE
Waukesha (145)	5316	22.63	1.25	19.01	1.45	0.12	0.12	1389.96	AE
Waukesha (817)	3382	22.63	1.25	19.01	1.45	0.12	0.12	1389.96	AE
M & M (605)	3452	23.13	1.28	19.43	1.49	0.12	0.12	1420.85	AE
M & M (605)	3394	23.13	1.28	19.43	1.49	0.12	0.12	1420.85	AE
M & M (504)	3435	22.36	1.23	18.78	1.44	0.12	0.12	1373.11	AE
Waukesha (145)	6458	22.63	1.25	19.01	1.45	0.12	0.12	1389.96	AE
Waukesha (140)	6448	22.63	1.25	19.01	1.45	0.12	0.12	1389.96	AE
Waukesha (145)	3390	22.63	1.25	19.01	1.45	0.12	0.12	1389.96	AE
Waukesha (140)	3441	22.63	1.25	19.01	1.45	0.12	0.12	1389.96	AE
M&M (605)	3405	23.13	1.28	19.43	1.49	0.12	0.12	1420.85	AE
Emissions Total:		273.82	15.09	229.98	17.58	1.44	1.44	16,817.11	

**Table 5.2-5
Greka Cat Canyon IC Engines Facility -- Part 70 PTO 8036
Long Term Emission Limits by Emission Unit**

Description	APCD ID#	NOx	ROC	CO	SOx	PM	PM10	GHG	Federal Enforceability
		TPY	TPY	TPY	TPY	TPY	TPY	TPY	
M & M (605)	9170	4.22	0.23	3.55	0.27	0.02	0.02	259.30	AE
M & M (605)	8862	4.22	0.23	3.55	0.27	0.02	0.02	259.30	AE
Waukesha (145)	5316	4.13	0.23	3.47	0.27	0.02	0.02	253.67	AE
Waukesha (817)	3382	4.13	0.23	3.47	0.27	0.02	0.02	253.67	AE
M & M (605)	3452	4.22	0.23	3.55	0.27	0.02	0.02	259.30	AE
Waukesha (F1197)	6456	3.76	0.21	3.16	0.24	0.02	0.02	230.84	AE
M & M (605)	3394	4.22	0.23	3.55	0.27	0.02	0.02	259.30	AE
M & M (504)	3435	4.08	0.22	3.43	0.26	0.02	0.02	250.59	AE
Waukesha (140)	6448	4.13	0.23	3.47	0.27	0.02	0.02	253.67	AE
Waukesha (145)	3390	4.13	0.23	3.47	0.27	0.02	0.02	253.67	AE
Waukesha (140)	3441	4.13	0.23	3.47	0.27	0.02	0.02	253.67	AE
M&M (605)	3405	4.22	0.23	3.55	0.27	0.02	0.02	259.30	AE
Emissions Total:		49.60	2.73	41.66	3.18	0.26	0.26	3,046.29	

**Table 5.2-6
Greka Cat Canyon IC Engines Facility -- Part 70 PTO 8036
Short Term Emission Limits- Fugitives**

Equipment Category	Description	NOx	ROC	CO	SOx	PM	PM10	Federal Enforceability
		lb/day	lb/day	lb/day	lb/day	lb/day	lb/day	
Fugitive Components @ Compressor Plant	Valves & Fittings	--	0.128	--	--	--	--	FE
	Flanges/connections	--	0.816	--	--	--	--	FE
	Compressor Seals	--	0.531	--	--	--	--	FE
	Pressure Relief	--	1.654	--	--	--	--	FE
Emissions Total: Fugitive Components		0.00	3.13	0.00	0.00	0.00	0.00	

Notes

FE = federally enforceable
A = APCD-only enforceable
NE = not enforceable

**Table 5.2-7
Greka Cat Canyon IC Engines Facility -- Part 70 PTO 8036
Long Term Emission Limits - Fugitives**

Equipment Category	Description	NOx	ROC	CO	SOx	PM	PM10	Federal Enforceability
		TPY	TPY	TPY	TPY	TPY	TPY	
Fugitive Components @ Compressor Plant	Valves & Fittings	--	0.023	--	--	--	--	FE
	Flanges/connections	--	0.149	--	--	--	--	FE
	Compressor Seals	--	0.097	--	--	--	--	FE
	Pressure Relief	--	0.302	--	--	--	--	FE
Emissions Total: Fugitive Components		0.00	0.57	0.00	0.00	0.00	0.00	

Notes

FE = federally enforceable
A = APCD-only enforceable
NE = not enforceable

**Table 5.2-8
Greka Cat Canyon IC Engines Facility -- Part 70 PTO 8036
Operating Equipment Description - Controlled IC Engines**

Equipment Category	Description	Serial #	APCD ID#	Device Specifications			Usage Data					References
				Fuel	HHV (Btu/scf)	Size (Btu/bhp-hr)	Capacity (MMBtu/hr)	Hour	Day	Qtr	Year	
IC Engines @ Compressor Plant (controlled)	Caterpillar G-342 NAHCR	12253	6466	BLG	1,100	8,140	1.83	1	24	2,190	8,760	B

Notes

FG = Fuel Gas used by leases

BLG = Fuel Gas used at Bell Lease Compressor Plant

**Table 5.2-9
Greka Cat Canyon IC Engines Facility -- Part 70 PTO 8036
Equipment Emission Factors- Controlled IC Engines**

Equipment Category	Description	ID #	Emission Factors								References
			NOx	ROC	CO	SOx	PM	PM10	GHG	Units	
IC Engines @ Compressor Plant (Controlled)	Caterpillar G-342 NAHCR	6466	0.300	0.150	0.500	N/A	N/A	N/A	398.030	g/bhp-hr	B
			0.135	0.080	0.674	0.037	0.009	0.009	117.000	lb/MMBTU	
			36.37	24.00	298.75	N/A	N/A	N/A	N/A	ppmv @ 15%	

Table 5.2-10
Greka Cat Canyon IC Engines Facility -- Part 70 PTO 8036
Emission Limits by Emission Unit
Operating Equipment Description - Controlled IC Engines/Compressor Plant ICE's

Equipment Category	Description	NOx		ROC		CO		SOx		PM		PM10		GHG		Federal Enforceability
		lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	
IC Engines @ Compressor Plant (controlled)	Caterpillar G-342 NAHCR	0.25	5.92	0.15	3.51	1.23	29.62	0.07	1.61	0.02	0.40	0.02	0.40	214.29	5142.85	FE
Emissions Total: IC Engines		0.25	5.92	0.15	3.51	1.23	29.62	0.07	1.61	0.02	0.40	0.02	0.40	214.29	5142.85	

Notes

FE = federally enforceable
A = APCD-only enforceable
NE = not enforceable

Table 5.2-11
Greka Cat Canyon IC Engines Facility -- Part 70 PTO 8036
Long Term Emission Limits by Emission Unit
Operating Equipment Description - Controlled IC Engines

Equipment Category	Description	NOx		ROC		CO		SOx		PM		PM10		GHG		Federal Enforceability
		TPQ	TPY	TPQ	TPY											
IC Engines @ Compressor Plant (controlled)	Caterpillar G-342 NAHCR	0.27 [✓]	1.08	0.16 [✓]	0.64	0.27 [✓]	1.08	0.07 [✓]	0.29	0.27 [✓]	1.08	0.27 [✓]	1.08	234.64	938.57	FE
Emissions Total: IC Engines		0.27	1.08	0.16	0.64	0.27	1.08	0.07	0.29	0.27	1.08	0.27	1.08	234.64	938.57	

Notes

FE = federally enforceable
A = APCD-only enforceable
NE = not enforceable

Table 5.73-2: Facility HAP Emissions

Equipment Category	Description	1,1,2,2-Tetrahaloethane	1,1,2-Trichloroethane	1,3-Butadiene	1,3-Dichloropropene	Acetaldehyde	Acrolein	Arsenic	Barium	Benzene	Beryllium	Cadmium	Carbon tetrachloride	Chlorobenzene	Chloroform	Chromium	Cobalt	Dichlorobenzene	Ethylbenzene	Ethylene Dibromide	Ethylene Dichloride	Formaldehyde	Hexane	Manganese	Mercury	Methanol	Methylene chloride	Naphthalene	Nickel	PAHs (total)	Propylene Dichloride	Selenium	Styrene	Toluene	Vinyl chloride	Xylenes
IC Engines	Waukesha (145)	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	M & M (605)	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Waukesha (145)	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Waukesha (817)	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	M & M (605)	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Waukesha (F1197)	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	M & M (605)	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	M & M (504)	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Waukesha (140)	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Waukesha (145)	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Waukesha (140)	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M & M (605)	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
IC Engines @ Compressor Plant (controlled)	Caterpillar G-342 NAHCR	0.00	0.00	0.01	0.00	0.02	0.02	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Fugitive Components @ Compressor Plant	Valves & Fittings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	Flanges/connections	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	Compressor Seals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	Pressure Relief	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Solvent Usage	Maintenance (Wipe Cleaning)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	
	SUB- TOTAL HAPS (tpy) =	0.00	0.00	0.02	0.00	0.09	0.09	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.01		
	TOTAL HAPS (tpy) =	1.12																																		

1. These are estimates only, and are not intended to represent emission limits.

Table 5.73-3: Stationary Source HAP Emissions

Facility	FID	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,3-Butadiene	1,3-Dichloropropene	Acetaldehyde	Acrolein	Arsenic	Barium	Benzene	Beryllium	Cadmium	Carbon tetrachloride	Chlorobenzene	Chloroform	Chromium	Cobalt	Dichlorobenzene	Ethylbenzene	Ethylene dibromide	Ethylene dichloride	Formaldehyde	Hexane	Manganese	Mercury	Methanol	Methylene chloride	Naphthalene	Nickel	PAHs (total)	Propylene Dichloride	Selenium	Styrene	Toluene	Vinyl chloride	Xylenes	Total HAPs
Bell Lease	3211	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.04	0.00	0.01	0.00	0.00	0.09	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.39	0.87	
Blockman Lease	3306	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.01	0.09		
Palmer Stendl Lease	3307	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.04		
Cat Canyon IC Engines	3831	0.00	0.00	0.02	0.00	0.09	0.09	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.01	1.12	
Stationary Source Total HAPs (tpy) =		0.00	0.00	0.02	0.00	0.10	0.09	0.00	0.30	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.04	0.00	0.01	0.00	0.70	0.09	0.00	0.00	0.11	0.00	0.04	0.00	0.00	0.00	0.00	0.17	0.00	0.42	2.13	

1. These are estimates only, and are not intended to represent emission limits.

Table 5.74-2 Total Permitted Facility Emissions

A. Hourly

Equipment Category	NOx	ROC	CO	SOx	PM	PM10	GHG
Internal Combustion Engines - controlled	0.25	0.15	1.23	0.07	0.02	0.02	214.29
Totals (lb/hr)	0.25	0.15	1.23	0.07	0.02	0.02	2909.69

B. Daily

Equipment Category	NOx	ROC	CO	SOx	PM	PM10	GHG
Internal Combustion Engines - controlled	5.92	3.51	29.62	1.61	0.40	0.40	5,142.85
Internal Combustion Engines - uncontrolled	273.82	15.09	229.98	17.58	1.44	1.44	16,817.11
Fugitive Components	0.00	3.13	0.00	0.00	0.00	0.00	0.00
Totals (lb/day)	279.74	21.73	259.60	19.19	1.84	1.84	21,959.96

C. Quarter

Equipment Category	NOx	ROC	CO	SOx	PM	PM10	GHG
Internal Combustion Engines - controlled	0.27	0.16	0.27	0.07	0.27	0.27	234.64
Totals (TPQ)	0.27	0.16	0.27	0.07	0.27	0.27	234.64

D. Annual

Equipment Category	NOx	ROC	CO	SOx	PM	PM10	GHG
Internal Combustion Engines - controlled	1.08	0.64	1.08	0.29	1.08	1.08	938.57
Internal Combustion Engines - uncontrolled	49.60	2.73	41.66	3.18	0.26	0.26	3,046.29
Fugitive Components	0.00	0.57	0.00	0.00	0.00	0.00	0.00
Totals (TPY)	50.68	3.37	42.74	3.47	1.34	1.34	3,984.86

**Table 5.5-1
Greka Cat Canyon IC Engines Facility -- Part 70 PTO 8036
Federal Potential to Emit**

A. Hourly

Equipment Category	NOx	ROC	CO	SOx	PM	PM10	GHG
Internal Combustion Engines - controlled	0.25	0.15	1.23	0.07	0.02	0.02	214.29
Totals (lb/hr)	0.25	0.15	1.23	0.07	0.02	0.02	2909.69

B. Daily

Equipment Category	NOx	ROC	CO	SOx	PM	PM10	GHG
Internal Combustion Engines - controlled	5.92	3.51	29.62	1.61	0.40	0.40	5,142.85
Internal Combustion Engines - uncontrolled	273.82	15.09	229.98	17.58	1.44	1.44	16,817.11
Totals (lb/day)	279.74	18.60	259.60	19.19	1.84	1.84	21,959.96

C. Quarter

Equipment Category	NOx	ROC	CO	SOx	PM	PM10	GHG
Internal Combustion Engines - controlled	0.27	0.16	0.27	0.07	0.27	0.27	234.64
Totals (TPQ)	0.27	0.16	0.27	0.07	0.27	0.27	234.64

D. Annual

Equipment Category	NOx	ROC	CO	SOx	PM	PM10	GHG
Internal Combustion Engines - controlled	1.08	0.64	1.08	0.29	1.08	1.08	938.57
Internal Combustion Engines - uncontrolled	49.60	2.73	41.66	3.18	0.26	0.26	3,046.29
Totals (TPY)	50.68	3.37	42.74	3.47	1.34	1.34	3,984.86

Table 5.76-3 Estimated Permit Exempt Emissions

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

Equipment Category	Description	Emission Factor	Unit	NOx	ROC	CO	SOx	PM	PM10
Solvent Usage	Maintenance (Wipe Cleaning)	6.6	lb/gal	--	0.18	--	--	--	--
Totals (TPY):				0.00	0.18	0.00	0.00	0.00	0.00

Table 5.77-4 ICE Facility Net Emissions Increase (NEI-90)

Facility Net Emissions Increase													
Company: Greka Oil and Gas													
Date: February 20, 2013													
I. This Projects "I" NEI-90													
Permit No.	Date Issued	NOx		ROC		CO		SOx		PM		PM10	
		lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr
None													
Totals		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
II. This Facility's "P1s"													
Enter all facility "P1" NEI-90s below:													
PTO 7250-R8, PTO 8010-R7, & PTO 9136-R6													
Permit No.	Date Issued	NOx		ROC		CO		SOx		PM		PM10	
		lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr
ATC 9610	12/23/1996	19.59	3.57	7.63	1.39	32.64	5.96	38.83	7.09	2.34	0.43	2.34	0.43
ATC 9975	10/12/1998	5.92	1.08	11.84	2.73	29.62	5.41	5.68	1.04	1.55	0.28	1.55	0.28
ATC 10133	5/18/1999	13.31	2.43	4.65	0.85	85.32	15.56			0.17	0.03	0.17	0.03
ATC 10421	6/1/2001			10.17	1.85								
Totals		38.82	7.08	34.29	6.82	147.58	26.93	44.51	8.13	4.06	0.74	4.06	0.74
Notes: (1) Facility NEI from IDS.													
III. This Facility's "P2" NEI-90 Decreases													
Enter all facility "P2" NEI-90s below:													
Permit No.	Date Issued	NOx		ROC		CO		SOx		PM		PM10	
		lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr
ATC 10133	5/18/1999							9.06	1.65				
ATC/PTO 10919	5/1/2003	6.50	1.19	2.17	0.40	10.84	1.98	12.94	2.36	0.78	0.14	0.78	0.14
PT70/PTO 8036 Mod	5/1/2003	6.50	1.19	2.17	0.40	10.84	1.98	12.94	2.36	0.78	0.14	0.78	0.14
PT70/PTO 8036 Reeval	12/1/2003	5.92	1.08	11.84	2.73	29.62	5.41	5.68	1.04	1.55	0.28	1.55	0.28
PT70/PTO 8036 Reeval	TBD	886.33	162.13	48.86	8.37	744.43	136.17	56.90	12.54	4.65	0.85	4.65	0.85
Totals		905.25	165.59	65.04	11.90	795.73	145.54	97.52	19.95	7.76	1.41	7.76	1.41
Notes: (1) Facility NEI from IDS.													
IV. This Facility's Pre-90 "D" Decreases													
Enter all facility "D" decreases below:													
Permit No.	Date Issued	NOx		ROC		CO		SOx		PM		PM10	
		lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr
ATC 9975	10/12/1998	79.31	13.74	259.05	44.91	234.31	40.58	21.24	3.75	0.00	0.00	0.00	0.00
Totals		79.31	13.74	259.05	44.91	234.31	40.58	21.24	3.75	0.00	0.00	0.00	0.00
Notes: (1) Facility "D" from IDS.													
V. Calculated This Facility's NEI-90													
Table below summarizes facility NEI-90 as equal to: I+ (P1-P2) -D													
Term	NOx		ROC		CO		SOx		PM		PM10		
	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	
Project "I"	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
P1	38.82	7.08	34.29	6.82	147.58	26.93	44.51	8.13	4.06	0.74	4.06	0.74	
P2	905.25	165.59	65.04	11.90	795.73	145.54	97.52	19.95	7.76	1.41	7.76	1.41	
D	79.31	13.74	259.05	44.91	234.31	40.58	21.24	3.75	0.00	0.00	0.00	0.00	
NEI Correction	53.80	9.09	239.58	40.79	172.05	29.21							
FNEI-90		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Notes: (1) Resultant FNEI-90 from above Section I thru IV data. (2) Totals only apply to permits for this facility ID. Totals may not appear correct due to rounding. (3) Because of rounding, values in this table shown as 0.00 are less than 0.005, but greater than zero. (4) The NEI correction factor is used to zero out the negative NEI emissions caused by the "D" term for ATC 9975. Per District policy, the Net Emissions Increase for a facility can never be below zero. Likewise the "P2" terms from 2003 and this permitting action will not result in negative NEI emissions, but instead are set to zero. All future permitting actions which constitute an "I" or "P1" term will increase the facility NEI by that permit's potential to emit.													

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 South Cat Canyon stationary source is subject to the AB 2588 Air Toxics “Hot Spots” Program. A health risk assessment (HRA) for the Greka South Cat Canyon stationary source, as configured at the time, was prepared by the District 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 District 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, Blochman and Palmer-Stendl leases and all associated equipment. This risk was 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 by 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 District’s AB 2588 significance thresholds of 10 in a million and 1.0 respectively.

The District is currently evaluating the health risk based on the Air Toxics Emission Inventory Report (ATEIR) for reporting year 2003 for the Greka South Cat Canyon stationary source using the Hotspots Analysis and Reporting Program (HARP) software.

7. CAP Consistency, Offset Requirements and ERCs

7.1 General

Santa Barbara County is in attainment of the federal ozone standard but is in nonattainment of the state eight-hour ozone ambient air quality standard. In addition, the County is in nonattainment of the state PM₁₀ ambient air quality standards. The County is either in attainment or unclassified with respect to all other ambient air quality standards. 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 maintenance of the federal ambient air quality standards and progress towards attainment of the state ambient air quality standards. Under District regulations, any modifications at this 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.

7.2 Clean Air Plan

The 2007 Clean Air Plan, adopted by the District Board on August 16, 2007, addressed both federal and state requirements, serving as the maintenance plan for the federal eight-hour ozone standard and as the state triennial update required by the Health and Safety Code to demonstrate how the District will expedite attainment of the state eight-hour ozone standard. The plan was developed for Santa Barbara County as required by both the 1998 California Clean Air Act and the 1990 Federal Clean Air Act Amendments.

On January 20, 2011 the District Board adopted the 2010 Clean Air Plan. The 2010 Plan provides a three-year update to the 2007 Clean Air Plan. As Santa Barbara County has yet to attain the state eight-hour ozone standard, the 2010 Clean Air Plan demonstrates how the District plans to attain that standard. The 2010 Clean Air Plan therefore satisfies all state triennial planning requirements.

7.3 Offset Requirements

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

7.4 Emission Reduction Credits

Emission reduction credits, granted to Greka are detailed in revised DOI 006 issued to Greka by the District, in May 2003. The ERC's are based on IC Engine emission reductions at the Bell Lease Compressor Plant [*Re: District 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 #189-1113 includes the remaining portion (CO credits) of the original ERC owned by Greka.

8. Lead Agency Permit Consistency

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

9. Permit Conditions

This section lists the applicable permit conditions for ICE Facility. 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., District only) permit conditions. Conditions listed in Sections A, B and C are enforceable by the USEPA, the District, the State of California and the public. Conditions listed in Section D are enforceable only by the District 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 District 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 ICE Facility:

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), District Rule 1303.D.1]*

A.2 **Emergency Provisions.** The permittee shall comply with the requirements of the District, Rule 505 (Upset/Breakdown rule) and/or District 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 District, 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), District 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: District 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: District Rule 1303.D.2]*

A.5 **Severability.** In the event that any condition herein is determined to be invalid, all other conditions shall remain in force. *[Re: District Rules 103 and 1303.D.1]*

- A.6 **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 District. 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 District rules.

The permittee shall apply for renewal of the Part 70 permit no later than 180 days 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: District Rule 1304.D.1]*

- A.7 **Payment of Fees.** The permittee shall reimburse the District 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 District and the USEPA pursuant to section 502(a) of the Clean Air Act. *[Re: District Rules 1303.D.1 and 1304.D.11, 40 CFR 70.6(a)(7)]*

- A.8 **Prompt Reporting of Deviations.** The permittee shall submit a written report to the District 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 District in accordance with Rule 505, Breakdown Conditions, or Rule 1303.F Emergency Provisions. *[District Rule 1303.D.1, 40 CFR 70.6(a) (3)]*

- A.9 **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 District 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: District Rules 1303.D.1, 1302.D.3, 1303.2.c]*

- A.10 **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 District-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.11 **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;
- (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 District upon request. [*Re: District Rule 1303.D.1.f, 40 CFR 70.6(a)(3)(ii)(A)*]

A.12 **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 District 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 District 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 reopening. [*Re: 40 CFR 70.7(f), 40 CFR 70.6(a)*]

- A.13 **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)]*

The standard administrative conditions listed below (A.14 through A.19) apply to the controlled IC engines and the IC engines permitted to operate at the Bell Lease Compressor Plant. *[Re: District ATC 9610, 9975]*

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 District rule(s), the wording of the rule shall control.

- 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 District Rule 303. *[Re: District Rule 301]*
- B.2 **Visible Emissions (Rule 302).** Greka shall not discharge into the atmosphere from any single source of emission any air contaminants for a period or periods aggregating more than three minutes in any one hour which is:
- (a) As dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines, or
 - (b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subsection B.2(a) above.
- B.3 **Nuisance (Rule 303).** No pollutant emissions from any source at Greka shall create nuisance conditions. No operations shall endanger health, safety or comfort, nor shall they damage any property or business. *[Re: District Rule 303]*
- B.4 **PM Concentration - North Zone (Rule 304).** Greka shall not discharge into the atmosphere, from any source, particulate matter in excess of the 0.3 grains per cubic foot of gas at standard conditions. *[Re: District Rule 304]*

- B.5 **Specific Contaminants (Rule 309).** Greka shall not discharge into the atmosphere from any single source sulfur compounds and combustion contaminants in excess of the applicable standards listed in Sections A and E Rule 309. *[Re: District Rule 309]*
- B.6 **Sulfur Content of Fuels (Rule 311).** Greka shall not burn fuels with sulfur content in excess of 0.5% (by weight) for liquid fuels and 796 ppmvd or 50 gr/100 scf (calculated as H₂S) for gaseous fuel. Compliance with this condition shall be based on daily measurement of the sulfur concentration of the fuel calculated as H₂S at standard conditions and annual measurements of the total sulfur content of fuel. *[District Rule 311]*
- B.7 **Organic Solvents (Rule 317).** Greka shall comply with the emission standards listed in Section B of Rule 317. Compliance with this condition shall be based on Greka's compliance with Condition D.14 of this permit and facility inspections. *[Re: District Rule 317]*
- B.8 **Metal Surface Coating Thinner and Reducer (Rule 322).** The use of photochemically reactive solvents as thinners or reducers in metal surface coatings is prohibited. Compliance with this condition shall be based on Greka compliance with Condition D.10 of this permit and facility inspections. *[Re: District Rule 322]*
- B.9 **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.14 of this permit and facility inspections. *[Re: District Rule 323]*
- B.10 **Disposal and Evaporation of Solvents (Rule 324).** Greka shall not dispose through atmospheric evaporation of more than one and a half gallons of any photochemically reactive solvent per day. Compliance with this condition shall be based on Greka's compliance with Condition D.14 of this permit and facility inspections. *[Re: District Rule 324]*
- B.11 **Surface Coating of Metal Parts and Products (Rule 330).** Greka shall not apply any coating or specify the use of any coating on any metal part or product subject to the provisions of this Rule which, as applied, emits or may emit reactive organic compounds into the atmosphere in excess of the limits identified in Section D of this rule. *[Re: District Rule 330]*
- B.12 **Adhesives and Sealants (Rule 353).** The permittee shall not use adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, or any other primers, unless the permittee complies with the following:
- (a) Such materials used are purchased or supplied by the manufacturer or suppliers in containers of 16 fluid ounces or less; or alternately
 - (b) When the permittee uses such materials from containers larger than 16 fluid ounces and the materials are not exempt by Rule 353, Section B.1, the total reactive organic

compound emissions from the use of such material shall not exceed 200 pounds per year unless the substances used and the operational methods comply with Sections D, E, F, G, and H of Rule 353. Compliance shall be demonstrated by recordkeeping in accordance with Section B.2 and/or Section O of Rule 353. *[Re: District Rule 353]*

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

- (a) Greka shall maintain records of the occurrence and duration of each startup, shutdown, or malfunction of operation;
- (b) Actions taken during periods of startup, shutdown, and malfunction when different from the procedures specified in Greka's startup, shutdown, and malfunction plan (SSMP);
- (c) All information necessary to demonstrate conformance with Greka's SSMP when all actions taken during periods of startup, shutdown, and malfunction are consistent with the procedures specified in such plan;
- (d) All required measurements needed to demonstrate compliance with a relevant standard, including all records with respect to applicability determination, and black oil documentation per 40 CFR 63.760;
- (e) Any information demonstrating whether a source is meeting the requirements for a waiver of recordkeeping 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, recordkeeping and reporting conditions are included in this section for each specific equipment group. This section may also contain other non-generic conditions.

- C.1 Permitted IC Engines at Bell Lease Compressor Plant.** The following equipment item listed in Table C.1-1 below is the one engine in this emissions unit category. This engine currently is out of service, therefore the following permit requirements will not go into effect until an ATC application is received by the District to reactivate the use of the engine.

Table C.1-1 Compressor Plant Controlled IC Engines

District Device No.	Name
6466	Caterpillar G-342 Engine (225 bhp, S/N 12253)

(a) Emission Limits. Mass emissions from the engines listed in Table C.1-1 above shall not exceed the limits specified for the engine listed in Table 5.2-7 through 5.2-10. In addition, emissions from this equipment item shall not exceed the emission concentration limits specified in condition 9.C.1.a.1 below. Compliance with this condition will be assessed through compliance with operation limits, exhaust emissions source testing, and other conditions of this permit. The compliance procedures outlined in Section E.3 of Rule 333 shall be followed for Greka’s use of the portable analyzer. The mass emissions from these two engines will not count toward the facility potential to emit until neither are brought back into service [Re: District ATC 9610, 10133, 11003]

1. *Caterpillar G-342.* Controlled emissions of NO_x, ROC and CO from the Caterpillar engine shall not exceed 0.3 g/bhp-hr (36 ppmvd at 15% O₂), 0.15 g/bhp-hr (24 ppmvd at 15% O₂) and 0.50 g/bhp-hr (299 ppmvd at 15% O₂) respectively. Compliance shall be based on annual source testing according to Table 4.7-1 and quarterly inspections with a portable NO_x/CO analyzer. The compliance procedures outlined in Section E.3 of Rule 333 shall be followed for Greka’s use of the portable analyzer.

(b) Operational Limits: The following operational limits apply to the IC engine listed in Table C.1-1:

1. *Fuel Gas Sulfur Limit.* The total sulfur content (calculated as H₂S at standard conditions, 60° F and 14.7 psia) of the gaseous fuel burned at the Compressor Plant shall not exceed 15 grains per 100 cubic feet (239 ppmv);
2. *Heat Input Limits.* Greka shall comply with the following operating limits:
 - i. The heat input (MMBtu - HHV basis) to the internal combustion engine listed in Table C.1-1 is restricted to the value listed in Table C.1-2.

Table C.1-2 Heat Input Limits for Compressor Plant Controlled IC Engines

IC Engine Make/Model	Serial #	District ID#	Operating Limits		Heat Input Limits	
			(hr/day)	(hr/yr)	(MMBtu/hr)	(MMBtu/yr)
Caterpillar G-342	12253	6466	24	8760	1.83	16,044

3. *Engine Identification.* The engine shall have its Greka identification number permanently and legibly liquid welded or stamped into the engine block. The location of the identifying stamp shall be the same for each engine model and shall be readily accessible for inspection.

4. *Reference List.* For each engine's unique Greka identification number, stamped into the engine block per Condition 9.C.1.b.3, Greka shall maintain a reference list containing the make, model, serial number, rated maximum HP and the corresponding RPM.
 5. *ERCs: Shift in Load.* To ensure that the NEI decrease and ERCs created by replacement of the old Clark HRA-8 compressor engine (old engine #1) remain permanent and enforceable, Greka shall not shift the load from the Caterpillar 6466 engine to any other IC engine. Notwithstanding any provision of District Rule 202, Greka shall not replace engine #6466 without first submitting an ATC application to the District for the replacement engine and an application to modify DOI #006. Any such replacement engine shall meet the criteria of having equivalent or lower potential emissions, stack emission concentrations and air/fuel ratio controllers. Furthermore, all natural gas compression at the South Cat Canyon stationary source shall be performed with engine/compressor units that ensure the emission reductions remain permanent and enforceable for the life of the project.
 6. *Air/Fuel Ratio Controller Set-Points.* The set-points for the Caterpillar G-342 IC engine's Air/Fuel Ratio Controllers shall be maintained throughout the year at the value determined via the annual (or most recent) compliance source test.
 7. *Catalyst Replacement.* Greka may replace the catalyst bed of the Caterpillar engine with an identical catalyst bed as needed to maintain the effectiveness of the control efficiencies.
 8. *Oxygen Sensor Replacement.* Greka shall replace the oxygen sensors no later than 2,000 hours of engine operation for each IC engine.
 9. Only the Caterpillar G-342 (District ID #6466) may operate at the Bell Lease Compressor Plant unless an Authority to Construct and/or a Permit to Operate is obtained first.
- (c) Monitoring: The following source testing and periodic monitoring conditions apply Bell Lease Compressor Plant IC engine:
1. *Fuel Meters.* The Caterpillar IC engine listed in Table C.1-1 shall be equipped with a fuel meter (totalizer) to measure the total cubic feet (scf) delivered to the engine. The fuel meter shall be accurate to within five percent (5%) of the full scale reading. All fuel meters/gauges shall be calibrated in accordance with the fuel meters manufacturer's procedures. The calibrations shall be performed as specified by the fuel meter manufacturer, but no later than the date of the next required emissions source test.
 2. *Fuel Gas Sulfur Data.* Greka shall measure the total sulfur content of the gaseous fuel annually in accordance with ASTM-D1072 and a District approved

Fuel Gas Sulfur Monitoring Plan. Greka shall measure the hydrogen sulfide (H₂S) content of the gaseous fuel monthly via sorbent tube method and an District approved *Fuel Gas Sulfur and HHV Monitoring Plan*.

3. *Fuel Gas High Heating Value.* Greka shall measure the higher heating value of the fuel gas on a quarterly basis using District approved methods and per a District approved *Fuel Gas Sulfur and HHV Monitoring Plan*.
4. *Hour Meters.* The Caterpillar IC engine listed in Table C.1-1 of this permit shall be equipped with a totalizing non-resettable hour meter. The hour meter shall be operational at all times the engine is operated.
5. *Fuel Use Monitoring and Process Monitor Calibration and Maintenance Plan.* Greka shall abide by the procedures identified in the District approved *Fuel Use Monitoring and Process Monitor Calibration and Maintenance Plan* (April 2004). The Plan, and any subsequent District approved revisions, is incorporated by reference as an enforceable part of this permit.
6. *Rule 333 Inspection and Maintenance Plan.* Greka shall abide by the procedures identified in the District approved *Rule 333 Inspection and Maintenance Plan* (November 2009). The Plan, and any subsequent District approved revisions, is incorporated by reference as an enforceable part of this permit.
7. *Source Testing.* For engine ID #6466, Greka shall perform source testing of air emissions and the parameters listed in Table 4.7-1 of this permit. Source testing of the Caterpillar G-342 shall be performed on an annual schedule, using May as the anniversary date. The source testing provisions listed below shall apply.
 - i. Greka shall conduct source testing of air emissions and process parameters listed in Table 4.7-1 of this permit. More frequent source testing may be required if the equipment does not comply with permitted limitations or if other compliance problems, as determined by the District, occur. The engine shall be loaded to the maximum safe load obtainable.
 - ii. Greka shall submit a written source test plan to the District for approval at least thirty (30) calendar days prior to initiation of each source test. The source test plan shall be prepared consistent with the District's *Source Test Procedures Manual* (revised May 1990 and any subsequent revisions). Greka shall obtain written District approval of the source test plan prior to commencement of source testing. The District shall be notified at least ten (10) calendar days prior to the start of source testing activity to arrange for a mutually agreeable source test date when District personnel may observe the test.
 - iii. Source test results shall be submitted to the District within forty-five (45) calendar days following the date of source test completion and shall be

consistent with the requirements approved within the source test plan. Source test results shall demonstrate compliance with Rule 333, the mass emission rates in Section 5, and applicable permit conditions. Greka, as provided for by District Rule 210, shall pay all District costs associated with the review and approval of all plans and reports and the witnessing of tests. The District may, at its discretion, extend the timelines indicated above for good cause, upon receiving a written request from Greka at least 3 days in advance of the applicable deadline.

- iv. A source test for an item of equipment shall be performed on the scheduled day of testing (the test day mutually agreed to) unless circumstances beyond the control of the operator prevent completion of the test on the scheduled day. Such circumstances include mechanical malfunction of the equipment to be tested, malfunction of the source test equipment, delays in source test contractor arrival and/or set-up, or unsafe conditions on site. Except in cases of an emergency, the operator shall seek and obtain District approval before deferring or discontinuing a scheduled test, or performing maintenance on the equipment item on the scheduled test day. Once the sample probe has been inserted into the exhaust stream of the equipment unit to be tested (or extraction of the sample has begun), the test shall proceed in accordance with the approved source test plan. In no case shall a test run be aborted except in the case of an emergency or unless approval is first obtained from the District. If the test cannot be completed on the scheduled day, then the test shall be rescheduled for another time with prior authorization by the District. Failing to perform or complete the source test of an equipment item on the scheduled test day without a valid reason and without District's prior authorization, except in the case of an emergency, shall constitute a violation of this permit. If a test is postponed due to an emergency, written documentation of the emergency event shall be submitted to the District by the close of the business day following the scheduled test day.
- (d) Recordkeeping: Greka shall keep the required logs for the engines listed in Table C.1-2, which demonstrate compliance with emission limits, operation limits and monitoring requirements for these engines. All records and logs, required under any applicable federal or District requirements for the engines, shall be maintained for a minimum of five calendar years from the date of the information collection and log entry. These shall be readily accessible and be made available to the District upon request. Written information (logs) shall include:
- 1. *Fuel Gas Use*. The total amount of fuel gas combusted in the unit listed in Table C.1-2 shall be recorded on a weekly, monthly, quarterly, and annual basis in units of standard cubic feet and million Btus (x.xxx format).
 - 2. The hours of operation for the Caterpillar engine are identified in Table C.2-1. The log shall detail the number of operating hours on each day the engine is operated and the cumulative total monthly and annual hours.

3. *Sulfur Content.* The monthly measured hydrogen sulfide content and the annually measured total sulfur content, both in units of ppmvd, of the gaseous fuel burned on the lease from each permitted combustion unit.
 4. *High Heating Value.* The quarterly high heating value and specific gravity of the fuel gas.
 5. IC engine calibration and maintenance logs, including quarterly inspection results, consistent with the requirements of Rule 333.H.
 6. Greka shall maintain a log of all significant activities involving the catalytic converter and electronic air/fuel ratio controller. This log shall include the following: catalyst replacements, A/F ratio oxygen sensor replacements, A/F ratio controller replacements, and catalyst cleanings.
 7. Greka shall maintain records of the air/fuel ratio controller millivolt setpoints recorded during each source test.
- (e) **Reporting:** On a semi-annual basis, a report detailing the previous six months activities shall be provided to the District. The report shall list all the data required by the Semi-Annual Monitoring/Compliance Verification Reports condition listed below. [Ref: District ATC 9975, District Rules 333, 1303 and 40 CFR 70.6]

C.2 **Uncontrolled IC Engines.** These consist of twelve (12) IC engines located at the South Cat Canyon stationary source and driving oil or produced water pumps and injector pumps. These engines are listed in Table 5.2-1.

- (a) **Emission Limits.** Mass emissions from the engines listed in Table 5.2-1 shall not exceed the limits specified for these engines listed in Table 5.2-3 and 5.2-4.
- (b) **Operational Limits:** The following operational limits shall not be exceeded for the uncontrolled IC engines.
 - (i) Maximum hourly heat input (MMBtu/hour) to the internal combustion engines listed in this permit is restricted to the values listed in the “Hour (MMBtu/hr)” column of Table 10.2-1.
 - (ii) Maximum annual heat input (MMBtu/year) to the internal combustion engines listed in this permit is restricted to the values listed in the “Annual (MMBtu/yr)” column of Table 10.2-1.
 - (iii) Engines shall be fired on gaseous fuels only; a common fuel gas line shall supply fuel to all uncontrolled IC engines listed in Table 10.2-1.
 - (iv) *Gaseous Fuel Sulfur Limit.* The total sulfur content (calculated as H₂S at standard conditions, 60° F and 14.7 psia) of the gaseous fuel burned by the

engines listed in Table 10.2-1 shall not exceed 50 grains per 100 cubic feet (796 ppmvd).

- (v) *Derated Internal Combustion Engines.* The orifice plate on each derated engine shall not have an orifice greater than the diameter listed in Table 10.2-1. The orifice plate shall be made from 10 gauge mild steel stock with a sharp edge circular orifice. The orifice plate shall be located between the carburetor and the intake manifold. The orifice plate shall be in place at all times the engine operates. The Permittee shall inspect one quarter of the orifice plates every three months and document the results of each inspection. Each orifice plate must be inspected at least once every twelve months and different orifice plates shall be inspected each quarter until all the orifice plates have been inspected. In addition, the Permittee shall assist District personnel in the measurement and/or inspection of an orifice plate upon request. The Permittee shall replace an orifice plate within thirty (30) calendar days after any inspection if it shows corrosion or degradation that enlarges the specified hole diameter, or if there is any other indication the plate is not properly restricting fuel flow to the engine. The APCD shall be notified in writing each time an orifice plate is replaced.
- (vi) *Engine Identification.* Each engine shall have its Greka identification number permanently and legibly liquid welded or stamped into the engine block. The location of the identifying stamp shall be the same for each engine model and shall be readily accessible for inspection.
- (vii) *Engine Maintenance (NESHAP ZZZZ).* Existing spark ignition reciprocating internal combustion engines (RICE) must comply with the following operating limits by no later than October 19, 2013:
 - (1) Change the oil and filter every 1,440 hours of operation or annually, whichever comes first.
 - (2) Inspect the spark plugs every 1,440 hours of operation or annually, whichever comes first.
 - (3) Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first.
- (c) Monitoring: The following monitoring conditions apply to the uncontrolled IC engines:
 - (i) *Fuel Meters.* The IC engines listed in Table 10.2-1 shall be equipped with fuel meters (totalizer) to measure the total cubic feet (scf) delivered to the engine. The fuel meters shall be accurate to within five percent (5%) of the full scale reading. The fuel meter/gauge shall be calibrated in accordance with the fuel meters manufacturer's procedures. The calibrations shall be performed as specified by the fuel meter manufacturer. In lieu of equipping each engine listed in Table 10.2-1 with a fuel meter, Greka may propose an alternative fuel metering scheme for District review and approval. Any alternative must be clearly addressed in the *Fuel Use Monitoring and Process Monitor Calibration and Maintenance Plan*.

- (ii) *Fuel Use Monitoring and Process Monitor Calibration and Maintenance Plan.* Greka shall abide by the procedures identified in the District approved *Fuel Use Monitoring and Process Monitor Calibration and Maintenance Plan (2004)*. The Plan, and any subsequent District approved revisions, is incorporated by reference as an enforceable part of this permit.
 - (iii) *Fuel Sulfur Monitoring.* The permittee shall measure the total sulfur content (as H₂S) of the gaseous fuel *annually* in accordance with ASTM-D1072 or an District approved equivalent method. In addition, monthly detector tube samples for H₂S ppmv are required. Records shall be kept on site and made available for inspection by the District staff upon request.
 - (iv) *Fuel Heating Value.* The permittee shall measure the heating value of the gaseous fuel (Btu/scf) on an annual basis.
- (d) Recordkeeping: For the 11 IC engines listed in Table 10.2-1, the following records (electronic or hard copy) shall be maintained by the permittee and shall be made available to the District upon request:
- (i) Fuel use per condition C.2.b.i of this permit. Monthly records shall be generated no later than 90 days after the close of the subject month.
 - (ii) Written engine operation log consistent with the requirements of Rule 333.H.
 - (iii) Written documentation of the gaseous fuel sulfur content per condition C.2.b.ii.
 - (iv) Written documentation of the heating value of the gaseous fuel per condition C.2.b.iii.
 - (v) If an operators tag number is used in lieu of an engine identification plate, written documentation which references the operators unique engine ID number to a list containing the make, model, rated maximum horsepower and the corresponding RPM.
 - (vi) *Recordkeeping (NESHAP ZZZZ).* Starting May 3, 2013 the following records shall be kept for each engine subject to Subpart *ZZZZ*:
 - (1) The date of each engine oil change and the number of hours of operation since the last oil change.
 - (2) The date of each engine spark plug inspection and the number of hours of operation since the last spark plug inspection. Indicate if the spark plugs were replaced as a result of the inspection.
 - (3) The date of each engine's hose and belts inspection and the number of hours of operation since the last hose and belt inspection. Indicate if any hose or belt was replaced as a result of the inspection.
- (e) Reporting: On a semi-annual basis, a report detailing the previous six months activities shall be provided to the District. The report shall list all the data required

by the Semi-Annual Monitoring/Compliance Verification Reports condition listed below.

C.3 **Fugitive Hydrocarbon Emission Components.** The following equipment are included in this emissions unit category:

Table C.3-1 Fugitive Hydrocarbon Emission Components

ID #	Name
	<i>Gas/Light Liquid Service Components</i>
100352	Valves - Bellows Seal
100352	Valves - Accessible/Inaccessible
100352	Valves – Unsafe
100352	Valves - LEV Accessible/Inaccessible
100352	Valves - LEV Unsafe
100353	Flanges/Connections - Accessible/Inaccessible
100353	Flanges/Connections – Unsafe
100355	Compressor Seals - To Atm
100354	Compressor Seals - To VRU
100355	Relief Valves - To Atm
100355	Relief Valves - To VRU
100355	Pump Seals – Tandem
100355	Pump Seals – Single
100355	Exempt

- (a) **Emission Limits:** Mass emissions from the gas/light liquid service components listed above in Table C.3-1 shall not exceed the limits listed in Tables 5.2-3 and 5.2-4. Compliance with these limits shall be assessed through compliance with the monitoring, recordkeeping, and reporting (MRR) conditions listed in this permit.
- (b) **Operational Limits:** Operation of the equipment listed in Table C.3-1 above and the gas gathering system shall conform to the requirements listed in District Rule 331.D and E. Compliance with these limits shall be assessed through compliance with the monitoring, recordkeeping and reporting (MRR) conditions listed in this permit. In addition Greka shall meet the following:
 - 1. **Rule 331 I&M Program.** The District-approved *I&M Plan* for the IC Engine Facility in the Greka Cat Canyon Stationary Source shall be implemented for the life of the project. The Plan, and any subsequent District approved revisions, is incorporated by reference as an enforceable part of this permit. Within sixty (60) days of the issuance of this permit, Greka shall submit for District approval, a revised *Fugitive I&M Plan* for the South Cat Canyon Stationary source.
 - 2. **Rule 331 Exemption Request.** If Greka wishes to maintain or obtain the Rule 331 B.2.c exemption from the MRR requirements of Rule 331, then Greka shall submit an exemption request to the District 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.

3. *Leak-Path Count.* The total leak-path component count listed in Greka's most recent I&M component leak-path inventory shall not exceed the total leak-path line item sub-totals listed in this permit by more than five percent. This five percent range is to allow for minor differences due to component counting methods and does not constitute allowable emissions growth due to the addition of new equipment.
 4. *Venting.* All routine venting of hydrocarbons shall be routed to either the sales compressor, flare header, injection well or other District-approved control device.
- (c) Monitoring: The equipment listed in this section are subject to all the monitoring requirements listed in District Rule 331.F. The test methods in Rule 331.H shall be used, when applicable.
- (d) Recordkeeping: All inspection and repair records shall be retained at the source for a minimum of five years. The equipment listed in this section is subject to all the recordkeeping requirements listed in District Rule 331.G. In addition, Greka shall:
1. *I&M Log* - Record in a log the following:
 - (a) A record of leaking components found (including name, location, type of component);
 - (b) Date of leak detection;
 - (c) The ppmv reading;
 - (d) Date of repair attempt;
 - (e) Method of detection;
 - (f) Date of re-inspection;
 - (g) The ppmv reading after leak is repaired;
 - (h) A record of the total components inspected and the total number and percentage found leaking by component type;
 - (i) A record of leaks from critical components;
 - (j) A record of leaks from components that incur five repair actions within a continuous 12-month period;
 - (k) A record of component repair actions including dates of component re-inspections.

(e) **Reporting:** The equipment listed in this section are subject to all the reporting requirements listed in District Rule 331.G. On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the District. The report shall list all the data required by the Semi-Annual Monitoring/Compliance Verification Reports condition listed below. [Re: District ATC 9975, District Rule 331, 1303, 40 CFR 70.6]

C.4 **Recordkeeping.** All records and logs required by this permit and any applicable District, state or federal rule or regulation shall be maintained for a minimum of five calendar years from the date of information collection or log entry at the lease. These records or logs shall be readily accessible and be made available to District upon request. [Re: District Rule 1303, 40 CFR 70.6]

C.5 **Semi-Annual Monitoring/Compliance Verification Reports.** Twice a year, Greka shall submit a compliance verification report to the District. 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 shall be submitted no later than September 1. The second report shall cover calendar quarters 3 and 4 (July through December) and shall be submitted no later than March 1. Each report shall contain information necessary to verify compliance with the emission limits and other requirements of this permit (if applicable for that quarter). These reports shall be in a format approved by the District. 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 District upon request. The second report shall also include an annual report for the prior four quarters. Pursuant to Rule 212, a completed *District Annual Emissions Inventory* questionnaire. Greka may use the *Compliance Verification Report* in lieu of the *Emissions Inventory* questionnaire if the format of the CVR is acceptable to the District'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) *Controlled ICs.*

1. The monthly measured sulfur concentration of the fuel gas calculated as H₂S.
2. The annually measured total sulfur content of fuel gas consumed at each combustion unit (*each annual data will suffice for both reports*).
3. The quarterly measured high heating value (Btu/scf).
4. The total volume of gaseous fuel combusted in each combustion unit, on a daily, monthly, quarterly, and annual basis in units of standard cubic feet and million BTUs.
5. The number of hours the Caterpillar IC engine operated each month.

6. The Caterpillar IC engine calibration and maintenance logs, including quarterly inspection results, consistent with the requirements of Rule 333.F.

(b) *Uncontrolled ICEs.*

1. The monthly measured sulfur concentration of the fuel gas calculated as H₂S.
2. The annually measured total sulfur content of fuel gas consumed at each combustion unit (*each annual data will suffice for both reports*).
3. The quarterly measured high heating value (Btu/scf).
4. The total volume of gaseous fuel combusted in each combustion unit, on a daily, monthly, quarterly, and annual basis in units of standard cubic feet and million BTUs.
5. The number of hours the uncontrolled IC engines operated each month.
6. Quarterly orifice plate inspection results and dates of orifice plate replacement.
7. For Engines subject to Subpart ZZZZ the following shall be reported:
 - (i) The date of each engine oil change, the number of hours of operation since the last oil change, and the date and results of each oil analysis.
 - (ii) The date of each engine spark plug inspection and the number of hours of operation since the last spark plug inspection. Indicate if the spark plugs were replaced as a result of the inspection.
 - (iii) The date of each engine's hose and belts inspection and the number of hours of operation since the last hose and belt inspection. Indicate if any hose or belt was replaced as a result of the inspection.

(c) *Fugitive Hydrocarbon Emission Components*

1. A summary of the total components inspected.
2. A summary of the total number and percentage found leaking by component type.
3. A record of leaks from critical components.
4. A record of leaks from components that incur five repair actions within a continuous 12-month period.

5. A record of component repair actions including dates of component re-inspections.
6. An updated FHC I&M inventory due to change in component lists or diagrams.
7. A list of components installed as BACT under District Rule 331 as approved by the District.

(d) *General Reporting Requirements:*

1. A summary of each and every occurrence of non-compliance with the provisions of this permit, District rules, and any other applicable air quality requirement.
2. On an annual basis, the ROC and/or NO_x emissions from all District permit exempt activities.

C.6 **Fuel Gas Sulfur and HHV Monitoring Plan.** Greka shall abide by the District approved *Fuel Gas Sulfur and HHV Monitoring Plan* (May 2010). The plan includes the following elements:

- (e) Unit Description: A brief description of the combustion units permitted to operate using fuel gas in the Greka Cat Canyon stationary source, including the District ID #, and the purpose for operation in the source.
- (f) Fuel Monitoring Devices: A description of the fuel gas sulfur and HHV monitoring devices in place on each permitted unit. A diagram identifying the fuel gas lines by lease with the sampling location for each permitted combustion unit.
- (g) Fuel Sampling Procedures: A description of the procedures in place for collecting fuel gas samples for total reduced sulfur (TRS) and H₂S concentration, and the High Heating Value (HHV) of the fuel.
- (h) Recordkeeping: Monthly and annual records shall be kept onsite for a minimum of five (5) years and will be made available to the District upon request.
 1. The monthly records of fuel gas sulfur content and HHV will be submitted in the semi-annual and annual compliance verification report (CVR). The CVR will include the results of total reduced sulfur concentration as measured and recorded annually, the results of HHV as measured as recorded quarterly, and the results of H₂S concentration as measured and recorded monthly for each permitted combustion unit.

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

9.D **District-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 District 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 District Rule 206, this permit, as well as any applicable section of the California Health & Safety Code.

- 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 District's project file) and the District'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: District 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 District or its agents, the permittee shall make such records available or provide access to such facilities upon notice from the District. Access shall mean access consistent with California Health and Safety Code Section 41510 and Clean Air Act Section 114A.
- D.7 **Grounds for Revocation.** Failure to abide by and faithfully comply with this permit or any Rule, Order, or Regulation may constitute grounds for revocation pursuant to California Health & Safety Code Section 42307 *et seq.*
- D.8 **Odorous Organic Sulfides (Rule 310).** Greka 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: District Rule 310*].
- D.9 **Mass Emission Limitations:** Mass emissions for each equipment item associated with the ICE facility shall not exceed the values listed in Table 5.2-5 through Table 5.2-8. Emissions

for the entire facility shall not exceed the emissions limits, as listed in Table 5.3-1. [Re: District PTO 9036, ATC's 9610, 10133, 10421, and 11003]

- D.10 **Process Monitoring Systems - Operation and Maintenance.** All facility process monitoring devices listed in Section 4.6.2 of this permit shall be properly operated and maintained according to manufacturer recommended specifications. Greka shall abide by the procedures identified in the District approved *Fuel Use Monitoring and Process Monitor Calibration and Maintenance Plan* and the *Rule 333 Inspection and Maintenance Plan*. These Plans detail the manufacturer recommended maintenance and calibration schedules for fuel meters and IC engines. Where manufacturer guidance is not available, the recommendations of comparable equipment manufacturers and good engineering judgment will be used. Copies of such recommended schedules shall be kept on site.
- D.11 **Process Stream Sampling and Analysis.** Greka shall sample analyze the process streams listed in Section 4.9.2 of this permit according to the methods and frequency detailed in that Section. All process stream samples shall be taken according to District approved ASTM methods and must follow traceable chain of custody procedures. Compliance with this condition shall be assessed through compliance with the monitoring, recordkeeping and reporting (MRR) conditions listed in this permit..
- D.13 **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.
 - 4) An ATC permit shall be obtained prior to the operation of the Waukesha F1197 (District Device ID: 6467) listed on this permit.
- D.14 **Solvent Usage.** Use of solvents for wipe cleaning maintenance and laboratory use shall conform to the requirements of District Rules 202, 317, 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 the ICE facility shall not exceed the values listed in Table 5.5-1 of this permit. Compliance shall be based on the recordkeeping and reporting requirements of this permit. For short-term emissions, compliance shall be based on monthly averages.
 - (b) Operational Limits: Use of solvents for cleaning/degreasing shall conform to the requirements of District Rules 317, 322, 323 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) *Reclamation Plan.* Greka may submit a Plan to the District for the disposal of any reclaimed solvent. If the Plan is approved by the District, all solvent disposed of pursuant to the Plan will not be assumed to have evaporated as emissions into the air and, therefore, will not be counted as emissions from the source. Greka shall obtain District approval of the procedures used for such a disposal Plan. 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: Greka shall record in a log the following on a monthly basis for each solvent used: amount used; the percentage of ROC by weight (as applied); the solvent density; the amount of solvent reclaimed for District-approved disposal; whether the solvent is photochemically reactive; and, the resulting emissions to the atmosphere in units of pounds per month and pounds per day. Product sheets (MSDS or equivalent) detailing the constituents of all solvents shall be maintained in a manner readily accessible to District inspection.
 - (e) Reporting: On an annual basis, a report detailing the previous twelve month's activities shall be provided to the District. The report shall list all the data required by the Annual Compliance Report condition.

D.15 **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: District Rule 201]

D.16 **Annual Compliance Reporting.** In addition to its federally required semi-annual reporting, Greka shall also submit an annual report to the District, by March 1st of the following year

containing the information listed below. These reports shall be in a format approved by the District. All logs and other basic source data not included in the report shall be available to the District upon request. Except where noted, the annual compliance report shall include monthly summaries of the following information:

(a) *Uncontrolled and Controlled IC Engines.*

1. The volume of fuel used in units of standard cubic feet (scf) and million Btu (MMBtu) totaled for each month, quarter, and year.
2. The gross heating value (HHV) of the gaseous fuel (Btu/scf) measured quarterly.
3. Total sulfur content (as H₂S) of the gaseous fuel measured annually.

(b) *Solvent Usage.*

1. The volume (in gallons) of each non-photo-chemically reactive solvent used each month;
2. The density of each such solvent and the percentage of ROC by weight in each solvent;
3. The total weight (in pounds) of all "photo-chemically reactive" (per District Rule 102.FF) solvents used each month, and the number of days each month these were used;
4. The volume (in gallons) of surface coating used each month;
5. The percentage of ROC by weight of the surface coating used.

(c) *Adhesives and Sealants.*

1. 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.

(d) *Mass Emissions.*

1. The annual emissions (TPY) from each permitted emissions unit for each criteria pollutant
2. The annual emissions (TPY) from each exempt emissions unit for each criteria pollutant

3. The annual emissions (TPY) totaled for each criteria pollutant.
- (e) *General Reporting Requirements.*
1. A brief summary of breakdowns and variances reported/obtained per Regulation V along with the excess emissions that accompanied each occurrence.
 2. 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.
 3. A copy of the Rule 202 De Minimis Log for the stationary source.

AIR POLLUTION CONTROL OFFICER

Date

NOTES:

- (a) Permit Reevaluation due date: February 2015
- (b) Part 70 Operating Permit Expiration Date: February 2015
- (c) This permit supersedes all previously issued permits for this facility.

10. 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

10.1 Emission Calculation Documentation

Cat Canyon IC Engines

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-D refer to Tables 5.2-1, 5.2-2, and 5.2-3.

Reference A – Uncontrolled Internal Combustion Engines

See Attachment 10.2 for equipment operating characteristics of the uncontrolled ICE's.

Reference B – Controlled Internal Combustion Engines

- The maximum operating schedule is in units of hours
- The fuel default characteristics are:
 - HHV = 900 Btu/scf, for the two NSCR-controlled IC engines at the leases
 - HHV = 1100 Btu/scf, for the NSCR-controlled Compressor Plant IC engine
 - Fuel Sulfur = 239 ppmvd for all equipment
- BSFC (Caterpillar G-342, Device ID # 3831-002) = 8,140 Btu/hp-hr (based on HHV)
- Emission factor units (lb/MMBtu) are based on HHV.
- Emission factors for equipment Device ID # 3831-002 were obtained from the IC engine manufacturers; these are listed in ATC 9610 and 10133, also in Section 4 and 9.C of this permit.

The manufacturers provided the emission factors in units of g/hp-hr. The conversion of these numbers to the units of lb/MMBtu or ppmvd are performed, as follows:

Assumptions:

- @ 15% exhaust oxygen (dry basis)
- Standard conditions (1.0 atm, 60° F)

Equation 1: g/bhp-hr to ppmv

$$ppmv_i = SCF_i / MMSCF_{exhaust}$$

$$ppmv_i = (g/bhp-hr) * (BSFC^{-1}) * (lb_i/454g) * (Fuel "F" factor @ 0\% O_2)^{-1} * (10^6 Btu/MMBtu) * (MW_i^{-1}) * (379 SCF_i/lb-mole) * (10^6/MM) * (XSA)$$

Where:

$$BSFC^{-1} = [bhp-hr/Btu]$$

$$\{Fuel "F" factor @ 0\% O_2\}^{-1} [MMBtu/Scf_{exhaust}]$$

$$XSA = [20.9-15.0]/[20.9-0.0]$$

$$MW_i^{-1} = [\text{lb-mole/lb}_i]$$

Equation 2: g/bhp-hr to ppmv (K_{Fg})

$$ppmv_i = (g/bhp - hr) * BSFC^{-1} * K_{Fg}$$

$$K_{Fg} = (lb_i/454g) * (Fuel" F" factor @ 0\% O_2)^{-1} * (10^6 Btu/MMBtu) * (MW_i^{-1}) * (379SCF_i/lb - mole) * (10^6/MM) * (XSA)$$

Equation 3: lb/MMBTU to ppmv

$$ppmv_i = SCF_i/MMSCF_{exhaust}$$

$$ppmv_i = (lb_i/MMBtu) * (Fuel" F" factor @ 0\% O_2)^{-1} * (10^6 Btu/MMBtu) * (MW_i^{-1}) * (379SCF_i/lb - mole) * (10^6/MM) * (XSA)$$

Equation 4: lb/MMBTU to ppmv (K_{Flb})

$$ppmv_i = (lb_i / MMBtu) * BSFC^{-1} * K_{Flb}$$

$$K_{Flb} = (Fuel" F" factor @ 0\% O_2)^{-1} * (MW_i^{-1}) * (379SCF_i / lb - mole) * (10^6 / MM) * (XSA)$$

Acronym Description and Reference used in Equations 1 through 4:

- F = 40 CFR, §60.45.(4), 8608 scf/MMBtu @ 0% excess exhaust oxygen, dry basis; corrected to 60 °F from 68 °F.
- MW = Average molecular weight of exhaust pollutant specie(s), lb_i/lb-mole
- BSFC = ICE's brake specific fuel consumption, fuel HHV basis.
- XSA= Excess air correction factor from 0% to 15% exhaust oxygen {dimensionless constant @ 0.282}.

The following default data were used in the conversion calculation process:

Table 10.1-1: Average Exhaust Pollutant Molecular Weights

Pollutant	Molecular Weight (Lb _i /lb-mole)
NO _x as NO ₂	46.01
CO	28.01
ROC	41.31

CARB Profile # 719 for Natural Gas fired IC engines

Table 10.1-2: Calculated K_{nglb} & K_{ngg}

	NO _x	ROC	CO
K_{nglb}	269.9	300.6	443.4
K_{ngg}	594,400	662,200	976,599

SO₂ emission limits (factors) are based on mass balance equation, based on fuel sulfur. Thus, for gas-fired IC engines:

Equation 5 SO₂ Emission Limits Mass Balance Equation

$$SO_2(lb/MMBtu) = (0.169lbSO_2/scfH_2S) * (1/HHV) * (ppmvdSinf uel)$$

PM emission limits are based on USEPA, AP-42, Table 3.2.4 (gas-fired ICE). Thus, for gas-fired ICes:

$$PM(\text{lb/MMBtu}) = (0.009\text{lb/MMBtu})$$

PM₁₀: PM ratio = 1.00 (gas-fired); based on CARB data (Re: *Particulate Matter Non-attainment Plan Submittal, ARB Guidance, 1991*)

GHG Emission Factors:

GHG emissions from combustion sources are calculated using emission factors found in Tables C-1 and C-2 of 40 CFR Part 98 and global warming potentials found in Table A-1 of 40 CFR Part 98. CO₂ equivalent emission factors are calculated for CO₂, CH₄, and N₂O individually, then summed to calculate a total CO₂e emission factor. Annual CO₂e emission totals are presented in short tons.

For natural gas combustion the emission factor is:

$$\begin{aligned} (53.02 \text{ kg CO}_2/\text{MMBtu}) (2.2046 \text{ lb/kg}) &= 116.89 \text{ lb CO}_2/\text{MMBtu} \\ (0.001 \text{ kg CH}_4/\text{MMBtu}) (2.2046 \text{ lb/kg})(21 \text{ lb CO}_2\text{e/lb CH}_4) &= 0.046 \text{ lb CO}_2\text{e/MMBtu} \\ (0.0001 \text{ kg N}_2\text{O/MMBtu}) (2.2046 \text{ lb/kg})(310 \text{ lb CO}_2\text{e/lb N}_2\text{O}) &= 0.068 \text{ lb CO}_2\text{e/MMBtu} \\ \text{Total CO}_2\text{e/MMBtu} &= 116.89 + 0.046 + 0.068 = 117.00 \text{ lb CO}_2\text{e/MMBtu} \end{aligned}$$

Reference C - 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. Unsafe to monitor components (as defined in Rule 331) are considered uncontrolled.
- The component leak path definition differs from the Rule 331 definition of a component. A typical leak path count for a valve would be equal to 4 (one valve stem, a bonnet connection and two flanges).
- Leak path counts are provided by the applicant. The total count has been verified to be accurate within 5 percent of the District's count based on site checks and process/instrumentation diagram review.
- District 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).

Table 10.1-3 Fugitive Emission Factors for Oil and Gas Facilities Using the CLP Method

Component Type (Gas Service)	Production Field	
	THC EF (lb/day leak path)	ROC/THC Ratio
Valve	0.295	0.31
Connection	0.070	0.31
Compressor Seal	2.143	0.31
Pump Seal	1.123	0.31
Pressure Relief	6.670	0.31

Reference D - Solvents

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

10.2 *Equipment Calculation Spreadsheets*

-- This page left blank intentionally --

Table 10.2-1 Uncontrolled Internal Combustion Engines Permitted at the Greka Cat Canyon Stationary Source

Equipment Category	Serial #	APCD ID#	Location	Device Specifications				Operating Limitations			References
				Max RPM	BSFC (Btu/bhp-hr)	Capacity (bhp)	Capacity Limits	Hours Online (hr/yr)	Hour (MMBtu/hr)	Annual (MMBtu/yr)	
M & M (605)	8932	9170	Bell #111 - NO	1,000	11,000	46.0	Nameplate	8,760	0.51	4,433	A
M & M (605)	9837	8862	Bell #166	1,100	11,000	46.0	Nameplate	8,760	0.51	4,433	
Waukesha (145)	11508	5316	Bell #77 - NO	1,000	10,000	49.5	Orifice Plate @ 0.922"	8,760	0.50	4,336	
Waukesha (817)	11696	3382	Blockman Injection #7	1,000	10,000	49.5	Orifice Plate @ 0.922"	8,760	0.50	4,336	
M & M (605)	11854	3452	Palmer Stendl #12	1,100	11,000	46.0	Nameplate	8,760	0.51	4,433	
Waukesha (F1197)	12035	6456	Bell #42	800	9,100	49.5	Orifice Plate @ 0.98"	8,760	0.45	3,946	
M & M (605)	12069	3394	Bell #77 - NO	1,100	11,000	46.0	Nameplate	8,760	0.51	4,433	
M & M (504)	12175	3435	Bell #75	1,600	10,000	48.9	Orifice Plate @ 0.935"	8,760	0.49	4,284	
Waukesha (140)	110008	6448	Blockman #320-H	1,000	10,000	49.5	Orifice Plate @ 0.98"	8,760	0.50	4,336	
Waukesha (145)	110009	3390	Blockman Injection #14	1,000	10,000	49.5	Orifice Plate @ 0.922"	8,760	0.50	4,336	
Waukesha (140)	110015	3441	Bell #33	1,000	10,000	49.5	Orifice Plate @ 0.98"	8,760	0.50	4,336	
M&M (605)	110037	3405	Bell #164	1,100	11,000	46.0	Nameplate	8,760	0.51	4,433	
Total						575.9			5.9		

Table 10.2-2 Fugitive Hydrocarbon Emission Calculations – CLP Method

ADMINISTRATIVE INFORMATION	
Attachment:	10.2
Company:	Greka
Facility:	ICE Facility
Processed by:	JJM
Date:	12/7/2009
\\sbcapcd.org\shares\Groups\ENGR\WP\Oil&Gas\Greka\Cat_Canyon\Permits\PT70-Renew al-2006\IC Engines\ICE FHC Calcs - CLP Method.x	

Facility Type: (Choose one)									
Production Field	X								
Gas Processing Plant									
Refinery									
Offshore Platform									
Component	Count ⁽¹⁾	ROC ⁽²⁾ Emission Factor (lbs/day-clp)	ROC/THC Ratio	Uncontrolled ROC Emission (lbs/day)	ROC Control Eff	Controlled ROC Emission (lbs/hr)	Controlled ROC Emission (lbs/day)	Controlled ROC Emission (Tons/Qtr)	Controlled ROC Emission (Tons/year)
Gas Condensate Service									
Valves - Acc/Inacc	7	0.295	0.31	0.64	0.80	0.005	0.128	0.006	0.023
Valves - Bellows		0.295	0.31	0.00	1.00	0.000	0.000	0.000	0.000
Valves - Unsafe		0.295	0.31	0.00	0.00	0.000	0.000	0.000	0.000
Valves - Low Emitting		0.295	0.31	0.00	0.00	0.000	0.000	0.000	0.000
Valves - E-500		0.295	0.31	0.00	0.85	0.000	0.000	0.000	0.000
Valves - E-100		0.295	0.31	0.00	0.90	0.000	0.000	0.000	0.000
Flanges - Acc/Inacc	188	0.070	0.31	4.08	0.80	0.034	0.816	0.037	0.149
Flanges - Unsafe		0.070	0.31	0.00	0.00	0.000	0.000	0.000	0.000
Flanges - E-500		0.070	0.31	0.00	0.85	0.000	0.000	0.000	0.000
Flanges - E-100		0.070	0.31	0.00	0.90	0.000	0.000	0.000	0.000
Compressor Seals - To Atm	4	2.143	0.31	2.66	0.80	0.022	0.531	0.024	0.097
Compressor Seals - To VRS		2.143	0.31	0.00	1.00	0.000	0.000	0.000	0.000
Compressor Seals - E-500		2.143	0.31	0.00	0.85	0.000	0.000	0.000	0.000
Compressor seals - E-100		2.143	0.31	0.00	0.90	0.000	0.000	0.000	0.000
PSV - To Atm	4	6.670	0.31	8.27	0.80	0.069	1.654	0.075	0.302
PSV - To VRS		6.670	0.31	0.00	1.00	0.000	0.000	0.000	0.000
PSV - E-500		6.670	0.31	0.00	0.85	0.000	0.000	0.000	0.000
PSV - E-100		6.670	0.31	0.00	0.90	0.000	0.000	0.000	0.000
Pump Seals		1.123	0.31	0.00	0.80	0.000	0.000	0.000	0.000
Pump Seals - E-500		1.123	0.31	0.00	0.85	0.000	0.000	0.000	0.000
Pump Seals - E-100		1.123	0.31	0.00	0.90	0.000	0.000	0.000	0.000
Gas Service Total	203			15.65		0.130	3.130	0.143	0.571

Oil Service									
Valves - Acc/Inacc		0.0041	0.56	0.00	0.80	0.000	0.000	0.000	0.000
Valves - Unsafe		0.0041	0.56	0.00	0.00	0.000	0.000	0.000	0.000
Valves - E-500		0.0041	0.56	0.00	0.85	0.000	0.000	0.000	0.000
Valves - E-100		0.0041	0.56	0.00	0.90	0.000	0.000	0.000	0.000
Flanges - Acc/Inacc		0.0020	0.56	0.00	0.80	0.000	0.000	0.000	0.000
Flanges - Unsafe		0.0020	0.56	0.00	0.00	0.000	0.000	0.000	0.000
Flanges - E-500		0.0020	0.56	0.00	0.85	0.000	0.000	0.000	0.000
Flanges - E-100		0.0020	0.56	0.00	0.90	0.000	0.000	0.000	0.000
Pump Seals - Single		0.0039	0.56	0.00	0.80	0.000	0.000	0.000	0.000
Pump Seals - E-500		0.0039	0.56	0.00	0.85	0.000	0.000	0.000	0.000
Pump Seals - E-100		0.0039	0.56	0.00	0.90	0.000	0.000	0.000	0.000
PSV - To Atm		0.2670	0.56	0.00	0.80	0.000	0.000	0.000	0.000
PSV - To VRS		0.2670	0.56	0.00	1.00	0.000	0.000	0.000	0.000
PSV - E-500		0.2670	0.56	0.00	0.85	0.000	0.000	0.000	0.000
PSV - E-100		0.2670	0.56	0.00	0.00	0.000	0.000	0.000	0.000
Oil Service Total	0			0.000		0.000	0.000	0.000	0.000
Total	203			15.65		0.130	3.130	0.143	0.571

Notes:

1. Source:
2. APCD P&P # 6100.060.1998.
3. APCD P&P # 6100.061.1998
4. A 80% efficiency is assigned to fugitive components Rule 331 implementation.

10.3 Fee Calculations

Permit fees for the ICE facility are based on equipment rating, pursuant to District Rule 210.I.B.2 and Schedule A. See Attachment 10.5 for a list of fee-permitted equipment at this facility.

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 District Rule 210.I.C.

FEE STATEMENT

PT-70/Reeval No. 08036 - R8

FID: 03831 Cat Canyon IC Engines / SSID: 02658



Device No.	Device Name	Fee Schedule	Qty of Fee Units	Fee per Unit	Fee Units	Max or Min. Fee Apply?	Number of Same Devices	Pro Rate Factor	Device Fee	Penalty Fee?	Fee Credit	Total Fee per Device
006466	Controlled IC Engine	A3	1.830	476.20	Per 1 million Btu input	No	1	1.000	871.45	0.00	0.00	871.45
006467	Controlled IC Engine: Waukesha	A3	1.780	476.20	Per 1 million Btu input	No	1	1.000	847.64	0.00	0.00	847.64
009170	Uncontrolled IC Engine:	A3	0.510	476.20	Per 1 million Btu input	No	1	1.000	242.86	0.00	0.00	242.86
008862	Uncontrolled IC Engine: #9837	A3	0.510	476.20	Per 1 million Btu input	No	1	1.000	242.86	0.00	0.00	242.86
005316	Uncontrolled IC Engine: #11508	A3	0.500	476.20	Per 1 million Btu input	No	1	1.000	238.10	0.00	0.00	238.10
003382	Uncontrolled IC Engine: #11696	A3	0.500	476.20	Per 1 million Btu input	No	1	1.000	238.10	0.00	0.00	238.10
003452	Uncontrolled IC Engine: #11854	A3	0.510	476.20	Per 1 million Btu input	No	1	1.000	242.86	0.00	0.00	242.86
003394	Uncontrolled IC Engine: #12069	A3	0.510	476.20	Per 1 million Btu input	No	1	1.000	242.86	0.00	0.00	242.86
006456	Uncontrolled IC Engine: #12035	A3	0.450	476.20	Per 1 million Btu input	No	1	1.000	214.29	0.00	0.00	214.29
003435	Uncontrolled IC Engine: #12175	A3	0.490	476.20	Per 1 million Btu input	No	1	1.000	233.34	0.00	0.00	233.34
006448	Uncontrolled IC Engine: #110008	A3	0.500	476.20	Per 1 million Btu input	No	1	1.000	238.10	0.00	0.00	238.10
003390	Uncontrolled IC Engine: #110009	A3	0.500	476.20	Per 1 million Btu input	No	1	1.000	238.10	0.00	0.00	238.10
003441	Uncontrolled IC Engine: #110015	A3	0.500	476.20	Per 1 million Btu input	No	1	1.000	238.10	0.00	0.00	238.10
003405	Uncontrolled IC Engine: #110037	A3	0.510	476.20	Per 1 million Btu input	No	1	1.000	242.86	0.00	0.00	242.86
Device Fee Sub-Totals =									\$4,571.52	\$0.00	\$0.00	
Device Fee Total =												\$4,571.52

Permit Fee

Fee Based on Devices 4,571

Fee Statement Grand Total = \$4,571

Notes:

- (1) Fee Schedule Items are listed in District 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 (PSTE)

Facility	Units	NO _x	ROC	CO	SO _x	PM	PM10	GHG
ICEs	lbs/day	279.74	21.73	259.60	19.19	1.84	1.84	21,959.96
	TPY	50.68	3.37	42.74	3.47	1.34	1.34	3,984.86

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

Facility	FID	Units	NO _x	ROC	CO	SO _x	PM	PM10	GHG
Bell Lease	3211	lbs/day	20.94	246.74	33.95	71.65	1.57	1.57	31,870.80
		TPY	3.76	44.83	6.20	13.08	0.29	0.29	5,813.42
Blockman Lease	3306	lbs/day	0.00	43.44	0.00	0.00	0.00	0.00	0.00
		TPY	0.00	7.93	0.00	0.00	0.00	0.00	0.00
ICE Facility	3831	lbs/day	279.74	21.73	259.60	19.19	1.84	1.84	21,959.96
		TPY	50.68	3.37	42.74	3.47	1.34	1.34	3,984.86
Palmer Stendl Lease	3307	lbs/day	0.00	17.53	0.00	0.00	0.00	0.00	0.00
		TPY	0.00	3.20	0.00	0.00	0.00	0.00	0.00
TOTALS		lbs/day	300.68	329.44	293.55	90.84	3.41	3.41	53,830.76
		TPY	54.44	59.33	48.94	16.55	1.63	1.63	9,798.28

Table 10.4-3 Stationary Source Net Emission Increase Since 1990 (FNEI-90)

Facility	Permits	Units	NOx	ROC	CO	SOx	PM	PM10
Bell Lease	ATC 9146, 9412, 9387, 13204, 13264, 13547, 13661, 13769	lbs/hr	0.45	2.32	7.11	0.91	0.13	0.13
		lbs/day	10.72	37.63	170.44	21.80	3.09	3.09
		TPQ	0.49	1.74	8.19	1.00	0.14	0.14
		TPY	1.95	6.93	32.73	3.98	0.56	0.56
Blockman Lease	ATC 9964, 13690	lbs/hr	0.00	0.05	0.00	0.00	0.00	0.00
		lbs/day	0.00	1.05	0.00	0.00	0.00	0.00
		TPQ	0.00	0.05	0.00	0.00	0.00	0.00
		TPY	0.00	0.19	0.00	0.00	0.00	0.00
ICE Facility	ATC 9610, 9975, 10133, 10421	lbs/hr	0.00	0.00	0.00	0.00	0.00	0.00
		lbs/day	0.00	0.00	0.00	0.00	0.00	0.00
		TPQ	0.00	0.00	0.00	0.00	0.00	0.00
		TPY	0.00	0.00	0.00	0.00	0.00	0.00
Palmer Stendl	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
Source NEI	Source NEI	lbs/hr	0.45	2.39	7.11	0.91	0.13	0.13
		lbs/day	10.72	39.16	170.44	21.80	3.09	3.09
		TPQ	0.49	1.82	8.19	1.00	0.14	0.14
		TPY	1.95	7.22	32.73	3.98	0.56	0.56

10.5 Equipment List

Wednesday, February 20, 2013

Santa Barbara County District – Equipment List

PT-70/Reeval 08036 R8 / FID: 03831 Cat Canyon IC Engines / SSID: 02658

A PERMITTED EQUIPMENT

1 Controlled IC Engine

<i>Device ID #</i>	006466	<i>Device Name</i>	Controlled IC Engine
<i>Rated Heat Input</i>	1.830 MMBtu/Hour	<i>Physical Size</i>	225.00 Brake Horsepower
<i>Manufacturer</i>	Caterpillar	<i>Operator ID</i>	
<i>Model</i>	G-342	<i>Serial Number</i>	12253
<i>Location Note</i>			
<i>Device</i>	Controlled IC Engine: NSCR		
<i>Description</i>			

2 Fugitive Hydrocarbons - Gas Condensate Service - CLP

2.1 Valves - Acc/Inacc

<i>Device ID #</i>	100352	<i>Device Name</i>	Valves - Acc/Inacc
<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>			
<i>Description</i>			

2.2 Flanges - Acc/Inacc

<i>Device ID #</i>	100353	<i>Device Name</i>	Flanges - Acc/Inacc
<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>			
<i>Description</i>			

2.3 PSV - To Atm

<i>Device ID #</i>	100355	<i>Device Name</i>	PSV - To Atm
<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>			
<i>Description</i>			

3 Controlled IC Engine: Waukesha

<i>Device ID #</i>	006467	<i>Device Name</i>	Controlled IC Engine: Waukesha
<i>Rated Heat Input</i>	1.780 MMBtu/Hour	<i>Physical Size</i>	190.00 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	Injection #2
<i>Model</i>	F1197	<i>Serial Number</i>	110007
<i>Location Note</i>			
<i>Device</i>	Controlled IC Engine: NSCR		
<i>Description</i>			

4 Uncontrolled IC Engine: 8932

<i>Device ID #</i>	009170	<i>Device Name</i>	Uncontrolled IC Engine:
<i>Rated Heat Input</i>		<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer</i>	M & M	<i>Operator ID</i>	
<i>Model</i>	605	<i>Serial Number</i>	8932
<i>Location Note</i>	Bell #111 - NO		
<i>Device</i>	Uncontrolled ICE, maximum heat input rating: 0.51 MMBtu/hr, rated bhp @ 1,100 RPM; capacity limits: Nameplate; on line: 8,760 hr/yr		
<i>Description</i>			

5 Uncontrolled IC Engine: 9837

<i>Device ID #</i>	008862	<i>Device Name</i>	Uncontrolled IC Engine: #9837
<i>Rated Heat Input</i>		<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer Model</i>	M & M 605	<i>Operator ID Serial Number</i>	9837
<i>Location Note</i>	Bell #166		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 605, maximum heat input rating: 0.51 MMBtu/hr, horsepower: 46.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 11,000 BTU/bhp-hr; on line: 8,760 hr/yr		

6 Uncontrolled IC Engine: 11508

<i>Device ID #</i>	005316	<i>Device Name</i>	Uncontrolled IC Engine: #11508
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer Model</i>	Waukesha 145	<i>Operator ID Serial Number</i>	11508
<i>Location Note</i>	Bell #77 - NO		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

7 Uncontrolled IC Engine: 11696

<i>Device ID #</i>	003382	<i>Device Name</i>	Uncontrolled IC Engine: #11696
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer Model</i>	Waukesha 817	<i>Operator ID Serial Number</i>	11696
<i>Location Note</i>	Blochman Injection #7		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 817, maximum heat input rating: MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

8 Uncontrolled IC Engine: 11854

<i>Device ID #</i>	003452	<i>Device Name</i>	Uncontrolled IC Engine: #11854
<i>Rated Heat Input</i>		<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer Model</i>	M & M 605	<i>Operator ID Serial Number</i>	11854
<i>Location Note</i>	Palmer Stendl #12		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 605, maximum heat input rating: 0.51 MMBtu/hr, horsepower: 46.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 11,000 BTU/bhp-hr; on line: 8,760 hr/yr		

9 Uncontrolled IC Engine: 12069

<i>Device ID #</i>	003394	<i>Device Name</i>	Uncontrolled IC Engine: #12069
<i>Rated Heat Input</i>		<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer Model</i>	M & M 605	<i>Operator ID Serial Number</i>	12069
<i>Location Note</i>	Bell #77 - NO		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 605, maximum heat input rating: 0.51 MMBtu/hr, horsepower: 46.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 11,000 BTU/bhp-hr; on line: 8,760 hr/yr		

10 Uncontrolled IC Engine: 12035

<i>Device ID #</i>	006456	<i>Device Name</i>	Uncontrolled IC Engine: #12035
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer Model</i>	Waukesha F1197	<i>Operator ID Serial Number</i>	12035
<i>Location Note</i>	Bell #42		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: F1197, maximum heat input rating: 0.45 MMBtu/hr, horsepower: 49.5 bhp @ 800 RPM; capacity limits: Orifice Plate @ 0.98"; BSFC: BTU/bhp-hr; on line: 8,760 hr/yr		

11 Uncontrolled IC Engine: 12175

<i>Device ID #</i>	003435	<i>Device Name</i>	Uncontrolled IC Engine: #12175
<i>Rated Heat Input</i>		<i>Physical Size</i>	48.90 Brake Horsepower
<i>Manufacturer Model</i>	M & M 504	<i>Operator ID Serial Number</i>	12175
<i>Location Note</i>	Bell #75		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 504, maximum heat input rating: 0.49 MMBtu/hr, horsepower: 48.9 bhp @ 1600 RPM; capacity limits: Orifice Plate @ 0.935"; BSFC: 10,000 BTU/bhp-hr; on line: 8,760 hr/yr		

12 Uncontrolled IC Engine: 110008

<i>Device ID #</i>	006448	<i>Device Name</i>	Uncontrolled IC Engine: #110008
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer Model</i>	Waukesha 140	<i>Operator ID Serial Number</i>	110008
<i>Location Note</i>	Blochman #320-H		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: , maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.98"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

13 Uncontrolled IC Engine: 110009

<i>Device ID #</i>	003390	<i>Device Name</i>	Uncontrolled IC Engine: #110009
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer Model</i>	Waukesha 145	<i>Operator ID Serial Number</i>	110009
<i>Location Note</i>	Blochman Injection #14		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

14 Uncontrolled IC Engine: 110015

<i>Device ID #</i>	003441	<i>Device Name</i>	Uncontrolled IC Engine: #110015
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer Model</i>	Waukesha 140	<i>Operator ID Serial Number</i>	110015
<i>Location Note</i>	Bell #33		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 140 , maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.98"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

15 Uncontrolled IC Engine: 110037

<i>Device ID #</i>	003405	<i>Device Name</i>	Uncontrolled IC Engine: #110037
<i>Rated Heat Input</i>		<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer</i>	M & M	<i>Operator ID</i>	
<i>Model</i>	605	<i>Serial Number</i>	110037
<i>Location Note</i>	Bell #164		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 605, maximum heat input rating: 0.51 MMBtu/hr, horsepower: 46.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 11,000 BTU/bhp-hr; on line: 8,760 hr/yr		

E DEPERMITTED EQUIPMENT

1 Compressor

<i>Device ID #</i>	003363	<i>Device Name</i>	Compressor
<i>Rated Heat Input</i>		<i>Physical Size</i>	400.00 Brake Horsepower
<i>Manufacturer</i>	Clark	<i>Operator ID</i>	3831-005
<i>Model</i>	RA-4	<i>Serial Number</i>	19718
<i>Location Note</i>			
<i>Device Description</i>	Rated at 400 bhp at 300 RPM (limited by nameplate), Electric		

2 Compressor

<i>Device ID #</i>	003364	<i>Device Name</i>	Compressor
<i>Rated Heat Input</i>		<i>Physical Size</i>	400.00 Brake Horsepower
<i>Manufacturer</i>	Clark	<i>Operator ID</i>	3831-006
<i>Model</i>	RA-4	<i>Serial Number</i>	19687
<i>Location Note</i>			
<i>Device Description</i>	Rated at 400 bhp at 300 RPM (limited by nameplate), Electric		

3 Uncontrolled IC Engine

<i>Device ID #</i>	003389	<i>Device Name</i>	Uncontrolled IC Engine
<i>Rated Heat Input</i>	0.500 MMBtu/Hour	<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer Model</i>	Waukesha 145	<i>Operator ID Serial Number</i>	1077
<i>Location Note</i>	Bell #132		
<i>Device Description</i>	Uncontrolled engine, rated bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"		

4 Uncontrolled IC Engine: 8063

<i>Device ID #</i>	003434	<i>Device Name</i>	Uncontrolled IC Engine:
<i>Rated Heat Input</i>	0.510 MMBtu/Hour	<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer Model</i>	M & M 605	<i>Operator ID Serial Number</i>	8063
<i>Location Note</i>	Bell #77 - NO		
<i>Device Description</i>	Uncontrolled ICE, rated bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC:		

5 Uncontrolled IC Engine: 7852

<i>Device ID #</i>	003450	<i>Device Name</i>	Uncontrolled IC Engine:
<i>Rated Heat Input</i>	0.800 MMBtu/Hour	<i>Physical Size</i>	48.00 Brake Horsepower
<i>Manufacturer Model</i>	M & M 800	<i>Operator ID Serial Number</i>	7852
<i>Location Note</i>	Bell #120		
<i>Device Description</i>	Uncontrolled ICE, rated bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.85"		

6 Uncontrolled IC Engine: 8495

<i>Device ID #</i>	003407	<i>Device Name</i>	Uncontrolled IC Engine:
<i>Rated Heat Input</i>		<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer Model</i>	M & M 605	<i>Operator ID Serial Number</i>	8495
<i>Location Note</i>	Bell #57 - NO		
<i>Device Description</i>	Uncontrolled ICE, maximum heat input rating: 0.51 MMBtu/hr, rated bhp @ 1,100 RPM; on line: 8,760 hr/yr		

7 Uncontrolled IC Engine: 8481

<i>Device ID #</i>	003439	<i>Device Name</i>	Uncontrolled IC Engine: 8481
<i>Rated Heat Input</i>		<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer Model</i>	M & M, 605	<i>Operator ID Serial Number</i>	8481
<i>Location Note</i>	Bell #53		
<i>Device Description</i>	Uncontrolled ICE, input rating: 0.51 MMBtu/hr, rated bhp @ 1,100 RPM; on line: 8,760 hr/yr		

8 Uncontrolled IC Engine: 8570

<i>Device ID #</i>	003453	<i>Device Name</i>	Uncontrolled IC Engine: 8570
<i>Rated Heat Input</i>	0.280 MMBtu/Hour	<i>Physical Size</i>	25.00 Brake Horsepower
<i>Manufacturer Model</i>	M & M 283	<i>Operator ID Serial Number</i>	8570
<i>Location Note</i>	Bell #170		
<i>Device Description</i>	Uncontrolled ICE, maximum heat input rating: 0.28 MMBtu/hr, rated bhp @ 1,100 RPM; on line: 8,760 hr/yr		

9 Uncontrolled IC Engine: 9563

<i>Device ID #</i>	005320	<i>Device Name</i>	Uncontrolled IC Engine:
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	145	<i>Serial Number</i>	9563
<i>Location Note</i>	Bell #169		
<i>Device Description</i>	Uncontrolled ICE, maximum heat input rating: 0.50 MMBtu/hr, rated bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; on line: 8,760 hr/yr		

10 Uncontrolled IC Engine: 9573

<i>Device ID #</i>	006449	<i>Device Name</i>	Uncontrolled IC Engine:
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	145	<i>Serial Number</i>	9573
<i>Location Note</i>	Blochman #315-H		
<i>Device Description</i>	Uncontrolled ICE, maximum heat input rating: 0.50 MMBtu/hr, rated bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; on line: 8,760 hr/yr		

11 Uncontrolled IC Engine: 9628

<i>Device ID #</i>	003443	<i>Device Name</i>	Uncontrolled IC Engine: #9628
<i>Rated Heat Input</i>		<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer</i>	M & M	<i>Operator ID</i>	
<i>Model</i>	605	<i>Serial Number</i>	9628
<i>Location Note</i>	Bell #79		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 605, maximum heat input rating: 0.51 MMBtu/hr, horsepower: 46.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 11,000 BTU/bhp-hr; on line: 8,760 hr/yr		

12 Uncontrolled IC Engine: 9995

<i>Device ID #</i>	006451	<i>Device Name</i>	Uncontrolled IC Engine: #9995
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer Model</i>	Waukesha 145	<i>Operator ID Serial Number</i>	9995
<i>Location Note</i>	Blochman Injection #10		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.92"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

13 Uncontrolled IC Engine: 10353

<i>Device ID #</i>	003430	<i>Device Name</i>	Uncontrolled IC Engine: #10353
<i>Rated Heat Input</i>		<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer Model</i>	M & M 605	<i>Operator ID Serial Number</i>	10353
<i>Location Note</i>	Bell #77 - NO		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 605, maximum heat input rating: 0.51 MMBtu/hr, horsepower: 46.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 11,000 BTU/bhp-hr; on line: 8,760 hr/yr		

14 Uncontrolled IC Engine: 10771

<i>Device ID #</i>	003384	<i>Device Name</i>	Uncontrolled IC Engine: #10771
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer Model</i>	Waukesha 145	<i>Operator ID Serial Number</i>	10771
<i>Location Note</i>	Bell #97		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: , maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

15 Uncontrolled IC Engine: 10411

<i>Device ID #</i>	003392	<i>Device Name</i>	Uncontrolled IC Engine: #10411
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer Model</i>	Waukesha 145	<i>Operator ID Serial Number</i>	10411
<i>Location Note</i>	Bell #321		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

16 Uncontrolled IC Engine: 10890

<i>Device ID #</i>	003426	<i>Device Name</i>	Uncontrolled IC Engine: #10890
<i>Rated Heat Input</i>		<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer Model</i>	M & M 605	<i>Operator ID Serial Number</i>	10890
<i>Location Note</i>	Bell #41		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 605, maximum heat input rating: 0.51 MMBtu/hr, horsepower: 46.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 11,000 BTU/bhp-hr; on line: 8,760 hr/yr		

17 Uncontrolled IC Engine: 10983

<i>Device ID #</i>	003388	<i>Device Name</i>	Uncontrolled IC Engine: #10983
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer Model</i>	Waukesha 145	<i>Operator ID Serial Number</i>	10983
<i>Location Note</i>	Bell #57 - NO		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

18 Uncontrolled IC Engine: 10957

<i>Device ID #</i>	006446	<i>Device Name</i>	Uncontrolled IC Engine: #10957
<i>Rated Heat Input</i>		<i>Physical Size</i>	39.00 Brake Horsepower
<i>Manufacturer Model</i>	M & M 425	<i>Operator ID Serial Number</i>	10957
<i>Location Note</i>	Bell #57 - NO		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 425, maximum heat input rating: 0.41 MMBtu/hr, horsepower: 39.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 10,500 BTU/bhp-hr; on line: 8,760 hr/yr		

19 Uncontrolled IC Engine: 11492

<i>Device ID #</i>	005312	<i>Device Name</i>	Uncontrolled IC Engine: #11492
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer Model</i>	Waukesha 145	<i>Operator ID Serial Number</i>	11492
<i>Location Note</i>	Bell #77 - NO		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.98"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

20 Uncontrolled IC Engine: 11188

<i>Device ID #</i>	005314	<i>Device Name</i>	Uncontrolled IC Engine: #11188
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer Model</i>	Waukesha 145	<i>Operator ID Serial Number</i>	11188
<i>Location Note</i>	Bell #77 - NO		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

21 Uncontrolled IC Engine: 11493

<i>Device ID #</i>	005315	<i>Device Name</i>	Uncontrolled IC Engine: #11493
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer Model</i>	Waukesha 145	<i>Operator ID Serial Number</i>	11493
<i>Location Note</i>	Blochman Injection #3		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

22 Uncontrolled IC Engine: 11516

<i>Device ID #</i>	003380	<i>Device Name</i>	Uncontrolled IC Engine: #11516
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer Model</i>	Waukesha 145	<i>Operator ID Serial Number</i>	11516
<i>Location Note</i>	Blochman Injection #4		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

23 Uncontrolled IC Engine: 11509

<i>Device ID #</i>	003386	<i>Device Name</i>	Uncontrolled IC Engine: #11509
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer Model</i>	Waukesha 145	<i>Operator ID Serial Number</i>	11509
<i>Location Note</i>	Blochman Charge Pump		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

24 Uncontrolled IC Engine: 11526

<i>Device ID #</i>	003381	<i>Device Name</i>	Uncontrolled IC Engine: #11526
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer Model</i>	Waukesha 145	<i>Operator ID Serial Number</i>	11526
<i>Location Note</i>	Blochman Injection #6		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

25 Uncontrolled IC Engine: 11544

<i>Device ID #</i>	003401	<i>Device Name</i>	Uncontrolled IC Engine: #11544
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	145	<i>Serial Number</i>	11544
<i>Location Note</i>	Bell #57 - NO		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

26 Uncontrolled IC Engine: 11545

<i>Device ID #</i>	006453	<i>Device Name</i>	Uncontrolled IC Engine: #11545
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	145	<i>Serial Number</i>	11545
<i>Location Note</i>	Palmer Stendl #12-H		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

27 Uncontrolled IC Engine: 11711

<i>Device ID #</i>	003398	<i>Device Name</i>	Uncontrolled IC Engine: #11711
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer Model</i>	Waukesha 145	<i>Operator ID Serial Number</i>	11711
<i>Location Note</i>	Bell #92		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

28 Uncontrolled IC Engine: 11706

<i>Device ID #</i>	006454	<i>Device Name</i>	Uncontrolled IC Engine: #11706
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer Model</i>	Waukesha 140	<i>Operator ID Serial Number</i>	11706
<i>Location Note</i>	Bell #28		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 140, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.98"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

29 Uncontrolled IC Engine: 11754

<i>Device ID #</i>	003413	<i>Device Name</i>	Uncontrolled IC Engine: #11754
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	140	<i>Serial Number</i>	11754
<i>Location Note</i>	Bell #77 - NO		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 140, maximum heat input rating: 0.45 MMBtu/hr, horsepower: 49.5 bhp @ 1,500 RPM; capacity limits: Orifice Plate @ 0.98"; BSFC: 9100 BTU/bhp-hr; on line: 8,760 hr/yr		

30 Uncontrolled IC Engine: 11796

<i>Device ID #</i>	003417	<i>Device Name</i>	Uncontrolled IC Engine: #11796
<i>Rated Heat Input</i>		<i>Physical Size</i>	41.80 Brake Horsepower
<i>Manufacturer</i>	Waukesha	<i>Operator ID</i>	
<i>Model</i>	195	<i>Serial Number</i>	11796
<i>Location Note</i>	Bell #57 - NO		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 195, maximum heat input rating: 0.38 MMBtu/hr, horsepower: 41.8 bhp @ 2,200 RPM; capacity limits: Orifice Plate @ 1.65"; BSFC: 9100 BTU/bhp-hr; on line: 8,760 hr/yr		

31 Uncontrolled IC Engine: 11859

<i>Device ID #</i>	003433	<i>Device Name</i>	Uncontrolled IC Engine: #11859
<i>Rated Heat Input</i>		<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer Model</i>	M & M 605	<i>Operator ID Serial Number</i>	11859
<i>Location Note</i>	Bell #111		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 605, maximum heat input rating: 0.51 MMBtu/hr, horsepower: 46.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 11,000 BTU/bhp-hr; on line: 8,760 hr/yr		

32 Uncontrolled IC Engine: 11826

<i>Device ID #</i>	100349	<i>Device Name</i>	Uncontrolled IC Engine: #11826
<i>Rated Heat Input</i>		<i>Physical Size</i>	25.00 Brake Horsepower
<i>Manufacturer Model</i>	M & M 283	<i>Operator ID Serial Number</i>	11826
<i>Location Note</i>	Bell #58-H		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: , maximum heat input rating: 0.28 MMBtu/hr, horsepower: 25.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 11,000 BTU/bhp-hr; on line: 8,760 hr/yr		

33 Uncontrolled IC Engine: 11923

<i>Device ID #</i>	005319	<i>Device Name</i>	Uncontrolled IC Engine: #11923
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer Model</i>	Waukesha 145	<i>Operator ID Serial Number</i>	11923
<i>Location Note</i>	Bell #87		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

34 Uncontrolled IC Engine: 11949

<i>Device ID #</i>	006455	<i>Device Name</i>	Uncontrolled IC Engine: #11949
<i>Rated Heat Input</i>		<i>Physical Size</i>	41.80 Brake Horsepower
<i>Manufacturer Model</i>	Waukesha 195	<i>Operator ID Serial Number</i>	11949
<i>Location Note</i>	Bell #77 - NO		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 195, maximum heat input rating: 0.38 MMBtu/hr, horsepower: 41.8 bhp @ 2,200 RPM; capacity limits: Orifice Plate @ 1.65"; BSFC: 9100 BTU/bhp-hr; on line: 8,760 hr/yr		

35 Uncontrolled IC Engine: 110006

<i>Device ID #</i>	006458	<i>Device Name</i>	Uncontrolled IC Engine: #110006
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer Model</i>	Waukesha 145	<i>Operator ID Serial Number</i>	110006
<i>Location Note</i>	Blochman Injection #9		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

36 Uncontrolled IC Engine: 110011

<i>Device ID #</i>	003412	<i>Device Name</i>	Uncontrolled IC Engine: #110011
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer Model</i>	Waukesha 140	<i>Operator ID Serial Number</i>	110011
<i>Location Note</i>	Blochman #21-H		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 140 , maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.98"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		

37 Uncontrolled IC Engine: 110031

<i>Device ID #</i>	008864	<i>Device Name</i>	Uncontrolled IC Engine: #110031
<i>Rated Heat Input</i>		<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer Model</i>	M & M 605	<i>Operator ID Serial Number</i>	110031
<i>Location Note</i>	South Cat Canyon		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 605, maximum heat input rating: 0.51 MMBtu/hr, horsepower: 46.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 11,000 BTU/bhp-hr; on line: 8,760 hr/yr		

38 Uncontrolled IC Engine: 110032

<i>Device ID #</i>	009101	<i>Device Name</i>	Uncontrolled IC Engine: #110032
<i>Rated Heat Input</i>		<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer Model</i>	M & M 605	<i>Operator ID Serial Number</i>	110032
<i>Location Note</i>	South Cat Canyon		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 605, maximum heat input rating: 0.51 MMBtu/hr, horsepower: 46.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 11,000 BTU/bhp-hr; on line: 8,760 hr/yr		

39 Uncontrolled IC Engine: 110034

<i>Device ID #</i>	009103	<i>Device Name</i>	Uncontrolled IC Engine: #110034
<i>Rated Heat Input</i>		<i>Physical Size</i>	39.00 Brake Horsepower
<i>Manufacturer Model</i>	M & M 425	<i>Operator ID Serial Number</i>	110034
<i>Location Note</i>	South Cat Canyon		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 425, maximum heat input rating: 0.41 MMBtu/hr, horsepower: 39.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 10,500 BTU/bhp-hr; on line: 8,760 hr/yr		

40 Uncontrolled IC Engine: 110035

<i>Device ID #</i>	009104	<i>Device Name</i>	Uncontrolled IC Engine: #110035
<i>Rated Heat Input</i>		<i>Physical Size</i>	39.00 Brake Horsepower
<i>Manufacturer Model</i>	M & M 425	<i>Operator ID Serial Number</i>	110035
<i>Location Note</i>	South Cat Canyon		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 425, maximum heat input rating: MMBtu/hr, horsepower: 39.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 10,500 BTU/bhp-hr; on line: 8,760 hr/yr		

41 Uncontrolled IC Engine: 11113N

<i>Device ID #</i>	003378	<i>Device Name</i>	Uncontrolled IC Engine: #11113N
<i>Rated Heat Input</i>		<i>Physical Size</i>	46.00 Brake Horsepower
<i>Manufacturer Model</i>	M & M 605	<i>Operator ID Serial Number</i>	11113N
<i>Location Note</i>	Bell #171		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: M & M, Model: 605, maximum heat input rating: 0.51 MMBtu/hr, horsepower: 46.0 bhp @ 1,100 RPM; capacity limits: Nameplate; BSFC: 11,000 BTU/bhp-hr; on line: 8,760 hr/yr		

42 Uncontrolled IC Engine: 11509S

<i>Device ID #</i>	009100	<i>Device Name</i>	Uncontrolled IC Engine: #11509S
<i>Rated Heat Input</i>		<i>Physical Size</i>	49.50 Brake Horsepower
<i>Manufacturer Model</i>	Waukesha 145	<i>Operator ID Serial Number</i>	11509S
<i>Location Note</i>	Blochman Charge Pump		
<i>Device Description</i>	Uncontrolled IC Engine: Manufacturer: Waukesha, Model: 145, maximum heat input rating: 0.50 MMBtu/hr, horsepower: 49.5 bhp @ 1,000 RPM; capacity limits: Orifice Plate @ 0.922"; BSFC: 10000 BTU/bhp-hr; on line: 8,760 hr/yr		
