air pollution control district
SANTA BARBARA COUNTY

DRAFT

PERMIT to OPERATE No. 7904-R12

and

PART 70 OPERATING PERMIT No. 7904-R12

SOUTH ELLWOOD FIELD SOURCE
ELLWOOD ONSHORE FACILITY

7979 HOLLISTER AVENUE
GOLETA, CA 93117

OPERATOR

California State Lands Commission / Beacon West Energy Group

OWNERSHIP

Venoco LLC

Santa Barbara County
Air Pollution Control District

June 2021

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ABBREVIATIONS/ACRONYMS

AP-42	USEPA's *Compilation of Emission Factors*
API	American Petroleum Institute
ASTM	American Society for Testing Materials
ATC	Authority to Construct
BACT	Best Available Control Technology
Bpd	barrels per day (1 barrel = 42 gallons)
CAM	compliance assurance monitoring
CEMS	continuous emissions monitoring
CO	Carbon Monoxide
CO2	Carbon Dioxide
District	Santa Barbara County Air Pollution Control District
DRE	Destruction Removal Efficiency
Dscf	dry standard cubic foot
EOF	Ellwood Onshore Facility
EU	emission unit
°F	degree Fahrenheit
GAC	Granulated Activated Carbon
Gal	gallon
Gr	grain
HAP	hazardous air pollutant (as defined by CAAA, Section 112(b))
HHV	Higher Heating Value
H_2S	hydrogen sulfide
IC	Internal Combustion
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
LHV	Lower Heating Value
LPG	liquid petroleum gas
M	thousand
MACT	Maximum Achievable Control Technology
MM	million
MMR	monitoring, recordkeeping and reporting
MOAS	Modified Odor Abatement System
MW	molecular weight
NG	natural gas
NOV	Notice of Violation
NOx	Oxides of Nitrogen
NSPS	New Source Performance Standards
O_2	oxygen
OAS	Odor Abatement System
OCS	outer continental shelf
PM	Particulate Matter
PM_{10}	Particulate Matter less than 10 microns in diameter
$PM_{2.5}$	Particulate Matter less than 2.5 microns in diameter
ppbd	parts per billion dry
ppm(vd or w)	parts per million (volume dry or weight)
PUC gas	Natural gas meeting the specifications of the Public Utilities Commission and having an 80 ppmv or less Total Sulfur Content, and 4 ppmv or less H_2S under standard conditions

psia	pounds per square inch absolute
psig	pounds per square inch gauge
PRD	pressure relief device
PTO	Permit to Operate
RACT	Reasonably Available Control Technology
ROC	reactive organic compounds, same as "VOC" as used in this permit
RVP	Reid vapor pressure
scf	standard cubic foot
SCFD	standard cubic feet per day
SCFM	standard cubic feet per minute
SIP	State Implementation Plan
SOx	Sulfur Oxides
STP	standard temperature (60°F) and pressure (29.92 inches of mercury)
THC	Total hydrocarbons
tpy, TPY	tons per year
TRS	Total Reduced Sulfur
TVP	true vapor pressure
VOC	Volatile Organic Compound
VRU	vapor recovery unit

1.0 Introduction

1.1 Purpose

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, 60, 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. This combined permitting action covers both the Federal Part 70 permit (*Part 70 Operating Permit No. 7904*) as well as the State Operating Permit (*Permit to Operate No. 7904*).

Santa Barbara County is designated as a non-attainment area for the state PM_{10} ambient air quality standard. As of July 1, 2020, the County achieved attainment status for the ozone state ambient air quality standards.

Part 70 Permitting. This is the seventh renewal of the Ellwood Onshore Facility's (EOF) Part 70 operating permit and satisfies the permit issuance requirements of the District's Part 70 operating permit program. The District triennial permit reevaluation has been combined with this Part 70 Permit renewal. The EOF is a part of the South Ellwood Field stationary source, which is a major source for VOC[1], 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 Part 70 permit renewal 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.

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".

The EOF's potential to emit has been estimated; however, the greenhouse gas PTE is not an emission limit. The facility will not become subject to emission limits for GHGs

[1] VOC as defined in Regulation XIII has the same meaning as reactive organic compounds as defined in Rule 102. The term ROC shall be used throughout the remainder of this document, but where used in the context of the Part 70 regulation, the reader shall interpret the term as VOC.

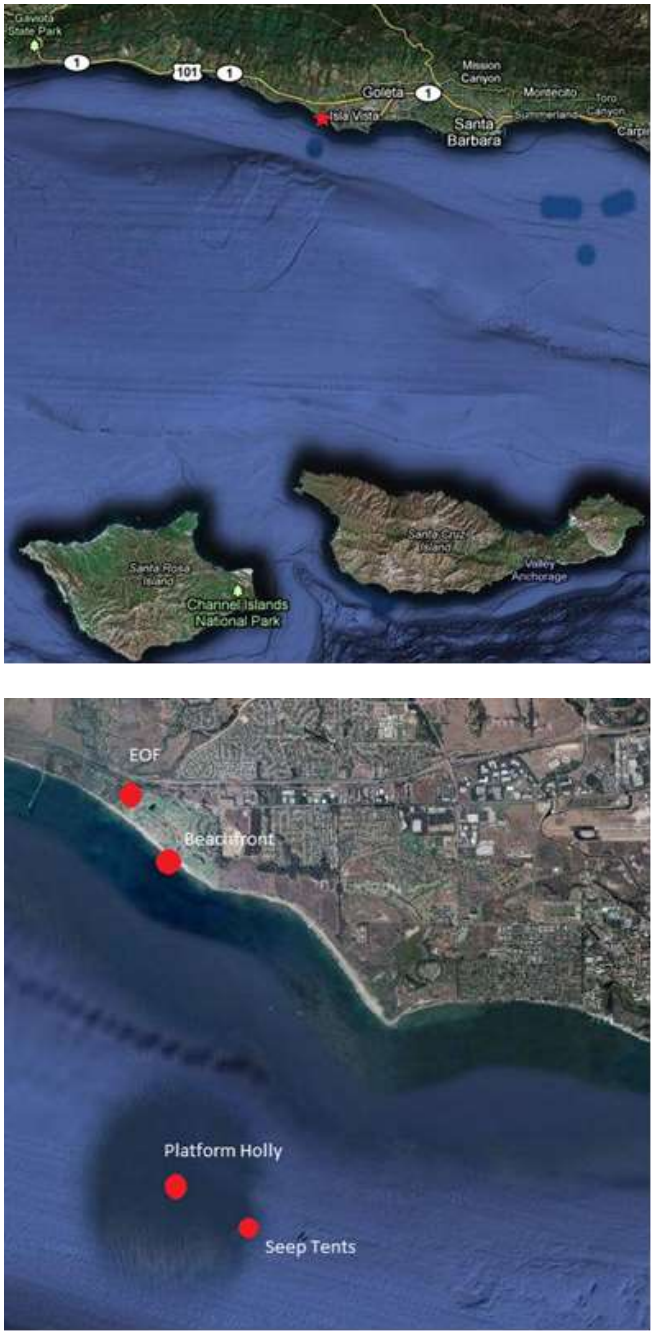
unless a project triggers federal Prevention of Significant Deterioration requirements under Rule 810.

1.2 Facility Overview

1.2.1 General: Venoco, Inc. (Venoco) is the sole owner of the EOF and the California State Lands Commission jointly operates this facility with Beacon West Energy Group. The EOF is located approximately 14 miles west of downtown Santa Barbara and south of US Highway 10l. For District regulatory purposes, the facility is located in the Southern Zone [2] of Santa Barbara County. Figure 1.1 shows the relative location of the facility within the county.

[2] District Rule 102, Definition: "Southern Zone"

Figure 1.1. Location Map for the Ellwood Onshore Facility



The EOF was constructed by the Atlantic Richfield Oil Company (ARCO) in the early 1970s, was sold to the Mobil Oil Corporation in the early 1990s, and was then sold to Venoco Inc. in 1997.

The Ellwood Onshore Facility consists of the following primary emission systems and processes:

- Crude oil receiving system
- Crude oil processing system
- Crude oil and other HC liquid storage and transfer system
- Gas receiving system
- Gas processing/delivery system, sulfur removal including dehydration, sweetening and CO_2 removal
- Gas compression/low temperature system including LPG/NGL recovery
- Loading rack for LPG and NGL and other HC liquid trucks
- Vapor/flare gas collection and incineration system
- Produced and waste water system
- Pipeline and equipment components with fugitive emissions
- Support system including process heater

The *South Ellwood Field* stationary source (SSID = 1063) consists of the following four facilities:

- Platform Holly (FID= 3105)
- Ellwood Onshore Facility (FID= 0028)
- Beachfront Lease (FID= 3035)
- Seep Containment Device (FID= 1065)

1.2.2 Facility Operations Overview: The EOF is designed to receive oil, water and gas from Platform Holly and the Seep Containment Devices located on State Coastal Lease 3242. Crude oil emulsion and sour gas containing hydrogen sulfide (H_2S) from Platform Holly and gas from the Seep Containment Devices are separately transported via sub-sea pipelines to the EOF. At the EOF, gas and water are separated from the crude oil and the sour gas is processed to sales gas quality.

Oil: Crude oil emulsion is heated in heat exchanger banks and heater treaters. The heating plus chemical and electrical treatment of the emulsion results in separation of entrained water. Dry crude from the heater treaters is stripped to reduce the hydrogen sulfide content and then piped to one of two stock tanks for storage.

The water and residual oil separated from the crude emulsion in the heater treaters are piped to a wash tank to separate the water and the oil. In the tank, oil is skimmed from the top and recycled back into the oil processing system. Bottom water is pumped off and injected into an on-site disposal well.

Gas: Sour field gas from Platform Holly is combined with gas from the Seep devices. The combined stream is then chilled to separate entrained liquids, and scrubbed to reduce the hydrogen sulfide content to Public Utility Commission (PUC) natural gas standards.

The resultant gas stream is compressed to approximately 1,000 psig and sent through a membrane separator to reduce the carbon dioxide content. The PUC quality natural gas is then metered into the sales gas pipeline via a sales gas handling system.

When the plant is not processing gas from Holly, the seep gas is rerouted to iron sponge vessels, which contain either iron sponge material or Sulfa-Treat to remove sulfur compounds. The sweetened seep gas is then incinerated.

The EOF also produces liquefied petroleum gas (LPG), natural gas liquids (NGLs) and elemental sulfur. The LPG and NGL can be trucked out of the EOF via onsite loading racks. Elemental sulfur is removed from the site by trucks.

The EOF was permitted in 1982 (PTO 4970) to operate a Stretford unit to lower the high hydrogen sulfide levels in the field gas and to operate an odor abatement system (OAS). Installations at the EOF included a thermal oxidizer unit in 1982 and a Grace unit installed in 1992 (ATC 8262) for CO_2 removal that replaced the existing Fluor unit. In 1995, the heater treaters at the EOF were de-rated (ATC 9218) and the process heater modified (ATC 9217); and, in 1997 (ATC 9473) the EOF was re-configured to remove the OAS and route organic sulfide gases to an existing thermal oxidizer (H-205) for incineration.

The design processing capacity of the EOF is 20,000 barrels/day (bpd) of crude oil-emulsion and 20 million standard cubic feet/day (MMSCFD) of incoming gas that includes up to 20% CO_2. It is currently permitted to produce 13,000 bpd of dry oil, 13 MMSCFD of gas, 10 million gallons/yr of LPG and 5 million gallons/yr of NGL. Sulfur production is limited to 9.8 long tons/day (21,952 lbs/day). Produced crude oil has a Reid Vapor Pressure (RVP) of approximately 4.0 psia and an API gravity of approximately 21°. Once NGL and LPG are blended in at the LACT, the crude oil has an RVP up to 7.0 psia, and API Gravity of approximately 23.5°.

1.2.3 Facility Permits Overview: The EOF operates under a combined Federal Part 70 Operating Permit No. 7904 and District Permit to Operate (PTO) 7904, both issued by the District.

1.2.3.1 *Pre-1979, Pre-District-NSR-Delegation Period* - ARCO Ellwood Onshore Facility submitted a number of permit (ATC and PTO) applications for equipment to the newly formed District during 1971 and 1972. These included ATC/PTO application #'s 21/22 (12/28/71), 171, 172, 173, 174, 175 and 176 (5/30/72); all applications except #171 were denied because of the listed high sulfur content in the in-plant fuel gas. As to ATC/PTO #171, which listed a heater treater (10' dia. x 50' high), two 2,000-bbl crude oil storage tanks, a LACT unit and a sales and lift gas conditioning/compressing facility (these devices were in use at the EOF site), no action was taken on the application. Following this, ARCO obtained a long-term variance from the District Hearing Board to operate all equipment listed in ATC/PTO's 171/172/174/175 until March 1977. ARCO submitted ATC/PTO applications 340/383 in mid-1973. The equipment items in #340 were subsequently de-activated and the other application was cancelled to facilitate a modified application for the same unit (Stretford unit). Application #982 to install an iron sponge unit (for removing H_2S) and a GAC carbon canister (for removing ROCs) was submitted in 11/76; PTO 2164 for these two equipment items was issued in 11/76. ARCO

submitted applications 1194, 1195 and 1196 on July 11, 1977 addressing permits for increased production at the crude oil sweetening unit, the Stretford unit and the Fluor CO_2 removal unit, respectively. An NSR Application 1196 was also submitted to the USEPA by ARCO [Reference: *Atlantic Richfield - NSR 01196*] on 12/12/77 for increased sour crude processing (heater treater dehydration, sweetening and transport to marine terminal) from 4,000 to 20,000 barrels/day and increased gas stream processing (sweetening, compression, LPG recovery and CO_2 removal) from 4 to 20 MMSCFD. The District denied ATC 1195 application but issued ATC 1196 covering all the equipment and process rates listed above on 1/23/78. Finally, ARCO submitted an ATC/PTO application 1198 for a flare gas incinerator (8' high x 20'dia.) in 8/77 and obtained District PTO #2166 for the device (H-205) in 8/77.

1.2.3.2 <u>*Post-1979, Post-District-NSR-Delegation Period*</u> - ARCO submitted ATC/PTO applications 4342 and 4450 for a vacuum truck exhaust scrubber and a vapor recovery unit (VRU) cooler in 8/81. The District issued an ATC for the VRU cooler in 8/81 and PTO 4342 for the scrubber in 8/82. Later, in 11/81, the District and ARCO reached a settlement on the Stretford unit, and a revised PTO 5076 was issued in 1982 addressing modified operations of this unit. Application 4578 for an incinerator (14.5' diameter x 30' high) was submitted on 1/82 and an ATC/PTO was issued for it (H-206) in 1/82. Other pre-construction permits issued are as follows:

ATC 7234 (9/1988) implemented a fugitive hydrocarbon inspection & maintenance (I&M) program; ATC 8262 (12/1991) installed the Grace CO_2 removal unit to replace the existing 'Fluor' unit; ATC 9217 (9/1994) modified the existing process heater (H-204) to reduce its NO_x emissions to District Rule 342 compliance limits; ATC 9218 (2/1996) de-rated the three heater treaters (H-201, H-202 & H-203) by burner modifications and limiting fuel type and hourly fuel use; ATC 9473 (11/1997) modified the existing odor abatement system (OAS) by modifying the existing thermal oxidizer H-205 and associated OAS process flow lines and odor abatement equipment. ATC 9218-01 (5/1996) modified all burners and further de-rated H-202.

The EOF operator proposed in October 1988, the modification of the 'Stretford' solution operation to a 'LO-Cat' solution operation for the sulfur recovery unit. In March 1989, the Stretford unit was modified to a 'LO-Cat' unit. This modification was considered 'de minimis' under the District rules. However, the OAS modification in 1997 described earlier (ATC 9473), required piping additions and increased fugitive emissions. The District concluded that the 1988 modification triggered the federal NSPS, 40 CFR Part 60, Subpart LLL (Onshore Natural Gas Processing: SO_2 Emissions) promulgated in 1985. The facility also obtained an ATC/PTO 1537 to operate a gasoline-fueling pump in 1991. *Note: All conditions in (a) the NSR-01196 and (b) all post-1979 ATCs are federally enforceable.*

1.2.3.3 <u>*Post-Sept 1998 Part 70 Permit Issuance*</u> - Since the issuance of the initial Part 70 Operating Permit on September 25, 1998, the following permit actions have occurred: *ATC Mod 9473-06*: Minor modification to the permit conditions for H-205 to relax residence time and increase combustion temperature to reflect applicable BACT ROC control standards. This permit was issued on 5/24/1999.

ATC/PTO 10022: Conversion of an exempt Therminol storage tank to an ROC containing emulsion breaker storage tank. This permit was issued on 12/3/1998.

PTO Mod 7904-01: District and Minor Part 70 modification to incorporate ATC 9473-6 and ATC/PTO 10022 requirements. This permit was issued on 12/16/1999.

ATC/PTO Mod 7904-02: Combined ATC/PTO to document Abatement Order 99-6(A) required installation of GSF Odor Station and Met, DAS, and H_2S Fence line monitors at the EOF. Also includes Handheld H_2S meter for District. This permit was issued on 4/21/2000.

ATC 10749. The addition of fugitive emission components (valves and connections) in conjunction with upgrading the York Compressor. ATC 10749 was incorporated into PT70-District PTO 7904-R7.

ATC/PTO 10941: ATC 10941 was issued on 27 January 2003 addressing the Grace Unit modification required to meet newer PUC specifications for CO_2 content in the sales gas. The PTO was issued on 24 August 2004.

ATC/PTO 11106: The combined ATC/PTO 11106 was issued on 7 September 2004 to address the frequency changes in pigging events between EOF and Platform Holly.

ATC/PTO 11169: ATC 11169 was issued on 2 September 2004 to address an annual increase of heat input to H-205 unit along with establishing a revised planned flaring volume limit excluding CO_2 from gas streams flared in H-205, H-206 and H-207. PTO 11169 was issued on 25 February 2005.

Since PT70-District PTO 7904-R7 was issued in December 2005, the following permits have been issued:

ATC/PTO 11579: ATC 11579 was issued on September 15, 2005 for the addition of four permeate tubes to the first stage of the grace CO_2 removal unit and the installation of a two tube second stage. PTO 11579 was issued on May 27, 2008.

PTO Mod 7904 02: PTO Mod 7904 02 was issued June 26, 2008 to increase the permitted CO_2 fraction of the gas entering the EOF and decrease the permitted flaring volume to ensure compliance with Rule 359.

ATC/PTO 12839: ATC/PTO 12839 was issued August 11, 2008 to decrease the permitted NO_x emission factor for H-205. The permitted emissions were reduced concurrently with the issuance of ATC 12804 for a new crane engine on Platform Holly in order to keep the stationary source below offset thresholds.

ATC/PTO 12886: ATC/PTO 12886, was issued December 28, 2008 to add fugitive components from various small projects to the permit. This ATC/PTO was applied for in response to NOV 8814 for exceeding the de minimis limit of 24.00 lb/day.

PTO Mod 7904-03: PTO Mod 7904-03 was issued October 22, 2009 to increase the CO_2 content of the inlet gas to the Ellwood Onshore Facility and decrease volumetric flaring.

ATC Mod 13420-01: ATC Mod 13420-01 was issued November 4, 2010 to replace the existing burner and blower on H-205 with new units. This permit increased the permitted hourly and daily flaring rates of H-205 and decreased the NO_x and CO emission factors. The permit decreased the allowed hourly, daily, and annual flaring rates for H-206 and also corrected the burner capacity listed for H-207 authorizing an increase in the hourly, daily, and annual flaring rates for H-207.

ATC 13689: ATC 13689 was issued September 22, 2011 and authorized the construction of the 6" crude oil pipeline from EOF to a connection with the All American Coastal Pipeline (AACP) at Las Flores Canyon. Installation of the pipeline resulted in the shutdown of the marine terminal.

ATC 13935: ATC 13935 was issued October 15, 2012 and authorized the depermitting of fugitive components and process vessels associated with the Grace CO_2 removal unit.

ATC 13689-01: ATC 13689-01 was issued November 15, 2012 for an increase in fugitive components associated with ATC 13689.

ATC 14268: ATC 14268 was issued February 10, 2014 and authorized replacement of two NGL injection pumps.

ATC/PTO 14510: ATC/PTO 14510 was issued April 14, 2015 to permit fugitive components listed as de minimis.

Part 70 Major Modification/PTO 7904-06: Relocate the Ellwood offsite odor monitoring station to the UCSB West Campus odor monitoring station site and transfer the offsite odor monitoring requirement from this permit to the Platform Holly permit. A separate permit is not being issued, rather these changes are incorporated directly into this permit reevaluation (PTO 7904-R11).

PTO Mod 7904-07: PTO Mod 7904-07 was issued November 8, 2019 to provide Venoco relief from select PT-70/Reeval 7904-R11 permit conditions and District Rules and Regulations for the facility equipment and processes that are non-operational during the facility shutdown.

ATC/PTO 15536: ATC 15536 was issued October 6, 2020 to replace an existing power generator. PTO 15536 was issued on February 25, 2021.

ATC 15394: ATC 15394 was issued August 26, 2019 to replace the burners in heater treaters H-201 and H-203. This permit was not used and these units have been permanently removed from service.

1.3 Emission Sources

The emissions from the Ellwood Onshore Facility come from combustion sources (process heater, heater treaters, and thermal oxidizers), oil storage tanks, a reject oil tank, LPG/NGL and emulsion breaker loading racks, vacuum truck exhaust, oil/gas separators and process sumps, pig receivers and a launcher, gas sweetening unit, a glycol dehydration unit, diesel fuel pump and fugitive emission 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 also lists the potential emissions from non-permitted emission units.

Specifically, the emission sources include:

- One (1) diesel-fired IC engine used to drive an emergency firewater pump;
- One (1) diesel-fired IC engine emergency backup electrical generator to power the VRU compressors, and other essential equipment (e.g., general lighting, computers, alarms, and shutdown systems, etc.);
- One (1) gas-fired process heater unit, using in-plant fuel gas plus permeate gas;
- Two (2) older thermal oxidizers, one (1) modified thermal oxidizer;
- Three (3) crude oil storage tanks (two stock tanks and one LACT tank)
- Two (2) oil pipeline pig receivers, one (1) gas pipeline pig receiver, one (1) gas (Seep) pipeline launcher, one (1) utility gas pipeline pig receiver;
- One (1) process sump;
- One (1) wash tank for water settling;
- One (1) loading rack for LPG and NGL;
- One(1) diesel fuel pump with one dispensing nozzle;
- Fugitive emission components in oil & gas service.

Lists of all permitted and exempt equipment are provided in Section 10.5.

1.4 Emission Control Overview

Air quality emission controls are utilized at the Ellwood Onshore Facility for a number of emission units. The emission controls employed at the facility include:

- ☞ An Inspection & Maintenance (I&M) program for detecting and repairing leaks of hydrocarbons from fugitive emissions components, consistent with the requirements of Rule 331, to reduce ROC emissions by approximately 80 percent. An I&M program is also required, per the emission reduction credit agreement with the District per ATC 7234.

- ☞ Compliance with District Rule 325 is achieved through using a VRU to collect reactive organic vapors from the pig receivers/launchers, oil storage tanks, wash tank, reject oil tank, process sump, the vent tank and the flash tank.

- ☞ Use of balance type vapor recovery for the LPG/NGL loading rack.

- ☞ Use of vapor recovery on all applicable sump tanks/vessels.

- ☞ Implementation of a petroleum storage tank-degassing plan pursuant to the requirements of District Rule 343.

- ☞ Compliance with District Rule 311 (fuel sulfur content) to maintain low-level SO_2 emissions.

- ☞ A NO_x emission reduction system, e.g., flue-gas re-circulation (FGR) system and low-NO_x burner, installed on the process heater; also, compliance with District Rule 342 limits for NO_x.

- ☞ A modified odor abatement system (MOAS) to capture air streams from the Lo-Cat solution regeneration process and send them to thermal oxidizer H-205 to reduce the concentration of ROC and benzene by at least 98.5%.

- ☞ A thermal oxidizer system for planned flaring activities; a flare gas minimization and monitoring plan, consistent with District Rule 359 to minimize total flare emissions.

In addition, the housings of the electrically driven gas compressors are sealed and all combustion equipment units are fired with in-plant fuel gas and/or permeate, to reduce emissions.

1.5 Offsets/Emission Reduction Credit Overview

Offsets: The EOF requires emission offsets for any new project emission increase.

Emission Reduction Credits: The EOF provides ROC emission reduction credits to The Point Arguello Project. This was documented via the District's issuance of ATC 7234 on September 6, 1988. This ATC required a fugitive hydrocarbon inspection and maintenance (I&M) program to reduce emissions from facility piping, valves and flanges. PTO 7234, incorporating the ATC 7234 provisions, was issued in May 1990. The ROC ERCs generated under this PTO and dedicated to The Point Arguello Project are 101.12 tons/year.

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 3.1 and 3.2 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 Hazardous Air Pollutants (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 permittee did not list any insignificant emission units in their renewal application.

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 promulgated prior to August 7, 1980, or (2) included in the 29-category source list specified in 40 CFR51.66 or 52.21. The federal

PTE does include 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 permit 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 granted indiscriminately with respect to federal requirements. The permittee made no 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. The permittee 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 semi-annually on or before March 1st and September 1st, as 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. 10 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. MACT/Hazardous Air Pollutants (HAPs): Part 70 permits also regulate emissions of HAPs from major sources by application of maximum achievable control technology (MACT), where applicable. The federal PTE for HAP emissions from a source is computed to determine MACT or any other rule applicability. (*See Sections 4 and 5)*.

1.6.9 Compliance Assurance Monitoring (CAM): The CAM rule became effective on April 22, 1998. This rule affects emission units at the source subject to a federally-enforceable emission limit or standard that uses a control device to comply with the emission standard, and either pre-control or post-control emissions exceed the Part 70 source emission thresholds. Sources subject to CAM Rule must submit a CAM Rule Compliance Plan along with their Part 70 operating permit renewal applications. (See Section 4.9.3). The District has determined that no emission unit at this facility is subject to CAM Rule.

1.6.10 Responsible Official: The designated responsible official and their mailing address are:

Pat Moran, Sr. Land Negotiator
Venoco, Inc.
6267 Carpinteria Ave., Suite 100
Carpinteria, CA 93013-1423

2.0 Process Description

2.1 Process Summary

Crude oil emulsion from Platform Holly is delivered to the Ellwood Onshore Facility (EOF) via sub-sea pipelines. The emulsion is preheated in heat exchangers and treated in heater treaters to remove gases and water. Dry crude is stripped of H_2S in stripper columns and sent to a surge tank. Gas from the heater treaters is sent to gas treatment units at the EOF and produced water from the treaters is filtered and injected into an on-site disposal well.

Sour field gas from Platform Holly and the Seep Containment Device is delivered to the EOF via separate sub-sea pipelines. Platform Holly gas is mixed with the gas from the heater treaters and scrubbed to remove entrained liquids. The gas is then de-sulfurized to a level not exceeding 4 ppm H_2S in the LO-Cat unit. The de-sulfurized gas from Platform Holly is commingled with sweetened Seep Containment Device gases and compressed. The combined gas is then dehydrated and chilled to remove liquefied petroleum gases (LPG). The gas is compressed (to approximately 1,000 psig), and passed through the Grace membrane unit to reduce the CO_2 fraction before it is delivered to the sales pipeline. H_2S recovered from the Platform Holly gas during the sweetening process is converted to elemental sulfur.

Natural gas liquids (NGLs), LPG and the elemental sulfur produced at the EOF is transported out by tanker trucks.

2.1.1 Crude Oil Receiving System: Crude-oil/water emulsion at approximately 85°F is received at the EOF via a 6-inch offshore pipeline.

2.1.2 Crude Oil Processing System: The emulsion is preheated in the Therminol/crude oil exchanger E-102. Hot Therminol pumped from the process heater (H-204) is the heating agent in E-102.

The dry crude oil is passed through one of two H_2S strippers (V-201 & V-202, one is standby), where it is contacted counter-currently with in-plant fuel gas. The in-plant fuel gas strips H_2S from the crude oil to a concentration of less than 70 ppm. The stripper off-gas containing H_2S is sent to the VRU compressors (VRU #2 or VRU #4).

2.1.3 Crude Oil Storage and Transfer System: After stripping, the crude oil is sent to a tank farm consisting of three (3) 2,000-barrel stock tanks (TK-202, 203 and 204). Two of these tanks (TK-202 and TK-203) are used for normal production; receiving oil from the H_2S strippers, and supplying oil to the 6" oil pipeline. Any reject oil is recycled to 2,000-barrel reject oil tank TK-204. The tanks for the hot crude oil are blanketed with in-plant fuel gas and connected to the VRU.

2.1.4 Gas Receiving System: Sour field gas originating from Platform Holly and gas originating from the Seep Containment Device located on State Lease 3242 is sent to the EOF, each via a separate 6-inch diameter pipeline.

2.1.5 Gas Dehydration and Sweetening: The sour gas from the platform is mixed with the gas from the VRU and chilled and scrubbed to remove entrained water and NGL. The NGL is then directed to NGL storage on site. The scrubbed field gas is then processed by the LO-Cat unit for sulfur removal. The gas from the seep device and gas from the vapor recovery unit are commingled with the sour platform gas and sweetened by the LO-Cat system. If the LO-Cat system is not operating, the gas from Holly is shut-in and the seep gas and VRU gas are sent to the iron sponge vessels (V-114, V-115, V-116) for sweetening (H_2S removal). After sweetening, the gases are sent to the compression units or flares. If the H_2S content of the seep gas is low enough, it may bypass the iron sponge vessels and be sent directly to the gas compressors or flares. The iron sponge vessels typically contain an iron sponge material, which is used to remove H_2S. Sulfa-Treat reactant may be used in the vessels in place of the iron sponge material.

The LO-Cat unit uses a solution designed to convert H_2S into elemental sulfur. The elemental sulfur is stored in tanks on-site prior to its removal by tanker trucks. The iron sponges remove the low levels of H_2S present in the sour gas stream from the Seep by reacting with it to form solid iron sulfide, a spent material. The spent iron sulfide is removed for recycling and replaced by fresh iron sponges, as required. The sweetened gas from the LO-Cat unit contains less than 4 ppm by volume of H_2S.

2.1.6 Gas Dehydration, LPG/NGL Recovery, and CO_2 Removal: The sweetened gas is compressed to about 450 psig using two stages of electrically-driven compressors. It is then dehydrated by a glycol unit and chilled using a refrigeration unit where liquefied petroleum gases (LPG) in the stream are separated from the process gas. A third stage compression (about 1,000 psig) sends the process gas to the Grace unit for CO_2 removal. The Grace unit uses semi-permeable membranes to remove the excess CO_2 fraction in the gas. Following this operation, the processed natural gas is delivered to the sales pipeline.

NGL and LPG are also referred as diluent throughout this permit. NGL and LPG is transported to market by trucks.

Grace Unit Process Details: The Grace Membrane Unit separates CO_2 from the sales gas. The first stage permeate, which is high CO_2 low Btu gas, is sent to the following locations based on plant operating needs: process heater H-204, the in-plant fuel gas header for use at the facility, or sent through the relief header to be flared.

2.1.7 Loading Rack: A grade level loading rack connected to the balance type vapor recovery system operates as necessary at the EOF to load LPG and NGL into highway tanker trucks.

2.1.8 Vapor/Flare Gas Collection and Incineration System: This system consists of a vapor recovery unit (VRU), a modified odor abatement system (MOAS) and a thermal oxidizer system.

Vapor Recovery Unit. The VRU collects low pressure hydrocarbon vapors from oil storage, surge, reject, vent and flash tanks, sumps and separators and wastewater tanks. The collected vapors are compressed by two electrically-driven compressors first stage (VRU-1 or VRU-3) at 75 hp and second stage (VRU-2 or VRU-4) at 200 hp. The compressed gas is then mixed with the inlet sour gas from Platform Holly for processing

in the LO-Cat sulfur recovery unit. During periods when the LO-Cat unit is down, the first stage VRU may divert flow through the iron sponge unit to the relief system for incineration. A backup electrical generator powered by a diesel IC engine is used to power the vapor recovery compressors during times of power loss.

Modified Odor Abatement System. The MOAS collects organic vapors from the LO-Cat unit and routes them to thermal oxidizer (H-205). The oxidizer incinerates the vapors with a destruction removal efficiency (DRE) exceeding 98.5 percent by mass. If the H-205 oxidizer unit is down, the LO-Cat unit shuts down simultaneously; this may trigger gas plant shutdown.

Flare System. The flare system consists of three thermal oxidizers (H-205, H-206 and H-207). The permeate gas from the Grace CO_2 removal unit is collected and routed to the fuel system for the process heater (H-204). The gas volume in excess of the process heater firing demand is incinerated in one of the three thermal oxidizers listed above.

2.1.9 Produced and Waste Water System: The liquids (water and residual oil) separated in the heater treaters are piped to a 3,000 barrel settling tank (T-201) for gravitational separation of residual oil. The tank is equipped with a skimming nozzle to collect residual oil off the top of the water surface and recycle it back to the oil processing system. The tank is blanketed with in-plant fuel gas and connected to the VRU. From the settling tank, the water is injected into an on-site water disposal well.

2.1.10 Pipeline and Equipment Components with Fugitive Emissions: Fugitive hydrocarbon emissions at the EOF are emitted from valves, flanges and connectors and fittings not directly associated with other permitted equipment items. The total number of component-leak paths is documented in Table 5.1-1.

2.2 Support Systems

2.2.1 Process Heater: The heating system uses a 25 million Btu/hour process heater unit (H-204), fired by a mix of the Grace permeate gas and PUC-quality in-plant fuel gas. The unit heats the Therminol (fluid) heating medium used by the heat exchangers.

Emission Control for the process heater. The 25 million Btu/hr process heater is equipped with flue gas re-circulation (FGR), flue gas oxygen trim control and a low-NO_x burner to reduce NO_x emissions to below 0.036 lb/MMBtu.

2.2.2 Refrigeration Unit (York skid): Refrigeration to chill the compressed gases and recover the NGLs is provided by a skid-mounted York unit, equipped with a five-stage compressor (K-202). A 1,750 hp electric motor drives the compressor that feeds two chiller units, one for the VRU and sour gas from the platform and the other for sales gas processing.

2.2.3 Diesel-Service Station (permit-exempt): An on-site diesel-service station with a single fuel pump and nozzle provides fuel to the facility cars and trucks.

2.3 Maintenance/Degreasing Activities

2.3.1 Paints and Coatings: On occasion, a painting program is implemented at the EOF. Pollution prevention measures are in effect; tarps are used to help create a more controlled environment and all solvents are recycled or properly disposed of.

2.3.2 Solvent Usage: Solvents not used for surface coating thinning may be used at the EOF for daily operations. Usage includes cold solvent degreasing and wipe cleaning with rags.

2.4 Planned Process Turnarounds

Process turnarounds on the permitted equipment are scheduled to occur when the Ellwood Onshore Facility or Platform Holly is shut down for maintenance. Major pieces of equipment such as storage tanks, process units, compressors and pumps have maintenance schedules specified by the manufacturer. These equipment items are removed from service, inspected, and maintained. Maintenance of critical components is carried out according to the requirements of Rule 331 (*Fugitive Emissions Inspection and Maintenance*). If required, the storage tanks are degassed. The permittee has not listed any emissions from planned process turnarounds to be permitted.

2.5 Other Processes

2.5.1 Pigging: Three pig receivers are utilized to keep the emulsion, gas, and utility pipelines from Platform Holly clear. One pig launcher is used to keep the pipeline from the Seep Containment device clear. Each receiver is connected to both the VRU and the process hydrocarbon drain system.

2.5.2 Sumps: A process sump tank (S-202) serves as the accumulation point for the process hydrocarbon drain system. The 80-barrel capacity tank has a diameter of 6.5' and is 14' long. The tank is connected to the VRU. Several other small sumps (e.g., S-203, S-205, S-207) store non-emitting material and have no potential to emit criteria pollutants.

2.5.3 Vacuum Truck Exhaust Scrubbing: The EOF employs a portable vacuum truck exhaust scrubbing system to address the exhaust from vacuum truck operations. The emissions from the vacuum truck operations are controlled consistent with a District-approved Vacuum Truck Control Plan.

2.5.4 Hydrocarbon Laboratory: The laboratory at the EOF has a fume hood to collect all ROC vapors generated within the laboratory. These vapors are passed through a carbon adsorber with 11,000 pounds capacity and equipped with GAC beds.

2.5.5 Emulsion-breaker Fluid Storage/Handling: A 402-bbl storage tank (T-101) with a diameter of 12' and a height of 14' is used to store emulsion breaker HC liquid. The tank is not connected to the VRU. The tank is bottom-loaded via a hose from tanker trucks. The emulsion breaker fluid currently used at the EOF has a TVP of 0.08 psia. TVP data is on file at the District.

2.5.6 Stand-by Equipment: Standby equipment units used at the EOF are, as follows:

Iron Sponge vessels. Iron sponge vessels (V-114, V-115, and V-116) are used to scrub VRU gas streams and/or seep gas when the LO-Cat system is not operating.

Gas Compressors. Two 3-stage compressors (K-205 & K-206), each driven by a 600 hp electric motor, operate as stand-by units in case of any main sales gas compressor(s) failures.

2.6 Detailed Process Equipment Listing

Refer to Attachment 10.5 for a complete listing of all permitted equipment.

3.0 Regulatory Review

3.1 Rule Exemptions Claimed

- District Rule 202 (Exemptions to Rule 201): The permittee has requested a number of exemptions 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 D.6 (De Minimis). As of January 1, 2020the total de minimis emissions increase at EOF was 9.36 lbs/day for ROC. Therefore, the total de minimis emissions from the stationary source are 9.36 + 10.88 (Platform Holly) = 20.24 lbs/day of ROC. There are no de minimis increases at the Beachfront Lease or Seep Containment Device. Detailed records of the de minimis emissions changes can be viewed at the District's office.

  - Section V.8 for four LPG storage tanks (V-218, V-219, V-227 and V-228)

- District Rule 331 (Fugitive Emissions Inspection and Maintenance): The following exemptions were applied for and approved by the District:

  - Section B.2(c) for one-half inch and less stainless steel tubing fittings.

  - Section B.3(c) for PRDs vented to a closed system.

  - Section B.3(c) for components totally enclosed or contained.

  - Section B.2.b for components buried below the ground.

  - Sections F.1, F.2 and F.7 for components that are unsafe-to-monitor, as documented and established in a safety manual or policy, and with prior written approval of the Control Officer.

- District Rule 333 (Control of Emissions from Reciprocating IC Engines): There are two diesel-fired IC engines at EOF. Each engine is an emergency standby engine, as defined by 17 CCR, 93115. Therefore, each engine is exempt from Rule 333 per Section B.1.d.

- District Rule 344 (Petroleum Sumps, Pits and Well Cellars): The process sump is in secondary service and has a surface areas less than 1000 sq. ft., and thus is exempt from this rule, per Section B.4 of the rule.

- District Rule 346 (Loading of Organic Liquid Cargo Vessels): Section B.4 of the Rule exempts the transfer of LPG and NGLs from the requirements of this Rule.

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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 Ellwood Onshore Facility was constructed and permitted in the early 1970s prior to the applicability of these regulations. However, since then this major source has undergone one major EOF modification and several minor modifications. These modifications were permitted under new source review Authority to Construct (ATC) permits issued by the Santa Barbara District. Compliance with District Regulation VIII (New Source Review) ensures that future modifications to the facility will comply with 40 CFR 51 and 52.

3.2.2 40 CFR Part 60 {New Source Performance Standards}: The Lo-Cat unit, which has a permitted sulfur production rate of 9.8 long tons/day, underwent modifications in 1997, which resulted in an emissions increase. Therefore, this is an affected facility and the provisions of Subpart LLL (Onshore Gas Plant; SO_2 Emissions) apply. The facility produces sulfur through a wet process, which does not produce acid gas. Therefore, the facility has a design capacity of less than two long tons/day of H_2S (expressed as sulfur) in acid gas and is not required to comply with the emission standards, testing, or monitoring requirements of the Subpart (60.642-60.646). The facility is required to keep, for the life of the facility, an analysis demonstrating that the facility's design capacity is less than 2 long tons/day of H_2S expressed as sulfur in acid gas (60.647(c).

The modification also triggered Subpart KKK (Equipment Leaks of VOC from Onshore Gas Plants); and the provisions of this Subpart are included in the permit conditions listed for the fugitive components at the EOF.

3.2.3 40 CFR Part 61 {National Emission Standards for Hazardous Air Pollutants (NESHAP)}: This facility is not currently subject to the provisions of this Subpart.

3.2.4 CFR Part 63 {MACT}:

3.2.4.1 Subpart HH: On June 17, 1999, EPA promulgated Subpart HH, a NESHAPS for Oil and Natural Gas Production and Natural Gas Transmission and Storage. The permittee submitted for District review an *Initial Notification of Applicability* on June 16, 2000 in which they indicated that the Subpart HH requirements applied to this facility. The District then determined that this MACT applies to the in-plant fuel gas processing plant at EOF. While the permittee has documented a "black oil" exemption, this does not apply to the gas processing plant. The District reviewed additional information submitted

by the permittee in May 2002 to claim exemption from certain standard provisions of this MACT. The District concurred with the permittee's claim (Ref: District's 7/31/2002 letter to the permittee) that the EOF is not subject to this MACT's standards due to the following reasons:

1. The Glycol Dehydration unit is not subject to the MACT's 'process vents' standard;
2. The Ancillary Equipment and Compressors are deemed not to be 'in VHAP service'; and,
3. None of the storage tanks at the facility meet the MACT's definition of 'a storage vessel with flash potentials.'

The permittee must maintain monitoring records to document the findings in Items 1 and 2 above.

Subpart ZZZZ: Subpart ZZZZ is a NESHAPS for stationary reciprocating internal combustion engines (RICE). An affected source under the NESHAP is any existing, new, or reconstructed stationary RICE located at a major source or area source. Both the emergency standby generator and the firewater pump are subject to this Subpart.

Existing emergency standby compression ignition RICE at area sources of HAP emissions are subject to the following operating requirements apply:

(1) change the oil and filter every 500 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.

In lieu of changing the oil, the permittee may instead conduct an oil analysis. The analysis measures the Total Base Number, the oil viscosity, and the percent water content. The oil and filter will be changed if any of the following limits are exceeded:

(1) The tested Total Base Number is less than 30 percent of the Total Base Number of the oil when new;

(2) The tested oil viscosity has changed by more than 20 percent from the oil viscosity when new;
(3) The tested percent water content (by volume) is greater than 0.5 percent.

The Total Base Number is the amount acid necessary to neutralize the base reserve in one gram of oil. It is expressed in the equivalent number of milligrams of potassium hydroxide and is a measure of the ability of the oil to neutralize acids created during combustion. If The permittee chooses to change the oil at the specified frequencies, no analysis is required.

Per Section 63.6625(e) the engines must be operated and maintained according to the manufacturer's written instructions, or the permittee must develop their own maintenance plan to minimize emissions.

Per Section 63.6645, existing stationary RICE that are not subject to numerical emission standards do not have to submit an initial notification. No reporting requirements are identified in Section 63.6650 for these units. Per Section 63.6655, the permittee must keep records of maintenance on the engines.

3.2.5 40 CFR Part 64 {Compliance Assurance Monitoring}: This rule became effective on April 22, 1998. This rule affects emission units at the source subject to a federally-enforceable emission limit or standard that uses a control device to comply with the emission standard, and either pre-control or post-control emissions exceed the Part 70 source emission thresholds. Compliance with this rule was evaluated and it was determined that no emission units at this facility are currently subject to Compliance Assurance Monitoring (CAM). See section 4.10.4 for further information on CAM.

3.2.6 40 CFR Part 70 {Operating Permits}: This Subpart is applicable to the EOF. Table 3.1 lists the federally-enforceable District-promulgated rules that are "generic" and apply to the EOF. Table 3.2 lists the federally-enforceable District-promulgated rules that are "unit-specific" that apply to the EOF. These tables are based on data available from the District's administrative files and from the permittee's Part 70 Operating Permit application No. 9553 filed in May 1996 and subsequent renewal applications. Table 3.4 includes the adoption dates of these rules.

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

Part 70 Significant Modification: The operator submitted a permit application on December 26, 2017 to relocate the Ellwood offsite odor monitoring station to the West Campus odor monitoring station site. This application (PT-70 Mod 7904-06) was deemed complete on January 11, 2018 and was incorporated into PTO 7904-R11. The Part 70 Significant Modification also transferred the offsite odor monitoring requirement from this permit to the Platform Holly permit. The offsite Ellwood odor monitoring station has not been in operation for three years and the operator has had difficulties in obtaining a lease to site the station. The District determined that use of the West Campus odor monitoring station, in conjunction with the 14 onsite H_2S monitors and the meteorological station, will better serve the public during the next phase of operations for the South Ellwood Field source. State Lands Commission entered into an agreement with the University of California to take over the West Campus station. The EOF continues to operate and maintain six fence line and eight in-plant H_2S monitors which telemeter data to the District's Data Acquisition System (DAS).

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 Code of Regulations, Title 17, Sub-Chapter 6, Sections 92000 through 92530: These sections specify the standards by which abrasive blasting activities are governed throughout the State. All abrasive blasting activities at the EOF 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.

3.3.3 California Code of Regulations, Title 17, Section 93115: This section specifies airborne toxic control measure (ATCM) to reduce diesel particulate matter (PM) and criteria pollutant emissions from stationary diesel-fueled compression ignition (CI) engines. Its provisions apply to any stationary, industrial CI engine operated in California with a rated brake horsepower greater than 50. Portable, off-road, or marine vessel IC engines are exempt from this ATCM.

3.3.4 California Code of Regulations, Title 17, Section 93116: The provisions of this ATCM apply to any portable diesel-fired CI engines with a rated brake horsepower greater than 50.

3.3.5 Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities (CCR Title 17, Section 95665 *et. Seq.*): On October 1, 2017, the California Air Resources Board (CARB) finalized this regulation, which establishes greenhouse gas emission standards for natural gas processing plants. This facility is subject to the provisions of this regulation.

The separators and tanks at this facility satisfy the requirements of the CARB regulation through the use of a vapor collection system.

The reciprocating natural gas compressors at this facility satisfy the requirements of the CARB regulation through the implementation of rod packing/seal emission flow rate measurements pursuant to Section 95668(c)(4).

This facility is exempt from the leak detection and repair (LDAR) requirements of the CARB regulation per Section 95669(b)(1), which exempts components that are subject to District Rule 331 LDAR requirements prior to January 1, 2018.

This facility does not utilize centrifugal natural gas compressors or natural gas powered pneumatic devices or pumps, and is therefore not subject to the CARB regulation standards and requirements for these equipment and processes.

3.4 Compliance with Applicable Local Rules and Regulations

3.4.1 Applicability Tables: Tables 3.1 and 3.2 list the federally enforceable District rules that apply to the EOF. Table 3.3 lists the non-federally-enforceable District rules that apply to the EOF. Table 3.4 lists the adoption date of all rules that apply to the EOF.

3.4.2 Rules Requiring Further Discussion:

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

Rule 201 - Permits Required: This rule applies to any person who builds, erects, alters, replaces, operates or uses any article, machine, equipment, or other contrivance that may cause the issuance of air contaminants. The equipment included in this permit is listed in Attachment 10.5. An Authority to Construct is required to return any de-permitted equipment to service and may be subject to New Source Review.

Rule 210 - Fees: Pursuant to Section I.B.2, District permits are reevaluated every three years. The fees for this facility are based on the District Rule 210, Fee Schedule A. Attachment 10.3 presents the fee calculations for the reevaluated permit. The fees for this reevaluation are calculated per Section I.B.2.

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 District rules and regulations. To the best of the District's knowledge, the permittee 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. Sources subject to this rule include the thermal oxidizers and all diesel-fired piston internal combustion engines. Compliance will be assured by requiring all engines to be maintained according to manufacturer maintenance schedules, and through visible emissions monitoring requirements in Condition 9.B.2. Rule 359 addresses the need for the thermal oxidizers to operate in a smokeless fashion.

Rule 303 - Nuisance: This rule prohibits the EOF from causing a public nuisance due to the discharge of air contaminants. This facility has a documented history of public nuisance complaints. In early 90's, Venoco, the permittee at the time, was required to implement an *Odor Abatement Agreement* between the District and Venoco (March 1995) and the subsequent *Complaint Response Plan* (May 1995); the plan required Venoco to route the LO-Cat System vapors to a carbon canister. In 1999, Venoco was required to implement process changes due to the District Hearing Board's Abatement Order No. 99-6(A) that stipulated routing the LO-Cat vapors to H-205. The District will investigate and require Venoco to implement appropriate mitigations for any documented occurrences of public nuisance. This permit incorporates federally-enforceable conditions to minimize the potential for additional nuisances, such as operation limits and monitoring, to ensure compliance with this rule.

Rule 305 - Particulate Matter, Southern Zone: The EOF is considered a Southern Zone source. This rule prohibits the discharge into the atmosphere from any source particulate matter in excess of specified concentrations measured in gr/scf. The maximum allowable concentrations are determined as a function of volumetric discharge, measured in SCFM, and are listed in Table 305(a) of the rule. Sources subject to this rule include the thermal oxidizers, heater treaters, process heater and all diesel-fired piston internal combustion

engines. Improperly maintained diesel engines have the potential to violate this rule. Compliance will be assured by requiring all engines to be maintained according to manufacturer maintenance schedules according to the District-approved *IC Engine Particulate Matter Operation and Maintenance Plan* (see Section 9.C.15) and any subsequent District-approved updates.

Rule 309 - Specific Contaminants: Under Section A, no source may discharge sulfur compounds and combustion contaminants in excess of 0.2 percent as SO_2 (by volume) and 0.3 gr/scf (at 12% CO_2) respectively. Sulfur emissions due to the combustion of flare gases in the thermal oxidizers should comply with the SO_2 limit due to stoichiometric combustion requirements. All diesel-powered piston IC engines have the potential to exceed the combustion contaminant limit if not properly maintained (see discussion on Rule 305 above for compliance).

Rule 310 - Odorous Organic Compounds: This rule prohibits the discharge of H_2S and organic sulfides that result in a ground level impact beyond the property boundary in excess of either 0.06 ppmv averaged over 3 minutes and 0.03 ppmv averaged over 1 hour. The EOF is equipped with six fence line H_2S monitors which telemeter data to the District's Data Acquisition System (DAS). These monitors were cited as part of the Abatement Order No. 99-6(A), and were not specifically cited for Rule 310 compliance.

In lieu of a requirement for a TRS/H_2S odor monitoring station more sophisticated than that formerly installed at the property boundary, the permittee committed to relocating three H_2S sensors to locations determined by the District to address both Rule 310 compliance and the tracing of odorous releases that could impact the public. The three relocated sensors are now connected to District's Data Acquisition System (DAS), and are set for an alarm at 0.3 ppmv. An instantaneous alarm at any of these non-fence line locations is treated, conditionally, as a Rule 310 violation. The permittee shall comply with the District-approved *Fence Line Monitoring Plan* (see permit condition 9.C.16) and any subsequent District-approved updates.

Rule 311 - Sulfur Content of Fuels: This rule limits the sulfur content of fuels combusted at the EOF to 0.5 percent (by weight) for liquids fuels and 15gr/100 scf (calculated as H_2S, equivalent to 239 ppmvd) for gaseous fuels. All piston IC engines at the EOF are expected to comply with the liquid fuel limit as determined by fuel analysis documentation. All gas-fired equipment at EOF is expected to comply with the gaseous fuel limits.

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 at the EOF 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. The permittee will be required to maintain records to ensure compliance with this rule.

Rule 321 - Solvent Cleaning Operations: This rule sets equipment and operational standards for degreasers using organic solvents. The permittee asserted that there are no

cold solvent cleaning units at the EOF. Compliance will be determined through District inspections of the facility.

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. The permittee will be required to maintain records during maintenance operations to ensure compliance with this rule.

Rule 323.1 -*Architectural Coatings*: This rule sets the standards for any architectural coating that is supplied, sold, offered for sale, or manufactured for use within the District.

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 to the atmosphere. The permittee will be required to maintain records to ensure compliance with this rule.

Rule 325 - Crude Oil Production and Separation: This rule, adopted January 25, 1994, applies to equipment used in the production, processing, separation, gathering, and storage of oil and gas prior to custody transfer. The primary requirements of this rule are under Sections D and E. Section D requires the use of vapor recovery systems on all tanks and vessels, including wastewater tanks, oil/water separators and sump tanks. Section E requires that all produced gas to be sold, used as fuel, injected underground, flared, or recovered by a system with a control efficiency of at least 90 percent. The crude oil, produced water and the wastewater tanks are subject to Section D.1 and D.2 and the produced gas handling equipment are subject to Section E.1.

Caustic tank TK-1905 and chelate tanks TK-1906 and TK-1907 are not subject to Rule 325 because they do not store hydrocarbon-containing liquids. The tanks are controlled in order to prevent nuisance odors.

Rule 328 - Continuous Emissions Monitoring: This rule details the applicability and standards for the use of continuous emission monitoring (CEM) systems. The source emits to the atmosphere more than 5 lb/hr of non-methane hydrocarbons, oxides of nitrogen and sulfur oxides and more than 10 lb/hr of particulate matter, thereby triggering section C.2 of the rule requiring an evaluation of the need and application of CEMs. This evaluation for CEMs was made and it was determined that CEMs are not required for the EOF at this time.

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. It is not anticipated that the requirements of this rule will be triggered. Compliance shall be based on site inspections and records maintained by the permittee.

Rule 331 - Fugitive Emissions Inspection and Maintenance: This rule applies to components in liquid and gaseous hydrocarbon service at oil and gas production fields. The permittee shall comply with its District-approved *Fugitive Inspection and Maintenance Plan* (see Permit Condition 9.C.16) and any subsequent District-approved updates. Ongoing compliance with the provisions of this rule will also be assessed via

facility inspection by operator and District personnel using an organic or total vapor analyzer meeting the requirements of EPA Method 21 and through analysis of operator records. The EOF does not perform any routine venting of hydrocarbons to the atmosphere.

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 and that are subject to District permit. This rule applies to the diesel-fired IC engines at the facility. Both diesel-fired IC engines are emergency standby engines; therefore, they are exempt from the requirements of Rule 333 per section B.1.d.

Rule 342 - Control of Oxides of Nitrogen from Boilers, Steam Generators and Process Heaters: This rule sets emission standards for external combustion units with a rated heat input greater than 5.0 MMBtu/hr. The 25 MMBtu/hr, gas-fired process heater was modified in 1994 (District ATC 9217) to comply with this Rule. The permittee is required to demonstrate compliance with the Rule-stipulated emission limits through annual source testing for all mixes of in-plant fuel gas and Grace Unit permeate gas. Source testing has indicated the process heater to be in compliance when firing a mixture of in-plant fuel gas and permeate gas that does not exceed 40% in-plant fuel gas. Fuel composition to the process heater is restricted by this permit to contain no more than 40 percent in-plant fuel gas until compliance can be demonstrated for a higher ratio mix.

Rule 343 - Petroleum Storage Tank Degassing: This rule applies to the degassing of any above-ground tank, reservoir or other container of more than 40,000 gallons capacity containing any organic liquid with a vapor pressure greater than 2.6 psia or between 20,000 gallons and 40,000 gallons capacity containing any organic liquid with a vapor pressure greater than 3.9 psia. The stock, surge and reject storage tanks T-201 through T-204 are subject to the provisions of this Rule. The permittee has an approved *Rule 343 Degassing Compliance Plan*, as required under Section G of this Rule. The permittee shall comply with this Plan (see Permit Condition 9.C.16) and any subsequent District-approved updates.

Rule 346 - Loading of Organic Liquids: This rule applies to the transfer of organic liquids into an organic liquid cargo vessel. For this rule only, an organic liquid cargo vessel is defined as a truck, trailer or railroad car. The provisions of this rule do not apply to the loading of LPG and NGL per Section B.4 of the rule.

Rule 352 - Natural Gas-Fired Fan-Type Central Furnaces and Small Water Heaters. This rule applies to any person who manufactures, supplies, sells, offers for sale, installs, or solicits the installation of any natural gas-fired fan-type central furnaces or water heaters for use within the District. Compliance shall be based on site inspections.

Rule 353 - Adhesives and Sealants: This rule applies to the use of adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, or any other primers. Compliance shall be based on site inspections and records maintained by the permittee.

Rule 359 - Flares and Thermal Oxidizers: This rule applies to flares and thermal oxidizers at oil and gas production sources. There is no unplanned flaring permitted at

this facility. Any unplanned flaring is addressed under Rule 505 (Breakdown Conditions). Three thermal oxidizers (H-205, H-206, and H-207) at EOF are subject to this rule. The following provisions of Rule 359 apply:

§ D.1 - Sulfur Content in Gaseous Fuels: Part (a) limits the total sulfur content of all planned flaring from South County flares to 15 gr/100 cubic feet (239 ppmv) calculated as H_2S at standard conditions. Treated produced gas from the EOF is used for pilot gas (a planned flaring category) that is within the limits of this rule. The permittee samples the H_2S concentration of the pilot gas at least weekly with colorimetric gas detection tubes or a V-Rae, or equivalent. The permittee maintains and operates a continuous H_2S analyzer to monitor planned and emergency flaring of thermal oxidizer gas streams and to determine total sulfur oxides (SOx) emissions from the thermal oxidizers.

§ D.2 - Technology Based Standard: Requires all flares/thermal oxidizers to be smokeless and sets pilot flame requirements. The thermal oxidizers at the EOF comply with this section.

§ D.3.a - Flare Minimization Plan: This section requires sources to submit a flare minimization plan. The permittee has submitted and implemented a District-approved *Flare Minimization Plan.*

§ D.3.b - Flare Minimization: This section limits total planned flaring volumes to no more than 5 percent of monthly gas processed. This permit limits total planned flaring volume to 5 percent of the EOF capacity. Since the gas burned at EOF has a high CO_2 content, and the purpose of Rule 359 is to reduce combustion of produced or natural gas, the CO_2 portion of the gas burned in the flares is not counted toward the 5% limit. EOF is permitted to receive 13 MMscf of gas per day (4,745 MMscf/year) with a CO_2 content of up to 20%. Therefore the Rule 359 monthly flaring limit is:

4,745 MMscf/year * (1-20%) * 5% / 12 months/year = 15,817,000 scf/month

The CO_2 portion of the flared gas does not count against this limit.

§ D.5.c - This section specifies NO_x and ROC emission standards for thermal oxidizers permitted to process more than 120,000 scf/day of planned continuous flaring of gas. Only the H-205 unit is subject to this section of the rule. Thermal oxidizers H-206 and H-207 are limited to no more than 120,000 scf/day of planned continuous flaring (of produced gas), and are exempt from the emission standards and emission source testing. § G - This section requires monitoring and recordkeeping of all gas burned in flares subject to the flare minimization plan. The permit contains monitoring and recordkeeping provisions, as required by the rule.

Rule 360 - Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers. This rule applies to any person who supplies, sells, offers for sale, installs, or solicits the installation of any new water heater, boiler, steam generator or process heater for use within the District with a rated heat input capacity greater than or equal to 75,000 British thermal units per hour up to and including 2,000,000 British thermal units per hour.

Rule 361- Small Boilers, Steam Generators, and Process Heaters: On January 17, 2008, the District Board of Directors adopted Rule 361 that includes requirements for process heaters rated between 2.0 MMBtu/hr 5.0 MMBtu/hr. Units installed prior to January 17, 2008 are designated as existing units per Rule 361.

Rule 505 - Breakdown Conditions: This rule describes the procedures that the permittee must follow when a breakdown condition occurs to any emissions unit associated with the EOF. A breakdown condition is defined as an unforeseeable failure or malfunction of (1) any air pollution control equipment or related operating equipment that 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. The permittee submitted a plan in July 1994 and updated it on 03/15/2002. The Plan was approved in August 2002.

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 by reference. Future projects at the facility will be evaluated to determine whether they constitute a new major stationary source or a major modification.

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: Routine District inspections are conducted at the EOF on a quarterly basis. Each inspection report issued since the previous permit renewal was reviewed as a part of this permit renewal process. There were no compliance issues documented in any these reports.

3.5.2 Variances: The following variances were granted by the Hearing Board since the previous permit renewal:

1. 2019-19-E Granted for the dates 11/29/2019 through 12/13/2019 for variance protection from enforcement of District Rule 206 while the permittee was unable to maintain connectivity to the District's DAS system.

2. 2019-20-I Granted for the dates 12/14/2019 through 01/08/2020 for variance protection from enforcement of District Rule 206 while the permittee was unable to maintain connectivity to the District's DAS system.

3. 2019-21-N Granted for the dates 12/14/2019 through 02/26/2020 for variance protection from enforcement of District Rule 206 while the permittee was unable to maintain connectivity to the District's DAS system.

4. 2020-14-E Granted for the dates 07/26/2020 through 08/09/2020 for variance protection from enforcement of the permanent engine replace requirements.

3.5.3 Historical Hearing Board Actions: The actions taken by the District and the Hearing Board in 1998 and 1999 resulted in the issuance of Abatement Order No. 99-6(A) to Venoco, the permittee at the time, in April of 1999. This Order made findings that air emissions from Platform Holly, the Ellwood Onshore Facility and the Barge Jovalan resulted in several public complaints. Condition 11.b of the Order was modified in 2001 to clarify that the Safety, Inspection, Maintenance, and Quality Assurance Plan (SIMQAP) for Platform Holly may only be modified with approval of the Control Officer. The scheduled annual revision of the Plan for 2005 is complete. The Hearing Board ordered Venoco to:

1. Perform a safety audit of Platform Holly, the Ellwood Onshore Facility, Lease 421 (aka the Beachfront Lease), the Marine Terminal and Line 96. Venoco was required to comply with the recommendations of these audits.

2. Prepare and implement a SIMQAP Plan for all its Ellwood stationary source facilities. The Plan is reviewed by the County's System Safety and Reliability Review Committee (SSRRC) every two years and is updated as needed.

3. Suspend any production and drilling operations immediately in the event of any defined shutdown trigger events.

4. Install a permanent flare system on Platform Holly.

5. Implement several facility improvements to address odors while loading crude oil at the Barge Jovalan.

6. Implement a number of hydrogen sulfide monitoring procedures, including fence-line monitoring for H_2S at EOF sites.

7. Install an emergency backup electrical generator at the Ellwood onshore facility.

8. Comply with the County-approved Emergency Action Plan for the Project.

Abatement Order measures applicable to Venoco's EOF have been incorporated in the permit conditions of this permit.

Table 3.1 - Generic Federally-Enforceable District Rules

Generic Requirements	Affected Emission Units	Basis for Applicability
RULE 101: Compliance by Existing Installations	All emission units	Emission of pollutants
RULE 102: Definitions	All emission units	Emission of pollutants
RULE 103: Severability	All emission units	Emission of pollutants
RULE 201: Permits Required	All emission units	Emission of pollutants
RULE 202: Exemptions to Rule 201	Applicable emission units, as listed in Part 70 renewal	Insignificant activities/emissions, per size/rating/function
RULE 203: Transfer	All emission units	Change of ownership
RULE 204: Applications	All emission units	Addition of new equipment or modification to existing equipment.
RULE 205: Standards for Granting Permits	All emission units	Emission of pollutants
RULE 206: Conditional Approval of Authority to Construct or Permit to Operate	All emission units	Applicability of relevant Rules
RULE 207: Denial of Applications	All emission units	Applicability of relevant Rules
RULE 208: Action on Applications - Time Limits	All emission units. Not applicable to Part 70 permit applications.	Addition of new equipment or modification to existing equipment.
RULE 212: Emission Statements	All emission units	Administrative
RULE 301: Circumvention	All emission units	Any pollutant emission
RULE 302 : Visible Emissions	All emission units	Particulate matter emissions
RULE 303: Nuisance	All emission units	Emissions that can injure, damage or offend.
RULE 305: PM Concentration - South Zone	Each PM source	Emission of PM in effluent gas
RULE 309: Specific Contaminants	All emission units	Combustion contaminant emission
RULE 311: Sulfur Content of Fuel	All combustion units	Use of fuel containing sulfur
RULE 317: Organic Solvents	Emission units using solvents	Solvent used in process operations.
RULE 318: Vacuum Producing Devices – Southern Zone	All systems working under vacuum	Operating pressure
RULE 321: Solvent Cleaning Operations	Emission units using solvents	Solvent used in process operations.

Generic Requirements	Affected Emission Units	Basis for Applicability
RULE 322: Metal Surface Coating Thinner and Reducer	Emission units using solvents	Solvent used in process operations.
RULE 323.I: Architectural Coatings	Paints used in maintenance and surface coating activities	Application of architectural coatings.
RULE 324: Disposal and Evaporation of Solvents	Emission units using solvents	Solvent used in process operations.
RULE 353: Adhesives and Sealants	Emission units using adhesives and sealants	Adhesives and sealants use.
RULE 505.A, B1, D: Breakdown Conditions	All emission units	Breakdowns where permit limits are exceeded or rule requirements are not complied with.
RULE 603: Emergency Episode Plans	Stationary sources with PTE greater than 100 tpy	South Ellwood Field Source is a major source.
RULE 810: Federal Prevention of Significant Deterioration	All emission units	Sources subject to any requirement under 40 Code of Federal Regulations, Part 52, Section 52.21
REGULATION VIII: New Source Review	All emission units	Addition of new equipment of modification to existing equipment. Applications to generate ERC Certificates.
RULE 901: New Source Performance Standards (NSPS)	All emission units	Applicability standards are specified in each NSPS.
RULE 1001: National Emission Standards for Hazardous Air Pollutants (NESHAPS)	All emission units	Applicability standards are specified in each NESHAP.
RULE 1301: General Information	All emission units	South Ellwood Field Source is a major source.
REGULATION XIII (RULES 1301-1305): Part 70 Operating Permits	All emission units	The South Ellwood Field Source is major source.

Table 3.2 - Unit-Specific Federally-enforceable District Rules

Unit-Specific Requirements	Affected Emission Units	Basis for Applicability
RULE 316: Storage and Transfer of Gasoline	The gasoline supply pump	Storage and supply of gasoline.
RULE 325: Crude Oil Production and Separation	Tanks, Sumps, Vessels	All pre-custody production and processing emission units.
RULE 330: Surface Coating of Metal Parts & Products	All surface coating used for any metal coating operations	Metal surfaces.
RULE 331: Fugitive Emissions Inspection & Maintenance	All components (valves, flanges, seals, compressors and pumps) used to handle oil and gas	Components emit fugitive ROCs.
RULE 342: Control of NOx from Boilers, Steam Generators etc.	Process Heaters	Rated at above 5 MMBtu/hr.
RULE 343: Petroleum Storage Tank Degassing	Storage Tanks	2,000 bbl. tank used in storage of organic liquids with vapor pressure > 2.6 psia.
RULE 359: Flares and Thermal Oxidizers	Flares and Thermal Oxidizers	Thermal Oxidizers above 1.7 MMBtu/hr.
RULE 360: Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers	Process Heaters	Process heaters rated between 0.75 and 2 MMBtu/hr.
RULE 361: Small Boilers, Steam Generators, and Process Heaters	Process Heaters	Process heaters rated between >2 and 5 MMBtu/hr.

Table 3.3 - Non-Federally-Enforceable District Rules

Requirement	Affected Emission Units	Basis for Applicability
RULE 210: Fees	All emission units	Administrative
RULE 310: Organic Sulfides	Process units with emissions	Odorous sulfide emissions
RULE 352: Natural Gas-Fired Fan-Type Central Furnaces and Small Water Heaters	All emission units	Upon Installation
RULES 501-504: Variance Rules	All emission units	Administrative
RULE 505.B2, B3, C, E, F, G: Breakdown Conditions	All emission units	Breakdowns where permit limits are exceeded or rule requirements are not complied with.
RULES 506-519: Variance Rules	All emission units	Administrative

Table 3.4 - Adoption Dates of District Rules Applicable at Issuance of Permit

Rule No.	Rule Name	Adoption Date
Rule 101	Compliance by Existing Installations: Conflicts	June 21, 2012
Rule 102	Definitions	August 25, 2016
Rule 103	Severability	October 23, 1978
Rule 201	Permits Required	June 21, 2012
Rule 202	Exemptions to Rule 201	August 25, 2016
Rule 203	Transfer	April 17, 1997
Rule 204	Applications	August 25, 2016
Rule 205	Standards for Granting Permits	April 17, 1997
Rule 206	Conditional Approval of Authority to Construct or Permit to Operate	October 15, 1991
Rule 208	Action on Applications - Time Limits	April 17, 1997
Rule 212	Emission Statements	October 20, 1992
Rule 301	Circumvention	October 23, 1978
Rule 302	Visible Emissions	June 1981
Rule 303	Nuisance	June 1981
Rule 305	Particulate Matter Concentration - Southern 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 318	Vacuum Producing Devices or Systems - Southern Zone	October 23, 1978
Rule 321	Solvent Cleaning Operations	June 12, 2012
Rule 322	Metal Surface Coating Thinner and Reducer	October 23, 1978
Rule 323.1	Architectural Coatings	January 1, 2015
Rule 324	Disposal and Evaporation of Solvents	October 23, 1978
Rule 325	Crude Oil Production and Separation	July 19, 2001
Rule 326	Storage of Reactive Organic Compound Liquids	January 18, 2001
Rule 328	Continuous Emissions Monitoring	October 23, 1978

Rule No.	Rule Name	Adoption Date
Rule 330	Surface Coating of Metal Parts and Products	June 12, 2012
Rule 331	Fugitive Emissions Inspection and Maintenance	December 10, 1991
Rule 333	Control of Emissions from Reciprocating Internal Combustion Engines	June 19, 2008
Rule 342	Control of Oxides of Nitrogen (NOx) from Boilers, Steam Generators and Process Heaters	April 17, 1997
Rule 343	Petroleum Storage Tank Degassing	December 14, 1993
Rule 344	Petroleum Sumps, Pits and Well Cellars	November 10, 1994
Rule 346	Loading of Organic Liquid Cargo Vessels	January 18, 2001
Rule 352	Natural Gas-Fired Fan-Type Central Furnaces and Small Water Heaters	October 20, 2011
Rule 353	Adhesives and Sealants	June 12, 2012
Rule 359	Flares and Thermal Oxidizers	June 28, 1994
Rule 360	Emissions of Oxides of Nitrogen From Large Water Heaters and Small Boilers	March 15, 2018
Rule 361	Small Boilers, Steam Generators, and Process Heaters	June 20, 2019
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	August 25, 2016
Rule 802	Nonattainment Review	August 25, 2016
Rule 803	Prevention of Significant Deterioration	August 25, 2016
Rule 804	Emission Offsets	August 25, 2016
Rule 805	Air Quality Impact and Modeling	August 25, 2016
Rule 806	Emission Reduction Credits	August 25, 2016
Rule 808	New Source Review for Major Sources of Hazardous Air Pollutants	May 20, 1999
Rule 810	Federal Prevention of Significant Deterioration	June 20, 2013
Rule 901	New Source Performance Standards (NSPS)	September 20, 2010
Rule 1301	General Information	January 18, 2001
Rule 1302	Permit Application	January 18, 2001

Rule No.	Rule Name	Adoption Date
Rule 1303	Permits	January 18, 2001
Rule 1304	Issuance, Renewal, Modification and Reopening	January 18, 2001
Rule 1305	Enforcement	January 18, 2001

4.0 Engineering Analysis

4.1 General

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

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

Unless noted otherwise, default ROC/Total Hydrocarbon Concentration (THC) reactivity profiles from the District's document titled "*VOC/ROC Emission Factors and Reactivities for Common Source Types*" dated 3/12/01 (version 1.2) was used to determine non-methane, non-ethane fraction of THC.

4.2 Process Heaters and Heater Treaters

4.2.1 General: There is one process heater (rated at 25.00 MMBtu/hr) at the EOF. The process heater (H-204) is fired with a mix of permeate gas from the Grace carbon dioxide removal unit and in-plant fuel gas.

4.2.2 Emission Controls: Process heater (H-204) meets the District Rule 342 NO_x and CO emission limits using flue gas recirculation (FGR) controls including oxygen trim controls and low-NO_x burners.

4.2.3 Emission Factors: NO_x and CO emission factors emission factors for the process heater are based on Rule 342 limits (0.036 lb/MMBtu and 0.297 lb/MMBtu respectively), ROC and PM are based on Table 1.4-2 of AP-42 (7/98) and SO_x is based on mass balance techniques. Due to the use of gaseous fuel, the PM_{10}/PM/ $PM_{2.5}$ ratio is assumed to 1.0. All lb/MMBtu emission factors are higher heating value based.

4.2.4 Calculations: The following calculation methodology is similar for all combustion units:

$$ER = [EF \times Q]$$

where:		
	ER =	Emission rate (lb/period)
	EF =	Pollutant specific emission factor (lb/MMBtu, HHV based)
	Q =	heat input to the unit (BTU/period)

4.2.5 Monitoring: The process heater is equipped with non-resettable fuel flow meters (pressure corrected). Each flow stream (i.e., in-plant fuel gas, permeate gas) is metered separately. The process heater's FGR settings and the oxygen trim levels are also monitored. Source testing is required annually for the process heater. The uncontrolled emissions from each of these units are below the CAM review threshold.

4.3 Stationary Internal Combustion Sources

4.3.1 General: Stationary internal combustion sources associated with the EOF consist of two reciprocating Diesel-Fired IC Engines (DICE). The EOF operates a John Deere Tier 3 315 bhp emergency backup electrical generator engine that is used to power the VRU and

other essential equipment in cases of power interruptions. Per Abatement Order 99-6(A), this emergency backup electrical generator engine is required to be operational at all times to ensure that an adequate backup power supply exists for the VRU and other critical electrical equipment. EOF also operates an emergency firewater pump powered by a 292 bhp Detroit Diesel 7084-7010 diesel IC engine. Besides any emergency uses the emergency backup electrical generator is limited to 50 hours of testing and maintenance operations, and the emergency firewater pump is limited to the number of hours necessary to comply with the testing requirements of the current National Fire Protection Association (NFPA) 25. Since the firewater pump engine must comply with NFPA 25 and NFPA 25 does not specify an upper limit on the hours to comply with the maintenance and testing requirements, in-use firewater pumps will not have a defined potential to emit restricting their operation and therefore this unit is not included in Table 5. All diesel IC engine particulate matter emissions are regulated under California's DICE-ATCM (also see Section 3.3.3 and 4.13 of this PTO for details of DICE-ATCM requirements).

4.3.2 Emission Controls: The engines do not have emission controls at this time.

4.3.3 Emission Factors: Emission factors for the emergency generator are based on Table 3.3-1 of USEPA AP-42 (10/96) for all criteria pollutants except for SO_x, which is based on mass balance techniques. Mass emissions are not calculated for the firewater pump because it must be operated to comply with NFPA 25. See Section 4.14 for more information.

4.3.4 Calculations: Mass emission estimates are based on an assumed two hours per day and 20 hours per year of operation for maintenance and testing. Emissions are determined by the following equations:

E1, lb/day = Engine Rating (bhp) * EF (g/bhp-hr) * Daily Hours (hr/day) * (lb/453.6 g)
E2, tpy = Engine Rating (bhp) * EF (g/bhp-hr) * Annual Hours (hr/yr) * (lb/453.6 g) * (ton/2000 lb)

4.3.5 Monitoring: The emergency backup electrical generator engine is equipped with non-resettable hour meter. The actual engine usage is logged each time the engine is fired. Emissions are calculated using total elapsed run time, the maximum rated engine bhp rating and BSFC data.

4.4 Thermal Oxidizers

4.4.1 General: The permittee operates a flare gas collection and incineration system that also serves the modified odor abatement system (MOAS). The flare gas is collected at various points and scrubbed at a relief scrubber (V-221). The gases are then sent to three thermal oxidizers (H-205, H-206 and H-207), with rated heat inputs of 140 MMBtu/hr, 220 MMBtu/hr, and 30.0 MMBtu/hr, respectively. The pilot gas for the oxidizers is in-plant fuel gas.

4.4.2 Emission Controls: Thermal oxidizer H-205 is required (per BACT) to meet a ROC destruction rate efficiency of 98.5 percent (mass basis). The following engineering review provides a design check:

THERMAL OXIDIZER OPERATING TEMPERATURE. A few techniques are available to estimate the appropriate temperature to destroy specific ROC compounds. Benzene is one of the primary components of concern in LO-Cat Oxidizer exhaust, and is also considered one of the more difficult of the ROCs in this stream to fully destroy via incineration in a dilute air stream. A predictive model by *Lee, Morgan, Hansen and Whipple* in 1982 yields a 99 percent rated mass destruction efficiency temperature ("T_{99}"; assumed equivalent to the specified 98.5 percent destruction efficiency of this permit) of 1361°F (with a standard deviation of 20°F). The minimum operating temperature of 1400°F with the 0.62 second combustion chamber residence time was verified in an emissions source test of the H-205 unit in April 1999. See Section 10.2 for calculations.

An additional incineration temperature model run was done for a typical organic sulfur species found in the LO-Cat Oxidizer exhaust, ethyl mercaptan. The results of this model run indicate that a 709°F incineration temperature is required to destroy this odorous organic sulfide by 99 percent. This result indicates that the minimum incineration temperature of 1400°F appears to be adequate to incinerate odorous organic sulfide species, such as other low molecular weight mercaptans similar to ethyl mercaptan.

4.4.3 Emission Factors: Emission factors are provided for each of the three thermal oxidizers for *Planned – Pilot, Planned – Continuous* and *Planned – Intermittent* flaring categories. Emission factors for *Unplanned* flaring are not presented because the facility is prohibited from any unplanned flaring events. Emissions factors for all planned flaring for H-205 are based on PTO 13420 and the planned pilot for H-206 and H-207 are based on ATC 9473 and ATC/PTO 12839. ROC emission factors are based on the 2016 District Flare Study. The remaining emission factors are based on an uncontrolled boiler per Table 1.4-1 and Table 1.4-2 of USEPA AP-42 (7/98) for all criteria pollutants (except for SO_x). All SO_x emission factors are based on mass balance techniques using the District's guideline titled "Gaseous Fuel SO_x Emission Factor (1/97)". Because these flares combust gaseous fuel the PM_{10}/PM/ $PM_{2.5}$ ratio is assumed to 1.0. All lb/MMBtu emission factors are higher heating value based.

4.4.4 Calculations: The emissions for flaring events are calculated using the calculation methodology below:

$$ER = [\, EF \times Q \,]$$

where: ER = Emission rate (lb/period)
EF = Pollutant specific emission factor (lb/MMBtu, HHV based)
Q = heat input to the unit (BTU/period)

4.4.5 Thermal Oxidizer Planned Operations (Pilot Emissions): The H-205 pilot is on for less than 30 seconds for burner lightoff, and is assumed to be negligent for emissions calculations. The pilot rates for H-206 and H-207 are presumed to occur at the maximum permitted flow 24 hours per day. Any fuel combusted in the thermal oxidizers is limited to 205 ppmvd total sulfur.

4.4.6 Thermal Oxidizer Planned Operations: H-206 and H-207 are limited to 120,000 scf/day of planned continuous flaring. This was done in mid-1995 to avoid the emission limits of Rule 359. All of the thermal oxidizers have hourly and daily heat input limits below their

maximum design levels. All fuel combusted in the thermal oxidizers is limited to 205 ppmvd total sulfur.

4.4.7 Thermal Oxidizer - Unplanned Operations: The permittee is not permitted to combust any flare gases due to *unplanned flaring* scenarios. Any unplanned flaring activity is considered a violation of this permit unless relief from enforcement action is obtained via Rule 505 (Breakdown Conditions) and/or a variance (if necessary) from the District Hearing Board.

4.4.8 H-205 Monitoring: H-205 must be monitored monthly to determine compliance with the lb/MMBtu emission limit. The monitored ppmv emission concentrations are converted to a lb/MMBtu factor by the following methodology:

Table 4.1

In Plant Fuel Gas Flow measured daily, HHV per weekly samples, F-Factor per monthly samples		
Measured flow from FR-081=	69 MSCFD	ref 1
HHV from weekly sample=	970 Btu/scf	ref 2
F-Factor from weekly sample=	8658 dscf/MMBtu	ref 3
1st Stage Permeate Gas Flow measured daily, HHV per weekly samples, F-Factor per monthly samples		
Measured flow from FR-567=	363 MSCFD	ref 4
HHV from weekly sample=	612 Btu/scf	ref 5
F-Factor from weekly sample=	9021 dscf/MMBtu	ref 6
2nd Stage Permeate gas flow measured daily, HHV per weekly samples, F-Factor per monthly samples		
Measured flow from FR-563=	172 MSCFD	ref 7
HHV from weekly sample=	638 Btu/scf	ref 8
F-Factor from weekly sample=	8963 dscf/MMBtu	ref 9

Combined Permeate HHV and F-Factor		
Flare gas flow measured by FR-080=	559 MSCFD	ref 10
Combined Permeate Flow = ref 4 + ref 7=	535 MSCFD	ref 11
HHV = (ref 4*ref 5 + ref 7*ref 8)/ref 11=	620 Btu/scf	ref 12
F-Factor = (ref 4*ref 6 + ref 7*ref 9)/ref 11=	9002 dscf/MMBtu	ref 13
Combined HHV and F-Factor		
Combined Flow to H-205 = ref 1 + ref 10=	628 MSCFD	ref 14
HHV = (ref 1*ref 2 + ref 10*ref 12)/ref 14=	658 Btu/scf	ref 15
F-Factor = (ref 1*ref 3 + ref 10*ref 13)/ref 14=	8964 dscf/MMBtu	ref 16

$$NO_x\ ppmv \times \frac{1\ lb-mol}{379.5\ scf} \times \frac{46\ lb\ NOx}{1\ lb-mol} \times F-Factor\ \frac{dscf}{MMBtu} \times \frac{20.9}{20.9-O_2\%} \div 1{,}000{,}000 = NO_x\ lb/MMBtu$$

Note: The molar volume used in the calculation above is based on a standard temperature of 60 deg F. The F-factor calculated for each gas stream must be calculated at 60 deg F as well.

4.4.9 Thermal Oxidizer Flow Volume Limits: EOF receives a maximum of 13 MMscf/day of gases from Platform Holly and the Seep device; these gases contain a maximum monthly concentration of 20% CO_2 by volume. Therefore, the non-CO_2 organic compound gases received at EOF amount to 10.40 MMscf/day. Based on Rule 359.D.3.b, the maximum monthly planned gas flaring is limited to 10.40 MMscf/day (gases received) * 5 % (Rule limit) * 365 (days/year) = 189.8 MMscf/year. This limit translates to a 15,820,000 scf/month limit for the entire EOF. The permittee's most current *Flare Minimization Plan* reflects these limits. Daily maximum 'planned continuous' flaring at H-206 and at H-207 is 120,000 scf each.

4.5 Fugitive Hydrocarbon Sources

4.5.1 General: Fugitive hydrocarbon emissions occur from leaks in process components such as valves, connections, pumps, compressors and pressure relief devices. Each component may have several potential leak paths. For example, leak paths associated with a valve include the valve stem, bonnet and the upstream and downstream flanges. The total number of leak paths at the facility must be determined to perform fugitive emission calculations. In addition, the 'de minimis' fugitive components must remain inventoried at all times.

4.5.2 Emission Controls: A fugitive emissions control program is used to minimize potential leaks from the process components. Emission reductions are expected based on implementation of an Inspection and Maintenance (I&M) program. The I&M program is designed to minimize leaks through a combination of pre- and post-leak controls. Pre-leak controls include venting of leaks from compressor seals to the VRU, use of dual mechanical seals on pumps in light liquid service, venting of pressure relief devices to the thermal oxidizer system, and plugging of open-ended lines (an open-ended line is a valve that has one side of the valve seat in contact with the process fluid, and is open to the atmosphere on the other). Post-leak controls consist of regular inspection of each leak source for leakage and repair of all components found leaking. Emission control efficiencies of 80 percent are credited to all accessible and inaccessible components that

are safe to monitor (as defined per Rule 331) due to the implementation of a District-approved Inspection and Maintenance program for leak detection and repair consistent with Rule 331 requirements. Unsafe to monitor components are not eligible for I&M control credit. Ongoing compliance is determined in the field by inspection with an organic vapor analyzer and verification of operator records.

4.5.3 Emission Factors: Emissions of reactive organic compounds from piping components such as valves, flanges and connections have been calculated 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*) for components in gas/light liquid and oil/emulsion service. The component-leak path 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.

4.5.4 Calculations: The clp counts are based on the fugitive component count listed in the current fugitive I&M inventory for the facility. The total number of oil/emulsion component leak paths and gas/light-liquid component leak paths at the EOF are documented in Table 5.1-1. 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)

4.5.5 Monitoring: Inspections are performed with an Organic Vapor Analyzer consistent with EPA Method 21. Components are required to be repaired between 1 to 14 days, depending on the severity of the leak. The permittee's I&M program is consistent with the requirements of District Rule 331. The I&M program also includes a leak path identification system. Leak paths are physically identified in the field with a "tag" and given a unique number. An inventory of each tag is then maintained which describes the component type, service, accessibility and all associated leak paths. The leak path inventory serves as a basis for compliance with fugitive hydrocarbon emission limits. The 'de minimis' components contribute to exempt emissions.

4.6 Tanks/Vessels/Sumps/Separators

4.6.1 Crude Oil Storage Tanks: The permittee operates the following fixed-roof tanks at the EOF. All tanks are connected to the VRU system:

- Oil Shipping Tank T-202 (2,000-bbl storage tanks, 30' diameter x 16' height);
- Oil Surge Tank T-203 (2,000-bbl storage tanks, 30' diameter x 16' height);
- Oil Reject Tank T-204 (2,000-bbl storage, 30' diameter x 16' height);

ROC emissions from these tanks are calculated using USEPA AP-42, Chapter 7 - Liquid Storage Tanks (9/97). Section 10.2 contains emission spreadsheets showing the detailed calculations for these tanks. The District assumes that properly designed and operated VRU achieves a minimum 95 percent control efficiency (mass basis).

4.6.2 Sumps and Wastewater Separators: The permittee operates an 80-bbl, process sump tank (S-202), 6.5' diameter x 14' height, one 3,000-bbl settling (wash) tank (TK-201), 30' diameter x 24' height and a 95 bbl crude sump tank S-203. All three units are hooked up to the VRU (District assumed 95 percent control efficiency). Emissions from the sump and the wastewater separator are estimated based District P&P 6100.060 (*Calculation of Fugitive Hydrocarbon Emissions at Oil and Gas Facilities by the CARB/KVB Method - Modified for the Revised ROC Definition*). Each unit is classified as being in secondary heavy oil service.
The calculation methodology is:

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

where:

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

4.6.3 Process Fluid/Products Storage Tanks: Besides crude oil and produced water, various process fluids and products are stored in fixed roof tanks and pressurized tanks. These include the following:

- one 80-bbl, process fluid surge tank (V-213), 6' diameter x 16' long, connected to VRU
- one 2.5-bbl, glycol flash tank (V-211), 20" diameter x 6' height, connected to the VRU
- one accumulated condensed vapor vent tank (V-220), 2' diameter x 10' height, connected to VRU
- one caustic solution storage tank (TK-1905)
- Two chelate tanks (TK-1906, 1907)
- two sulfur slurry tanks (12-3102 and 12-3103), equipped with two agitators each
- one sulfur balance tank (12-3101); and, four high-pressure LPG/NGL storage tanks (V-218, V-219, V-227 and V-228)

ROC emissions from these process fluid and products storage tanks are very low and are assumed to be less than 0.01 tpy.

4.7 Other Emission Sources

4.7.1 Pigging Equipment: Oil, gas and utility pipeline pigging operations occur at this facility. The equipment consists of: (a) an oil pig receiver used for pigging the 6-inch oil pipeline connected to Platform Holly; (b) a gas pig receiver used for pigging the 6-inch gas pipeline connected to Platform Holly, (c) a utility pig receiver for pigging the 4-inch utility (gas or water emulsion) line to Platform Holly, (d) a pig launcher for the 8"

pipeline from the Seep Containment device. All the pig launcher and receiver chambers are connected to the VRU via the process hydrocarbon drain system.

The pigging frequencies are:

- Platform Holly Oil pig receiver - 5 launches per day and 960 launches per year
- Utility pig receiver - 10 launches per day and 120 launches per year
- Gas pig receiver – 10 launches per day and 120 launches per year
- Seep pig launcher - 1 launch per day and 104 launches per year.

After each operation, the pig receiver chambers are evacuated to the backpressure levels of the VRU before the pig is recovered. This remaining pressure is about 1 psig. The small amount of vapor remaining in the chamber is vented to the atmosphere. The calculation per time period is:

$$ER = [V_1 \times \rho \times wt\ \% \times EPP]$$

V_1 = volume of vessel (ft^3)
ρ = density of vapor at actual conditions (lb/ft^3)
wt % = weight percent ROC/TOC
EPP = pigging events per time period (events/period)

4.7.2 LPG/NGL Loading Rack: The grade level loading rack is used to load liquefied petroleum gases (LPG) or natural gas liquids (NGL) into tanker trucks. The tank trucks are loaded using a submerged fill vapor balance system. Uncontrolled emissions from tanker truck loading are 0.48 lb ROC/1,000 gallons of LPG loaded. (Reference: USEPA, Air Chief (version 4.0), July 1995, Fire/SCC Code/4-04-002-50/). The permitted throughput for this permit is 10 MMgallons/year of LPG. Therefore, only the annual emissions are computed for the permitted throughput, assuming an ROC removal efficiency of 95 percent attained by the VRU unit. LPG/NGL is currently injected into the crude oil pipeline for shipment offsite however, use of tanker trucks is utilized when necessary.

4.7.3 Produced Gas Sweetening Unit (LO-Cat unit): Gas produced at Platform Holly and treated at the EOF is sweetened at the LO-Cat unit and sent to the gas compressors. The LO-Cat unit uses a similar aqueous chemistry method as the Stretford Unit it replaced in March 1989, except it employs a LO-Cat solution in place of the Stretford solution. The flash drums holding the rich LO-Cat solution release hydrocarbon gas, which is sent to the H-205 thermal oxidizer for incineration or the VRU. The oxidizers in the LO-Cat unit use air to float the sulfur to the surface for collection. Dissolved hydrocarbons and sulfides join the air stream. This air stream is routed to the H-205 thermal oxidizer for incineration (with sulfur compound not exceeding 205 ppmv). Emission factors for the controlled emissions are specified under the H-205 thermal oxidizer operating conditions and emission limits.

4.7.4 Vacuum Truck Exhaust Scrubbing: A portable vacuum truck exhaust scrubbing system is used to address the exhaust from vacuum truck operations. Vacuum truck operations are subject to the "*Degassing /Vacuum Truck Control Plan*".

4.7.5 Hydrocarbon Laboratory: A fume hood collects the ROC emissions inside the laboratory and exhausts the gases through an 11,000-pound GAC-bed carbon canister. The emissions from this unit are small (assumed to be less than 0.01 tpy ROC) if the control is properly operated and maintained.

4.7.6 General Solvent Cleaning/Degreasing: Solvent usage (not used as thinners for surface coating) may occur at the facility as part of normal daily operations. The usage includes cold solvent degreasing. Mass balance emission calculations are used assuming all the solvent used evaporates to the atmosphere.

4.7.7 Surface Coating: Surface coating operations typically include normal touch up activities. Entire facility painting programs are also performed. Emissions are determined based on mass balance calculations assuming all solvents evaporate into the atmosphere. Emissions of PM/PM_{10} from paint over-spray are not calculated due to the lack of established calculation techniques.

4.7.8 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, PM_{10} and $PM_{2.5}$ when needed for compliance evaluations. PM/PM_1/$PM_{2.5}$ ratios of 1.0 are assumed.

4.7.9 Diesel-Service Station: The emissions from diesel tank loading and vehicle loading operations assumed negligible, due to the very low TVP of diesel fuel.

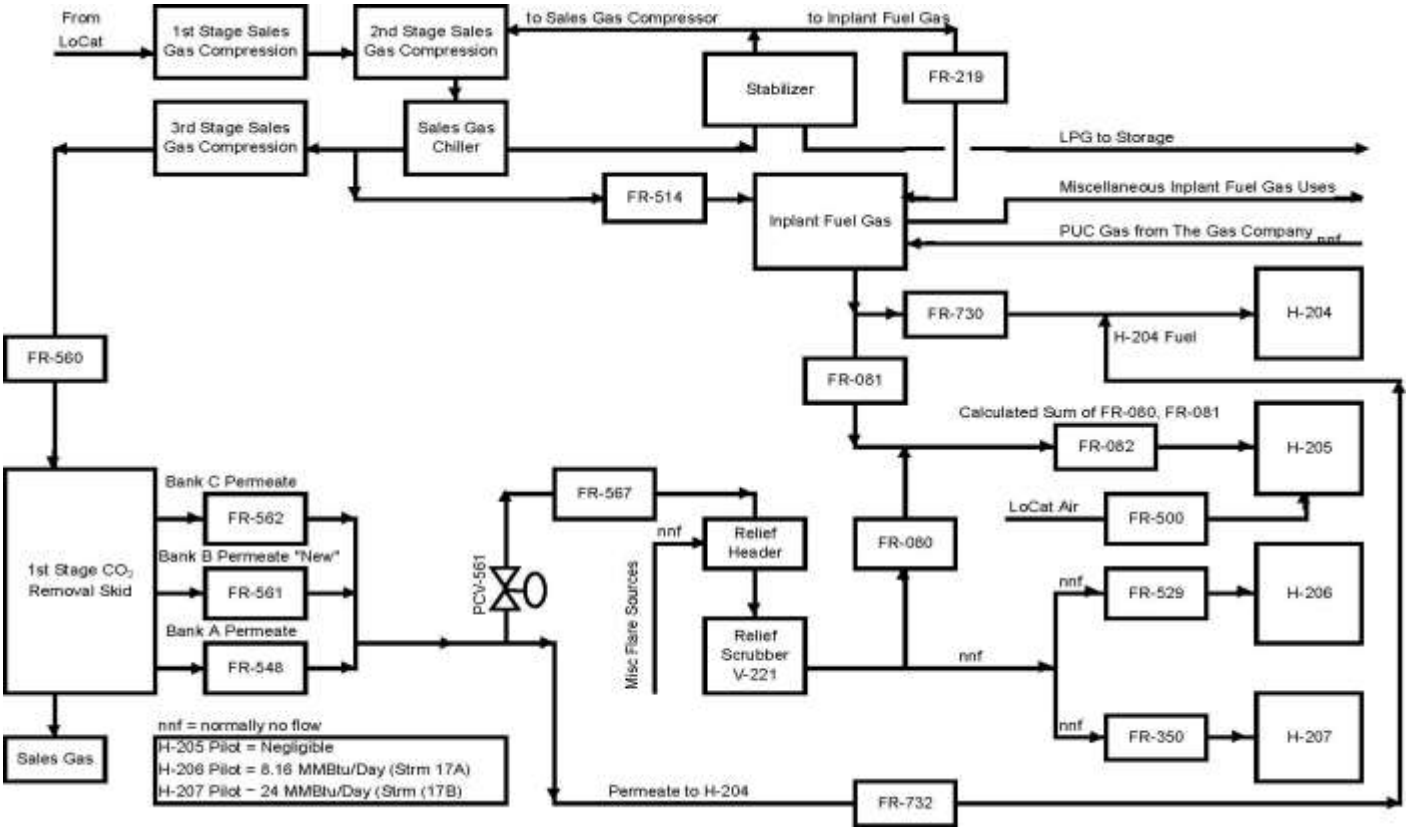
4.8 Vapor Recovery/Control Systems

4.8.1 Vapor Recovery Unit: The vapor recovery unit (VRU) located at this facility consists of: (a) first stage 75-hp compressors (VRU-1 or VRU-3), and (b) second stage 200-hp compressors (VRU-2 or VRU-4). The compressors recover vapors with an efficiency of 95 percent (minimum) from the stock, surge and reject tanks for oil, the process sump tank, the process water tank, the separator blow downs, the oil/gas separators, the flash tank and the vent tank. Two gas condensate scrubbers (V-235 and V-236) are used to scrub the compressor gases. The blanket gas system providing 'blanket produced gas' to the facility is also connected to the VRU system.

4.8.2 CO_2 Removal (Grace) Unit: The Grace Membrane Unit, First stage skid holds 12 membrane tubes arranged in three vertical stacks of four tubes each. All 12 membrane tubes are piped in parallel, each connected to three main headers: inlet, sales gas and permeate. CO_2 rejection membrane elements in each membrane tube preferentially separate CO_2 from the inlet stream, producing a high pressure, low CO_2 content, sales gas stream, and a low pressure, high CO_2 content, permeate stream. The sales gas stream is delivered via pipeline to the Gas Company. The permeate stream is used to: (a) provide heat needed for operating process heater H-204 and the thermal oxidizers H-205/206/207.

The Grace Unit skids also contain pretreatment sections. Gases coming to the skids are pressed through polishing filter F-211 and guard bed F-210 before being passed through the membrane tubes of the skids. The pretreatment sections remove contaminants such as

traces of water or oil in the inlet gas that would otherwise degrade the membrane element performance.



A block flow diagram of the modified operations of the Grace Unit is presented below.

4.8.3 Glycol Scrubber Unit: The glycol unit operates to remove moisture/liquids from the compressed, chilled gas. Chilled, lean glycol strips the chilled gas of its moisture and entrained liquids. This rich glycol is then heated by the 'Therminol' fluid to release the moisture and the liquid and is then recycled back through the process again as lean glycol. Heat exchangers control the glycol temperatures at various points.

4.9 BACT/NSPS/NESHAP/MACT

Thermal oxidizer (H-205) was modified under New Source Review and thereby became subject to BACT. Detailed BACT requirements for the unit are discussed in PTO 13420 and are included in this permit in Section 9.C.

The Produced Gas Sweetening Unit and Sulfur Recovery (LO-Cat) Unit is an "affected facility" under New Source Performance Standards, Subpart LLL (40 CFR, Part 60, Sections 60.640 through 60.648) because it is a "sweetening unit followed by a sulfur recovery unit". However, pursuant to 60.640(b), the facility is not required to comply with the control requirements of Section 60.642 through 60.646 because it has "a design capacity less than 2 long tons per day (LT/D) of hydrogen sulfide (H_2S) in the acid gas (expressed as sulfur)." The sweetening process at the Ellwood facility is designed to produce the sulfur through a wet process, and not through the intermediate production of acid gas. The Ellwood facility, by design, does not produce any acid gas. Thus, only Section 60.647(c) applies to the LO-Cat system. This section requires The permittee to maintain an analysis for the life of the facility demonstrating that the facility is exempt from the control requirements of LLL because the facility does not produce acid gas, and therefore has a design capacity of less than 2 LT/D of H_2S (expressed as sulfur) in the acid gas.

The firewater pump is subject to operational requirements under NESHAP ZZZZ as discussed above in section 3.2.

The monitoring, recordkeeping, and recording requirements of NSPS Subpart KKK triggered by unit modifications at LO-Cat and H-205 units in 1997 are included in permit condition 9.C.2.

As discussed in Section 3.2.4 of this permit, the gas plant at EOF is not subject to MACT provisions prescribed under 40 CFR 63, Subpart HH. Any MACT requirements that become applicable will be incorporated into this permit.

4.10 CEMS/Process Monitoring/Compliance Assurance Monitoring

4.10.1 CEMs: There are no CEMs at this facility.

4.10.2 Process Monitoring: In many instances, ongoing compliance beyond a single (snap shot) source test is assessed by the used of process monitoring systems. Examples of these monitors include engine hour meters, fuel usage meters, gas or oil volume flow meters, thermal oxidizer gas flow meters and hydrogen sulfide analyzers. Once these process monitors are in place, it is important that they be well maintained and calibrated to ensure that the required accuracy and precision of the devices are within specifications. At a minimum, the following process monitors will be required to be calibrated and

maintained in good working order:

- ☞ Meters recording volume of emulsion (oil and water), and gas received at EOF inlet from Platform Holly and from the SEEP Device; these meters include meter 'FR-508' and other meters recording volume of gases received at EOF inlet
- ☞ Monitoring unit providing vapor recovery unit's (suction side) pressure alarm
- ☞ Meters recording use of in-plant fuel gas at all combustion devices
- ☞ Recorder for thermal oxidizer process parameters (e.g., temperature)
- ☞ Meters recording volume of gas sent to each thermal oxidizer; including 'FR-080' measuring flare gas to H-205, 'FR-529' measuring flare gas to H-206, 'FR-350' measuring flare gas to H-207, and 'FR-081' measuring in-plant fuel gas to H-205
- ☞ Meters 'FR-730' and 'FR-731' recording in-plant fuel gas and Grace Unit permeate gas flows to process heater H-204
- ☞ Meters recording hourly IC engine use for each of the diesel IC engines
- ☞ Meter providing inlet pressure and exhaust flow data for blower at the LO-Cat oxidizer
- ☞ Meter 'FR-500' which measures the quantity of Lo-Cat air sent to H-205

The monitors are calibrated and maintained per the *Process Monitor Calibration and Maintenance Plan*.

4.10.3 Thermal Oxidizer Monitoring: All three thermal oxidizers are equipped with flow monitoring and recording devices for each stream entering the thermal oxidizers. This system includes meters to monitor the flow of gas from each of the following input streams:

- H-206 Pilot Gas
- H-207 Pilot Gas
- H-205 Planned Continuous events (separate meter for each inlet stream)
- H-206 Planned Continuous events (separate meter for each inlet stream)
- H-207 Planned Continuous events (separate meter for each inlet stream)
- H-205 Planned/unplanned intermittent events (single meter for combined inlet stream)
- H-206 Planned/unplanned intermittent events (single meter for combined inlet stream)
- H-207 Planned/unplanned intermittent events (single meter for combined inlet stream)
- LO-Cat Exhaust to H-205

Other meters may be required by the District to ensure compliance with conditions of this permit.

The flow meters for each thermal oxidizer are identified in the District-approved *Flare Gas Monitoring Plan.* The specifications for each meter (make, model, manufacturer, ID #, operational flow range, minimum detection point, type of meter, ½ meter detection level, diameter size of line in which the meter is placed, etc.) are listed in the *Process Monitor Calibration and Maintenance Plan.*

The H_2S in the pilot gas is monitored daily via colorimetric gas detection tube, V-Rae, or equivalent. Monitoring conditions in permit condition 9.C.2.c of this permit define the requirements for sampling and analysis for sulfur content and heating value as well as for source testing.

4.10.4 Compliance Assurance Monitoring: A review of the equipment associated with the EOF indicates that there are no emission units or activities that are subject to the rule. This rule affects emission units at the source subject to a federally-enforceable emission limit or standard that uses a control device to comply with the emission standard, and either pre-control or post-control emissions exceed the Part 70 source emission thresholds.

4.11 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. The following emission units are required to be source tested:

- The process heater is subject to annual source testing, depending on the test results (*biennial, upon written approval from the District)*
- Thermal oxidizer H-205 is subject to annual source testing.

At a minimum, the process streams as identified in Table 4-2 below are required to be sampled and analyzed as indicated. Duplicate samples are required (except for colorimetric gas detection tubes).

Periodic sampling and analysis of the (a) incoming gases to the EOF and (b) processed gases flowing to the thermal oxidizers are required to assess (i) CO_2 volume content of these gases and (ii) the HHV content of the gas stream to the thermal oxidizers. Only such sampling and testing can ensure compliance with permitted flow and heat input limits and conformance with the assumptions that form the basis of this permit.

Table 4-2. Process Stream Sampling Requirements

Process Stream	Parameter	Location	Methods	Frequency	Comment
Inlet Gas	H_2S TRS	See *Process Stream Sampling Plan* (10/8/04)	S detection tube TRS: EPA 16	Daily Annual	Daily samples to verify <2% H_2S
Inlet Crude Emulsion	H_2S TRS	Platform Holly LACT outlet (Outlet # 1)	USEPA Method 16	Monthly Annual	
Inlet Gas	CO_2	See *Process Stream Sampling Plan* (10/8/04)	D 1945/D 3588	Monthly	Inlet gas from Holly
Waste Water Tank (oil) and sumps (TK-101, S-202)	Reid vapor press API Gravity	See *Process Stream Sampling Plan* (10/8/04)	D 323 D 287	Annually	RVP → TVP per CARB
Produced Oil (TK-202, 203, 204)	True vapor press. API Gravity	See *Process Stream Sampling Plan* (10/8/04)	D 323-5B & API Bulletin 2519	Annually	RVP → TVP per CARB
Process Heater (H-204): In-plant Fuel gas	H_2S HHV, CO_2 TRS	See *Process Stream Sampling Plan* (10/8/04)	S detection tube D 1945/D 3588 EPA 16	Daily Monthly Semi-annually	
Process Heater: Permeate gas	H_2S HHV, CO_2 TRS	See *Process Stream Sampling Plan* (10/8/04)	S detection tube D 1945/D 3588 EPA 16	Daily Monthly Semi-annually	Note: Ensure high CO_2 does not interfere
Thermal Oxidizer: First and Second Stage Permeate, In-Plant Fuel Gas	H_2S HHV, CO_2 F-factor TRS	See *Process Stream Sampling Plan* (10/8/04) and (7/8/05)	Meter D1945/D 3588 EPA 16	Continuously Weekly Monthly Semi-annually	CO_2 to be measured per 7/8/05 *Plan*
Thermal Oxidizer: Pilot Gas	H_2S HHV, CO_2 TRS	See *Process Stream Sampling Plan* (10/8/04)	S detection tube D1945/D 3588 EPA 16	Daily Weekly Semi-annually	
Diluent	API Gravity TVP	See *Process Stream Sampling Plan* (10/8/04)	Vendor certification	Each Delivery	
Degassing	ROC H_2S	See *Process Stream Sampling Plan* (10/8/04)	ROC: See *De-gassing Plan* H_2S: S detection tube	H_2S: To be checked Per Degassing event	
LO-Cat Exhaust	H_2S TRS	See *Process Stream Sampling Plan* (10/8/04)	S detection tube EPA 16: also see Sect. 9.C.2.c	Semi-annual samples for H_2S and TRS	H_2S: Weekly → Semi-annual

The permittee's 7/8/05 addendum to the 10/7/04 *Process Stream Sampling Plan* was approved by the District (see permit condition 9.C.15) and reflects the sampling locations, the sampling mechanism, and the collection and analysis methods for (a) the CO_2 content of the incoming gases to the EOF and (b) both HHV and CO_2 content of the process stream to the thermal oxidizers.

4.12 Part 70 Engineering Review: Hazardous Air Pollutant Emissions

Hazardous air pollutant emissions from the different categories of emission units at the EOF are based on emission factors listed in USEPA AP-42. Where no emission factors are available, the HAP fractions from the ARB *VOC Speciation Manual – Second Edition* (August 1991) are used in conjunction with the ROC emission factor for the equipment item in question. Potential HAP emissions from each emissions unit at the EOF are listed in Section 5. The HAP emission factor basis is detailed in Table 10.1-1 in Section 10.1.

4.13 Emergency/Standby Diesel IC Engine (E/S - DICE)

The emergency/standby diesel-fired IC engine (E/S - DICE) currently permitted at this facility is a 315 hp John Deere stationary engine. The DICE provides electrical backup power in times of emergencies only. This engine was previously permit exempt. However, the March 17, 2005 revision to District Rule 202 {*Exemptions to Rule 201*} resulted in the removal of the diesel engine permit exemption for units rated over 50 brake horsepower (bhp). The exemption was removed to allow the District to implement the State's Airborne Toxic Control Measure ATCM) for DICE. The State's *Airborne Toxics Control Measure for Stationary Compression Ignition Engines* (ATCM, CCR Section 93115, Title 17) limits annual generator maintenance and testing hours to 50 per year with no limitation for emergency use. Definitions of the terms "maintenance and testing" and "emergency use" are found in Section (d) of the ATCM.

In-Use Stationary DICE powering electricity supply generators are subject to the requirements of Table 2 of the ATCM. By limiting annual maintenance and testing hours to 20 hours or less, these engines are not required to meet any new emission standards (i.e., engine retrofits are not required). The ATCM does require that the hours of operation be monitored with a non-resettable hour meter that CARB Diesel Fuel (or approved alternative) is used and that detailed records of use be recorded and reported.

4.14 Emergency Firewater Pump

This permit includes a diesel engine that provides power to a firewater pump in times of emergencies as defined by the State's *Airborne Toxics Control Measure for Stationary Compression Ignition Engines* (ATCM). It is subject to permit due to the March 17, 2005 revision to District Rule 202 (*Exemptions to Rule 201*) that resulted in the removal of the permit exemption for compression ignition engines rated over 50 brake horsepower (bhp). That exemption was removed to allow the District to implement the State's Airborne Toxic Control Measure for Stationary Compression Ignition Engines (DICE ATCM). This ATCM (CCR Section 93115, Title 17) limits annual engine maintenance and testing hours (as listed for each engine in the equipment list) with no limitation for emergency use. Definitions of the terms "maintenance and testing" and "emergency use" are found in Section (d) of the ATCM. The ATCM requires that the hours of operation be monitored with a non-resettable hour meter, that CARB Diesel Fuel be used (or approved alternative) and that detailed records of use be recorded and reported.

The firewater pump engine must comply with NFPA 25. Since the NFPA 25 does not specify an upper limit on the hours to comply with the maintenance and testing requirements, in-use firewater pumps will not have a defined potential to emit restricting their operation and therefore this unit is not included in Table 5. There is a second emergency firewater pump driven by an electric motor.

5.0 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 are 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 HAP emissions for the EOF. Section 5.6 provides the estimated emissions from permit exempt equipment and also serves as the Part 70 list of insignificant emissions. 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) [3]
⇒ Reactive Organic Compounds (ROC)
⇒ Carbon Monoxide (CO)
⇒ Sulfur Oxides (SO_x) [4]
⇒ Particulate Matter (PM)
⇒ Particulate Matter smaller than 2.5 microns ($PM_{2.5}$)
⇒ Particulate Matter less than 10 microns in diameter (PM_{10})
⇒ Greenhouse Gases (GHG)

Permitted emissions are calculated for both short term (hourly and daily) and long term (annual) time periods. Section 4.0 (Engineering Analysis) provides a general discussion of the basic calculation methodologies and emission factors used. The reference documentation for the specific emission calculations may be found in Section 4 and Attachment 10.1. Table 5.1-1 provides the basic operating characteristics. Table 5.1-2 provides the specific emission factors. Table 5.1-3 shows the permitted short-term emissions for each unit or operation. Table 5.1-4 shows the permitted long-term emissions for each unit or operation. In the table, the last column indicates whether the

[3] Calculated and reported as nitrogen dioxide (NO_2)

[4] Calculated and reported as sulfur dioxide (SO_2)

emission limits are federally enforceable. Those emissions limits that are federally enforceable are indicated by the symbol "FE". Those emissions limits that are District-only enforceable are indicated by the symbol "A". Emissions data that are shown for informational purposes only (and are not enforceable by District or public) are indicated by the symbol "N/A". Table 5.2 summarizes the permitted emissions for each equipment group and Table 5.3 provides the federal potential to emit facility emissions. Table 5.4 provides HAPs emission totals.

5.3 Permitted Emission Limits - Facility Totals

The total potential to emit for all emission units associated with the facility was analyzed. This analysis looked at the reasonable worst-case operating scenarios for each operating period. The equipment operating in each of the scenarios are presented below. Unless otherwise specified, the operating characteristics defined in Table 5.1-1 for each emission unit are assumed. Table 5.2 shows the total permitted emissions for the facility.

The facility's GHG potential to emit has been estimated, however the greenhouse gas PTE is not an emission limit. The facility will not become subject to emission limits for GHGs unless a project triggers federal Prevention of Significant Deterioration requirements under Rule 810.

NOTE: Emissions from the emergency DICE fire pump are not included at this time in Table 5.

Daily Scenario:

- One process heater
- Three thermal oxidizers
- Three crude oil tanks
- One emulsion-breaker tank
- Four pig receivers, two pig launchers
- Three sump/wastewater tanks
- Process line fugitive emission components
- One emergency DICE generator
- One DICE powered fire pump

Annual Scenario:

- One process heater
- Three thermal oxidizers
- Three crude oil tanks
- One emulsion-breaker tank
- Four pig receivers, two pig launchers
- Two sump/wastewater tanks
- Process line fugitive emission components
- One emergency DICE generator
- One DICE powered fire pump

5.4 Part 70: Federal potential to emit for the Facility

Table 5.3 lists the federal Part 70 potential to emit. All project emissions, except fugitive emissions, are counted in the federal definition of potential to emit. However, fugitives

are counted in the federal PTE if, as of August 7, 1980, the facility was subject to any applicable NSPS or NESHAP requirement. The EOF is subject to NSPS Subpart KKK, which was adopted June 24, 1985, and Subpart LLL, which was adopted October 1, 1985, therefore fugitives from this facility are not included in the Federal potential to emit calculations.

5.5 Part 70: Hazardous Air Pollutant Emissions for the Facility

Total emissions of hazardous air pollutants (HAP) are computed based on the factors listed in Table 5.4-1 for each emissions unit. Refer to Table 10.1-1 for the basis of the HAP emission factors. Detailed HAP emissions are shown in Table 5.4-2. Stationary Source HAP emissions are shown in in Table 5.4-3. These are based on a combination of the worst-case scenario listed in Section 5.3. HAPs emission totals have been revised since issuance of the previous permit renewal based on revised HAPs emission factors for fugitive emission from component leakpaths.

5.6 Exempt Emission Sources/Part 70 Insignificant Emissions

Equipment/activities exempt from District permits pursuant to Rule 202 include:

- Maintenance operations involving surface coating (painting operations)

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, but are not considered insignificant emission units, since these exceed the insignificant emissions threshold:

- Solvents/Surface coating operations used during maintenance operations.

Table 5.1-1
Ellwood Onshore Facility: PTO 7904-R12
Operating Equipment Description

			Device Specifications				Usage Data			Maximum Load Schedule				
Equipment Category	Emissions Unit	APCD IDS Equipment No.	Feed	Parameter	Size	Units	Capacity	Units	Load	hr	day	qtr	year	Reference
				S, ppmv										
Combustion - External	Process Heater: H-204	285	NG/Grace	239	25.000	MMBtu/hr	25.000	MMBtu/hr	1.0	1	24	2190	8760	
Combustion- Flare/TO	Thermal Oxidizer: H-205	288	NG/Waste *	variable	35.000	MMBtu/hr	35.000	MMBtu/hr	--	See page 2 of 8 for details.				B
	Thermal Oxidizer: H-206	287	NG/Waste *	variable	30.000	MMBtu/hr	30.000	MMBtu/hr	--					
	Thermal Oxidizer: H-207	286	NG/Waste *	variable	9.500	MMBtu/hr	9.500	MMBtu/hr	--					
IC Engines	Emergency Standby DICE	394946	Diesel		315	bhp			1.0	1	2	5	50	
				RVP										
Oil Storage Tank	Oil Tank: T-202	283	Oil	4.8	35'd x 16'h	feet	6500	bbl/day	--	See spreadsheets in Section 10.2				C
	Oil Tank: T-203	6477	Oil	4.8	35'd x 16'h	feet	6500	bbl/day	--					
	Oil Tank: T-204	284	Oil	4.8	30'd x 24' h	feet	1000	bbl/day	--					
				psig										
Pigging Equipmt.	Receiver: Oil emulsion	9200	Oil	1	0.33'd x 4.51	feet	1.13	acf*	--	5	5	240	960	D
	Receiver: Utility	9200	Gas or oil	1	0.33'd x 4.51	feet	1.13	acf*	--	10	10	30	120	
	Receiver: Produced Gas	9200	Gas	1	0.33'd x 4.51	feet	1.13	acf*	--	10	10	30	120	
	Launcher: Seep Gas	9337	Gas	1	0.33'd x 4.51	feet	1.13	acf*	--	1	1	26	104	
										* - includes a 4.33' long pipe at each end of pig				
				Service										
Sump/Wastewater Tanks	Sump Tank: S-202	9327	w/w	sec/VRS	6.5' dia	feet	33.18	sq. ft.	--	1	24	2190	8760	E
	Wastewater Tank: TK-201	106004	w/w	sec/VRS	30.0' dia	feet	706.86	sq. ft.	--	1	24	2190	8760	
	Oil Sump S-203	9330	oil		7' dia	feet	38.48	sq.ft	--	1	24	2190	8760	
Loading Rack	Rack - LPG/NGL	8003	LPG	balanced	127	psia	20.00	1000 gal/hr	--	1	6	250	1000	F
Fugitive Components														
Gas/Light Liquid Service	Valves: Accessible	297	Gas/Lt.liq	--	3,538	comp-lp	3,538	comp-lp	--	1	24	2190	8760	G
	Valves: Inaccessible	310	Gas/Lt.liq	--	4	comp-lp	4	comp-lp	--	1	24	2190	8760	
	Valves: Unsafe	9118	Gas/Lt.liq	--	6	comp-lp	6	comp-lp	--	1	24	2190	8760	
	Connections: Accessible	300	Gas/Lt.liq	--	19,516	comp-lp	19,516	comp-lp	--	1	24	2190	8760	
	Connections: Inaccessible	312	Gas/Lt.liq	--	2,327	comp-lp	2,327	comp-lp	--	1	24	2190	8760	
	Connections: Unsafe	9120	Gas/Lt.liq	--	78	comp-lp	78	comp-lp	--	1	24	2190	8760	
	Compressor Seal	9121	Gas/Lt.liq	--	20	comp-lp	20	comp-lp	--	1	24	2190	8760	
	Pres. Relief Valve: Accessible	9122	Gas/Lt.liq	--	74	comp-lp	74	comp-lp	--	1	24	2190	8760	
	Pres. Relief Valve: Inaccessib	9123	Gas/Lt.liq	--	2	comp-lp	2	comp-lp	--	1	24	2190	8760	
	Pressure Relief Valve: Unsafe	N/A	Gas/Lt.liq	--	-	comp-lp	-	comp-lp	--	1	24	2190	8760	
	Pump Seal	9125	Gas/Lt.liq	--	10	comp-lp	10	comp-lp	--	1	24	2190	8760	
				sub-total =	25,575		25,575	comp-lp	--					
Oil Service	Valves: Accessible	298	Oil	--	647	comp-lp	647	comp-lp	--	1	24	2190	8760	G
	Valves: Accessible (Category	298	Oil	--	73	comp-lp	73	comp-lp	--	1	24	2190	8760	
	Connections: Accessible	301	Oil	--	3,120	comp-lp	3,120	comp-lp	--	1	24	2190	8760	
	Connections: Accessible (Cat.	301	Oil	--	314	comp-lp	314	comp-lp	--	1	24	2190	8760	
	Connections: Unsafe	N/A	Oil	--	-	comp-lp	-	comp-lp	--	1	24	2190	8760	
	Pres. Relief Valve: Accessible	9127	Oil	--	-	comp-lp	-	comp-lp	--	1	24	2190	8760	
	Pump Seal	9128	Oil	--	7	comp-lp	7	comp-lp	--	1	24	2190	8760	
				sub-total =	4,161		4,161							
Solvent/coatings Usage	Cleaning/Degreasing*	9521	solvent/coating	--	1,500 *	gal/yr	125	gal/month	--	1	8	2190	8760	

* -- The usage of solvent/coating is estimated

Table 5.1-1
Ellwood Onshore Facility: PTO 7904-R12
Operating Equipment Description

			Device Specifications				Usage Data			Maximum Load Schedule				
Equipment Category	Emissions Unit	APCD: IDS Equipment No.	Fuel	Parameter	Size	Units	Capacity	Units	Load	hr	day	qtr	year*	Reference
Combustion - Flare/TO			Gas	ppmv										
H-205	Planned - Pilot Gas	***	PUC	205	0.000	MMBtu/hr	0.000	MMBtu/hr	--	0	0	0	0	B
	Planned	***	Various	205	35.000	MMBtu/hr	35.000	MMBtu/hr	--	1	24	1443	5771	
	Unplanned	***	Various	15,000	35.000	MMBtu/hr	35.000	MMBtu/hr	--	0	0	0	0	
H-206[1]	Planned - Pilot Gas	***	PUC	205	0.340	MMBtu/hr	0.340	MMBtu/hr	--	1	24	2190	8760	B
	Planned	***	Various	205	220.000	MMBtu/hr	30.000	MMBtu/hr	--	0.06	24	1443	5771	
	Unplanned	***	Various	15,000	220.000	MMBtu/hr	30.000	MMBtu/hr	--	0	0	0	0	
H-207[1]	Planned - Pilot Gas	***	PUC	205	1.000	MMBtu/hr	1.000	MMBtu/hr	--	1	24	2190	8760	B
	Planned	***	Various	205	30.000	MMBtu/hr	9.500	MMBtu/hr	--	0.48	24	1443	5771	
	Unplanned	***	Various	15,000	30.000	MMBtu/hr	9.500	MMBtu/hr	--	0	0	0	0	
Combined Units:	Planned - Pilot Gas	***	PUC	205	1.340	MMBtu/hr	1.340	MMBtu/hr	--	1	24	2190	8760	B
H-205/206/207	Planned	***	Various	205	35.000	MMBtu/hr	35.000	MMBtu/hr	--	1	24	1443	5771	
	Unplanned	***	Various	15,000	285.000	MMBtu/hr	74.500	MMBtu/hr	--	0	0	0	0	

1. These thermal oxidizers are not permitted to incinerate Lo-Cat System exhaust.
* -- The hours listed do not constitute any 'hourly'operational limits: the numbers are merely used to compute emissions
-- Annual hours of operation for the combined units is based on a total heat input of 213,734 MMBtu/year for all planned flaring minus 11,738 MMBtu/year of planned pilot gas flaring.

Table 5.1-2
Ellwood Onshore Facility: PTO 7904-R12
Equipment Emission Factors

Equipment Category	Emissions Unit	APCD IDS Equipment No	Emission Factors NOx	ROC	CO	SOx	PM	$PM_{2.5/10}$	CO2	Units	Reference
Combustion - External	Process Heater: H-204	285	0.036	0.005	0.297	0.037	0.007	0.007	190.020	lb/MMBtu	
Combustion- Flare/TO	Thermal Oxidizer: H-205	288	See page 4 of 8 for details.							lb/MMBtu	B
	Thermal Oxidizer: H-206	287								lb/MMBtu	
	Thermal Oxidizer: H-207	286								lb/MMBtu	
IC Engines	Emergency Standby DICE	394946	2.800	0.200	2.600	0.010	0.150	0.150	556.580	g/bhp-hr	
Oil Storage Tank	Oil Tank: T-202	283	See spreadsheets in Section 10.2							bbl/yr	C
	Oil Tank: T-203	6477								bbl/yr	
	Oil Tank: T-204	284								bbl/yr	
Pigging Equipmt.	Receiver: Oil emulsion	9200	-	0.0759	-	-	-	-	-	lb ROC/acf-event	D
	Receiver: Utility	9200	-	0.0759	-	-	-	-	-	lb ROC/acf-event	
	Receiver: Produced Gas	9200	-	0.0192	-	-	-	-	-	lb ROC/acf-event	
	Launcher: Seep Gas	9337	-	0.0192	-	-	-	-	-	lb ROC/acf-event	
Sump/Wastewater Tank	Sump Tank: S-202	9327	-	0.001	-	-	-	-	-	lb/ft2 - day	E
	Wastewater Tank: TK-201	106004	-	0.001	-	-	-	-	-	lb/ft2 - day	
	Oil Sump S-203	9330	-	0.018	-	-	-	-	-	lb/ft2 - day	
Loading Rack	Rack - LPG/NGL	8003	-	0.024	-	-	-	-	-	lb/1000 gallons	F
Fugitive Components											
Gas/Light Liquid Service	Valves: Accessible	297	-	0.080	-	-	-	-	-	lb/clp-day	G
	Valves: Inaccessible	310	-	0.080	-	-	-	-	-	lb/clp-day	
	Valves: Unsafe	9118	-	0.402						lb/clp-day	
	Connections: Accessible	300	-	0.005	-	-	-	-	-	lb/clp-day	
	Connections: Inaccessible	312	-	0.005	-	-	-	-	-	lb/clp-day	
	Connections: Unsafe	9120	-	0.025	-	-	-	-	-	lb/clp-day	
	Compressor Seal	9121	-	0.432	-	-	-	-	-	lb/clp-day	
	Pres. Relief Valve: Accessible	9122	-	0.139	-	-	-	-	-	lb/clp-day	
	Pres. Relief Valve: Inaccessible	9123	-	0.139	-	-	-	-	-	lb/clp-day	
	Pressure Relief Valve: Unsafe	N/A	-	0.696	-	-	-	-	-	lb/clp-day	
	Pump Seal	9125	-	0.521	-	-	-	-	-	lb/clp-day	
Oil Service	Valves: Accessible	298	-	0.028	-	-	-	-	-	lb/clp-day	G
	Valves: Accessible (Category E	298	-	0.017	-	-	-	-	-		
	Connections: Accessible	301	-	0.005	-	-	-	-	-	lb/clp-day	
	Connections: Accessible (Cat.	301	-	0.003	-	-	-	-	-		
	Connections: Unsafe	N/A	-	0.023	-	-	-	-	-	lb/clp-day	
	Pres. Relief Valve: Accessible	9127	-	0.115	-	-	-	-	-	lb/clp-day	
	Pump Seal	9128	-	0.086	-	-	-	-	-	lb/clp-day	
Solvent/coatings Usage	Cleaning/Degreasing	9521	-	250	-	-	-	-	-	g/l	

Table 5.1-2
Ellwood Onshore Facility: PTO 7904-R12
Equipment Emission Factors

Equipment Category	Emissions Unit	APCD IDS Equipment No.	Emission Factors NOx	ROC	CO	SOx	PM	$PM_{2.5-10}$	CO2	Units	Reference
Combustion - Flare/TO											
H-205	Planned - Pilot Gas	***	0.0400	0.0027	0.1000	0.0307	0.0140	0.0140	190.020	lb/MMBtu	B
	Planned	***	0.0400	0.0027	0.1000	0.0307	0.0140	0.0140	190.020	lb/MMBtu	
	Unplanned	***								lb/MMBtu	
H-206	Planned - Pilot Gas	***	0.0700	0.0030	0.3700	0.0307	0.0140	0.0140	190.020	lb/MMBtu	B
	Planned	***	0.0980	0.0054	0.3700	0.0307	0.0140	0.0140	190.020	lb/MMBtu	
	Unplanned	***								lb/MMBtu	
H-207	Planned - Pilot Gas	***	0.0700	0.0030	0.3700	0.0307	0.0140	0.0140	190.020	lb/MMBtu	B
	Planned	***	0.0980	0.0054	0.3700	0.0307	0.0140	0.0140	190.020	lb/MMBtu	
	Unplanned	***								lb/MMBtu	
Combined Units:	Planned - Pilot Gas	***								lb/MMBtu	B
	Planned	***								lb/MMBtu	
	Unplanned	***								lb/MMBtu	

Table 5.1-3
Ellwood Onshore Facility: PTO 7904-R12
Hourly and Daily Emissions

Equipment Category	Emissions Unit	APCD IDS Equipment No.	NOx lbs/hr	NOx lbs/day	ROC lbs/hr	ROC lbs/day	CO lbs/hr	CO lbs/day	SOx lbs/hr	SOx lbs/day	PM lbs/hr	PM lbs/day	PM_{10} lbs/hr	PM_{10} lbs/day	CO2 lbs/hr	CO2 lbs/day	Federal Enforceability
Combustion - External	Process Heater: H-204	285	0.90	21.60	0.13	3.24	7.43	178.20	0.93	22.20	0.19	4.47	0.18	4.47	4750.5	114012.0	FE
Combustion- Flare/TO	Thermal Oxidizer: H-205	288	See page 6 of 8 for details.														FE
	Thermal Oxidizer: H-206	287															FE
	Thermal Oxidizer: H-207	286															FE
IC Engines	Emergency Standby DICE	394946	1.94	3.89	0.14	0.28	1.81	3.61	0.01	0.01	0.10	0.21	0.10	0.21	386.5	773.03	
Oil Storage Tank	Oil Tank: T-202	283	-	-	0.27	6.50	-	-	-	-	-	-	-	-	-	-	A
	Oil Tank: T-203	6477	-	-	0.27	6.50	-	-	-	-	-	-	-	-	-	-	A
	Oil Tank: T-204	284	-	-	0.09	2.22	-	-	-	-	-	-	-	-	-	-	A
Pigging Equipmt.	Receiver. Oil emulsion	9200	-	-	0.43	0.43	-	-	-	-	-	-	-	-	-	-	A
	Receiver: Utility	9200	-	-	0.85	0.85	-	-	-	-	-	-	-	-	-	-	A
	Receiver. Produced Gas	9200	-	-	0.22	0.22	-	-	-	-	-	-	-	-	-	-	A
	Launcher: Seep Gas	9337	-	-	0.02	0.02	-	-	-	-	-	-	-	-	-	-	A
Sump/Wastewater Tanks	Sump Tank: S-202	9327	-	-	0.00	0.03	-	-	-	-	-	-	-	-	-	-	A
	Wastewater Tank: TK-201	106004	-	-	0.03	0.64	-	-	-	-	-	-	-	-	-	-	A
	Oil Sump S-203	9330	-	-	0.03	0.69	-	-	-	-	-	-	-	-	-	-	A
Loading Rack	Rack - LPG/NGL	8003	-	-	0.48	2.88	-	-	-	-	-	-	-	-	-	-	A
Fugitive Components																	
Gas/Light Liquid Service	Valves: Accessible	297	-	-	11.85	284.48	-	-	-	-	-	-	-	-	-	-	A
	Valves: Inaccessible	310	-	-	0.01	0.32	-	-	-	-	-	-	-	-	-	-	A
	Valves: Unsafe	9118	-	-	0.10	2.41	-	-	-	-	-	-	-	-	-	-	A
	Connections: Accessible	300	-	-	4.06	97.35	-	-	-	-	-	-	-	-	-	-	A
	Connections: Inaccessible	312	-	-	0.48	11.61	-	-	-	-	-	-	-	-	-	-	A
	Connections: Unsafe	9120	-	-	0.08	1.95	-	-	-	-	-	-	-	-	-	-	A
	Pres. Relief Valve: Accessible	9121	-	-	0.36	8.64	-	-	-	-	-	-	-	-	-	-	A
	Pres. Relief Valve: Inaccessible	9122	-	-	0.43	10.31	-	-	-	-	-	-	-	-	-	-	A
	Pressure Relief Valve: Inaccessible	9123	-	-	0.01	0.28	-	-	-	-	-	-	-	-	-	-	A
	Pressure Relief Valve: Unsafe	N/A	-	-	0.00	0.00	-	-	-	-	-	-	-	-	-	-	A
	Pump Seal	9125	-	-	0.22	5.21	-	-	-	-	-	-	-	-	-	-	A
				sub-total =	17.61	422.55											A
Oil Service	Valves: Accessible	298	-	-	0.77	18.39	-	-	-	-	-	-	-	-	-	-	A
	Valves: Accessible (Category E)	298			0.05	1.24	-	-	-	-	-	-	-	-	-	-	A
	Connections: Accessible	301	-	-	0.60	14.29	-	-	-	-	-	-	-	-	-	-	A
	Connections: Accessible (Cat. E)	301			0.04	0.86	-	-	-	-	-	-	-	-	-	-	A
	Pres. Relief Valve: Accessible	N/A	-	-	0.00	0.00	-	-	-	-	-	-	-	-	-	-	A
	Pressure Relief Valve: Accessible	9127	-	-	0.00	0.00	-	-	-	-	-	-	-	-	-	-	A
	Pump Seal	9128	-	-	0.03	0.60	-	-	-	-	-	-	-	-	-	-	A
				sub-total =	1.47	35.39											A
Solvent/coatings Usage*	Cleaning/Degreasing*	9521	-	-	1.09	8.68	-	-	-	-	-	-	-	-	-	-	N/A

** – Indicates this is an estimate of emissions and not a limit*

Table 5.1-3
Ellwood Onshore Facility: PTO 7904-R12
Hourly and Daily Emissions

Equipment Category	Emissions Unit	APCD IDS Equipment No.	NOx		ROC		CO		SOx		PM		$PM_{2.5/10}$		CO2		Federal Enforceability
			lbs/hr	lbs/day	lbs/hr	lbs/day	lbs/hr	lbs/day	lbs/hr	lbs/day	lbs/hr	lbs/day	lbs/hr	lbs/day	lbs/hr	lbs/day	
Combustion - Flare/TO																	
H-205	Planned - Pilot Gas	***	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	FE
	Planned	***	1.40	33.60	0.09	2.27	3.50	84.00	1.07	25.79	0.49	11.76	0.49	11.76	7165.9	171981.3	FE
	Unplanned	***	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	FE
H-206	Planned - Pilot Gas	***	0.02	0.57	0.00	0.02	0.13	3.02	0.01	0.25	0.00	0.11	0.00	0.11	69.61	1670.68	FE
	Planned	***	0.19	4.58	0.01	0.25	0.72	17.29	0.06	1.43	0.03	0.65	0.03	0.65	398.6	9567.1	FE
	Unplanned	***	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	FE
H-207	Planned - Pilot Gas	***	0.07	1.68	0.00	0.07	0.37	8.88	0.03	0.74	0.01	0.34	0.01	0.34	204.74	4913.75	FE
	Planned	***	0.44	10.64	0.02	0.59	1.67	40.16	0.14	3.33	0.06	1.52	0.06	1.52	925.8	22220.0	FE
	Unplanned	***	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	FE
Combined Units:	Planned - Pilot Gas	***	0.09	2.25	0.00	0.10	0.50	11.90	0.04	0.99	0.02	0.45	0.02	0.45	204.7	4913.8	FE
H-205/206/207	Planned	***	1.40	33.60	0.09	2.27	3.50	84.00	1.07	25.79	0.49	11.76	0.49	11.76	7165.9	171981.3	FE
	Unplanned	***	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	FE
	Worst-Case Flaring Scenario		**1.49**	**35.85**	**0.10**	**2.36**	**4.00**	**95.90**	**1.12**	**26.78**	**0.51**	**12.21**	**0.51**	**12.21**	**7370.6**	**176895.1**	FE

Notes:
- FE means federally enforceable
- A means APCD enforceable only
- NE means not enforcebale

Table 5.1-4
Ellwood Onshore Facility: PTO 7904-R12
Annual Emissions

Equipment Category	Emissions Unit	APCD: IDS Equipment No.	NOx tpy	ROC tpy	CO tpy	SOx tpy	PM tpy	$PM_{2.5/10}$ tpy	CO2 tpy	Federal Enforceability
Combustion - External	Process Heater: H-204	285	3.94	0.59	32.52	4.05	0.82	0.77	20807.19	FE
Combustion- Flare/TO	Thermal Oxidizer: H-205	288	See page 5 of 6 for details.							FE
	Thermal Oxidizer: H-206	287								FE
	Thermal Oxidizer: H-207	286								FE
IC Engines	Emergency Standby DICE	394946	0.05	0.00	0.05	0.00	0.00	0.00	9.66	
Oil Storage Tank	Oil Tank: T-202	283	-	1.19	-	-	-	-	-	A
	Oil Tank: T-203	6477	-	1.19	-	-	-	-	-	A
	Oil Tank: T-204	284	-	0.41	-	-	-	-	-	A
Pigging Equipmt.	Receiver. Oil emulsion	9200	-	0.04	-	-	-	-	-	A
	Receiver: Utility	9200	-	0.01	-	-	-	-	-	A
	Receiver. Produced Gas	9200	-	0.00	-	-	-	-	-	A
	Launcher: Seep Gas	9337	-	0.00	-	-	-	-	-	A
Sump/Wastewater Tanks	Sump Tank: S-202	9327	-	0.01	-	-	-	-	-	A
	Wastewater Tank: TK-201	106004	-	0.12	-	-	-	-	-	A
	Oil Sump S-203	9330	-	0.13	-	-	-	-	-	A
Loading Rack	Rack - LPG/NGL	8003	-	0.24	-	-	-	-	-	A
Fugitive Components										
Gas/Light Liquid Service	Valves: Accessible	297	-	51.92	-	-	-	-	-	A
	Valves: Inaccessible	310	-	0.06	-	-	-	-	-	A
	Valves: Unsafe	9118	-	0.44	-	-	-	-	-	A
	Connections: Accessible	300	-	17.77	-	-	-	-	-	A
	Connections: Inaccessible	312	-	2.12	-	-	-	-	-	A
	Connections: Unsafe	9120	-	0.36	-	-	-	-	-	A
	Pres. Relief Valve: Accessible	9121	-	1.58	-	-	-	-	-	A
	Pres. Relief Valve: Inaccessible	9122	-	1.88	-	-	-	-	-	A
	Pressure Relief Valve: Inaccessible	9123	-	0.05	-	-	-	-	-	A
	Pressure Relief Valve: Unsafe	N/A	-	0.00	-	-	-	-	-	A
	Pump Seal	9125	-	0.95	-	-	-	-	-	A
			sub-total =	77.12						A
Oil Service	Valves: Accessible	298	-	3.36	-	-	-	-	-	A
	Valves: Accessible (Category E)	298		0.23						A
	Connections: Accessible	301	-	2.61	-	-	-	-	-	A
	Connections: Accessible (Cat. E)	301		0.16						A
	Pres. Relief Valve: Accessible	N/A	-	0.00	-	-	-	-	-	A
	Pressure Relief Valve: Accessible	9127	-	0.00	-	-	-	-	-	A
	Pump Seal	9128	-	0.11	-	-	-	-	-	A
			sub-total =	6.46						A
Solvent/coatings Usage*	Cleaning/Degreasing	9521		1.56	-	-	-	-	-	N/A

** -- Indicates this is an estimate of emissions and not a limit*

Table 5.1-4
Ellwood Onshore Facility: PTO 7904-R12
Annual Emissions

Equipment Category	Emissions Unit	APCD: IDS Equipment No.	NOx tpy	ROC tpy	CO tpy	SOx tpy	PM tpy	$PM_{2.5/10}$ tpy	CO2 tpy	Federal Enforceability
Combustion - Flare/TO										
H-205	Planned - Pilot Gas	***	0.00	0.00	0.00	0.00	0.00	0.00	0.00	FE
	Planned	***	4.04	0.27	10.10	3.10	1.41	1.41	20678.25	FE
	Unplanned	***	0.00	0.00	0.00	0.00	0.00	0.00	0.00	FE
H-206	Planned - Pilot Gas	***	0.10	0.00	0.55	0.05	0.02	0.02	304.90	FE
	Planned	***	0.55	0.03	2.08	0.17	0.08	0.08	17724.22	FE
	Unplanned	***	0.00	0.00	0.00	0.00	0.00	0.00	0.00	FE
H-207	Planned - Pilot Gas	***	0.31	0.01	1.62	0.13	0.06	0.06	896.76	FE
	Planned	***	1.28	0.07	4.83	0.40	0.18	0.18	5612.67	FE
	Unplanned	***	0.00	0.00	0.00	0.00	0.00	0.00	0.00	FE
Combined Units:	Planned - Pilot Gas	***	0.41	0.02	2.17	0.18	0.08	0.08	1201.66	FE
H-205/206/207	Planned	***	4.04	0.27	10.10	3.10	1.41	1.41	20678.25	FE
	Unplanned	***	0.00	0.00	0.00	0.00	0.00	0.00	0.00	FE
	Worst-Case Flaring Scenario	***	**4.45**	**0.29**	**12.27**	**3.28**	**1.50**	**1.50**	**21879.91**	FE

Notes:
- FE means federally enforceable
- A means APCD enforceable only

Table 5.2
Ellwood Onshore Facility: PTO 7904-R12
Total Permitted Facility Emissions

A. HOURLY (lb/hr)

Equipment Category	NOx	ROC	CO	SOx	PM	$PM_{2.5/10}$	CO2
Combustion - External	0.90	0.13	7.43	0.93	0.19	0.18	4750.50
Combustion - Flare/TO	1.49	0.10	4.00	1.12	0.51	0.51	7370.63
IC Engines	1.94	0.14	1.81	0.01	0.10	0.10	386.51
Oil Storage Tank	-	0.63	-	-	-	-	-
Pigging Equipment	-	1.52	-	-	-	-	-
Sumps/W-W Tanks	-	0.06	-	-	-	-	-
Loading Rack	-	0.48	-	-	-	-	-
Fug.Comp. - - Gas Servic	-	17.61	-	-	-	-	-
Fug. Comp. -- Oil Service	-	1.47	-	-	-	-	-
solvent/coating	-	1.09	-	-	-	-	-
Totals =	4.34	23.22	13.23	2.05	0.80	0.79	12507.64

B. DAILY (lb/day)

Equipment Category	NOx	ROC	CO	SOx	PM	PM10	CO2
Combustion - External	21.60	3.24	178.20	22.20	4.47	4.47	114012.00
Combustion - Flare/TO	35.85	2.36	95.90	26.78	12.21	12.21	176895.06
IC Engines	3.89	0.28	3.61	0.01	0.21	0.21	773.03
Oil Storage Tank	-	15.22	-	-	-	-	-
Pigging Equipment	-	1.52	-	-	-	-	-
Sumps/W-W Tanks	-	0.37	-	-	-	-	-
Loading Rack	-	2.88	-	-	-	-	-
Fug.Comp. - - Gas Servic	-	422.55	-	-	-	-	-
Fug. Comp. -- Oil Service	-	35.39	-	-	-	-	-
solvent/coating	-	8.68	-	-	-	-	-
Totals =	61.34	492.49	277.71	48.99	16.89	16.89	291680.09

C. ANNUAL (ton/yr)

Equipment Category	NOx	ROC	CO	SOx	PM	PM10	CO2
Combustion - External	3.94	0.59	32.52	4.05	0.82	0.77	20807.19
Combustion - Flare/TO	4.45	0.29	12.27	3.28	1.50	1.50	21879.91
IC Engines	0.05	0.00	0.05	0.00	0.00	0.00	9.66
Oil Storage Tank	-	2.79	-	-	-	-	-
Pigging Equipment	-	0.05	-	-	-	-	-
Sumps/W-W Tanks	-	0.25	-	-	-	-	-
Loading Rack	-	0.24	-	-	-	-	-
Fug.Comp. - - Gas Servic	-	77.12	-	-	-	-	-
Fug. Comp. -- Oil Service	-	6.46	-	-	-	-	-
solvent/coating	-	1.56	-	-	-	-	-
Totals =	8.44	89.35	44.84	7.33	2.31	2.27	42696.77

Table 5.3
Ellwood Onshore Facility: PTO 7904-R12
Federal Potential to Emit Information

A. HOURLY (lb/hr)

Equipment Category	NOx	ROC	CO	SOx	PM	$PM_{2.5/10}$	CO2
Combustion - External	0.90	0.13	7.43	0.93	0.19	0.18	4750.50
Combustion - Flare/TO	1.49	0.10	4.00	1.12	0.51	0.51	7370.63
IC Engines	1.94	0.14	1.81	0.01	0.10	0.10	386.51
Oil Storage Tank	-	0.00	-	-	-	-	-
Pigging Equipment	-	0.00	-	-	-	-	-
Sumps/W-W Tanks	-	0.00	-	-	-	-	-
Loading Rack	-	0.48	-	-	-	-	-
Fug.Comp. - - Gas Servi	-	-	-	-	-	-	-
Fug. Comp. -- Oil Servic	-	-	-	-	-	-	-
solvent/coating	-	0.00	-	-	-	-	-
Totals =	4.34	0.85	13.23	2.05	0.80	0.79	12507.64

B. DAILY (lb/day)

Equipment Category	NOx	ROC	CO	SOx	PM	PM10	CO2
Combustion - External	21.60	3.24	178.20	22.20	4.47	4.47	114012.00
Combustion - Flare/TO	35.85	2.36	95.90	26.78	12.21	12.21	176895.06
IC Engines	3.89	0.28	3.61	0.01	0.21	0.21	773.03
Oil Storage Tank	-	0.00	-	-	-	-	-
Pigging Equipment	-	0.00	-	-	-	-	-
Sumps/W-W Tanks	-	0.00	-	-	-	-	-
Loading Rack	-	2.88	-	-	-	-	-
Fug.Comp. - - Gas Servi	-	-	-	-	-	-	-
Fug. Comp. -- Oil Servic	-	-	-	-	-	-	-
solvent/coating	-	0.00	-	-	-	-	-
Totals =	61.34	8.76	277.71	48.99	16.89	16.89	291680.09

C. ANNUAL (ton/yr)

Equipment Category	NOx	ROC	CO	SOx	PM	PM10	CO2
Combustion - External	3.94	0.59	32.52	4.05	0.82	0.77	20807.19
Combustion - Flare/TO	4.45	0.29	12.27	3.28	1.50	1.50	21879.91
IC Engines	0.05	0.00	0.05	0.00	0.00	0.00	9.66
Oil Storage Tank	-	0.00	-	-	-	-	-
Pigging Equipment	-	0.00	-	-	-	-	-
Sumps/W-W Tanks	-	0.00	-	-	-	-	-
Loading Rack	-	0.24	-	-	-	-	-
Fug.Comp. - - Gas Servi	-	-	-	-	-	-	-
Fug. Comp. -- Oil Servic	-	-	-	-	-	-	-
solvent/coating	-	0.00	-	-	-	-	-
Totals =	8.44	1.12	44.84	7.33	2.31	2.27	42696.77

Table 5.4-1
Ellwood Onshore Facility: Part 70/PTO 7904-R12
Hazardous Air Pollutant Emission Factors

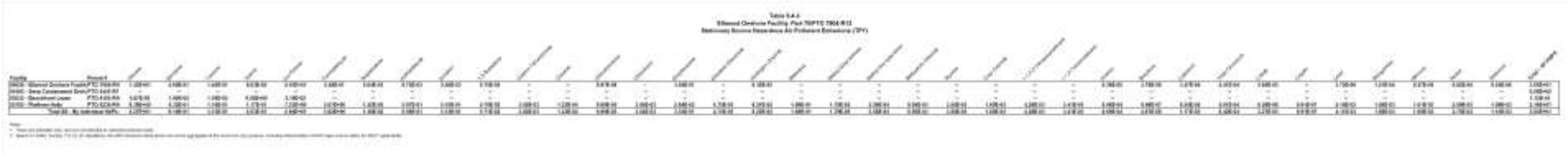
			Emission Factors																										
Equipment Category	**Description**	**APCD Device ID**	Hexane	Benzene	Toluene	Xylene	Iso-Octane	Formaldehyde	Naphthalene	Acetaldehyde	Acrolein	1,3-Butadiene	Chlorobenzene	Ethylbenzene	Hydrogen Chloride	Arsenic	Beryllium	Cadmium	Total Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	**Units**	**References**
Combustion	Process Heater: H-206	286	0.0013	0.0059	0.0265	0.0197	–	0.0123	0.0030	0.0031	0.0027	–	–	0.0020	–	2.0E-04	1.2E-05	1.1E-03	1.4E-03	8.4E-05	–	3.8E-04	2.6E-04	2.1E-03	2.4E-05	lb/MMscf	B
Combustion - Flare/TO	Planned - Pilot Gas	288	0.0290	0.1590	0.0580	0.0290	–	1.1690	0.0110	0.0430	0.0100	–	–	1.4440	–	2.0E-04	1.2E-05	1.1E-03	1.4E-03	8.4E-05	–	3.8E-04	2.6E-04	2.1E-03	2.4E-05	lb/MMscf	C
H-205	Planned	288	0.0290	0.1590	0.0580	0.0290	–	1.1690	0.0110	0.0430	0.0100	–	–	1.4440	–	2.0E-04	1.2E-05	1.1E-03	1.4E-03	8.4E-05	–	3.8E-04	2.6E-04	2.1E-03	2.4E-05	lb/MMscf	C
	Unplanned	288	0.0290	0.1590	0.0580	0.0290	–	1.1690	0.0110	0.0430	0.0100	–	–	1.4440	–	2.0E-04	1.2E-05	1.1E-03	1.4E-03	8.4E-05	–	3.8E-04	2.6E-04	2.1E-03	2.4E-05	lb/MMscf	C
H-2061	Planned - Pilot Gas	287	0.0290	0.1590	0.0580	0.0290	–	1.1690	0.0110	0.0430	0.0100	–	–	1.4440	–	2.0E-04	1.2E-05	1.1E-03	1.4E-03	8.4E-05	–	3.8E-04	2.6E-04	2.1E-03	2.4E-05	lb/MMscf	C
	Planned	287	0.0290	0.1590	0.0580	0.0290	–	1.1690	0.0110	0.0430	0.0100	–	–	1.4440	–	2.0E-04	1.2E-05	1.1E-03	1.4E-03	8.4E-05	–	3.8E-04	2.6E-04	2.1E-03	2.4E-05	lb/MMscf	C
	Unplanned	287	0.0290	0.1590	0.0580	0.0290	–	1.1690	0.0110	0.0430	0.0100	–	–	1.4440	–	2.0E-04	1.2E-05	1.1E-03	1.4E-03	8.4E-05	–	3.8E-04	2.6E-04	2.1E-03	2.4E-05	lb/MMscf	C
H-2071	Planned - Pilot Gas	286	0.0290	0.1590	0.0580	0.0290	–	1.1690	0.0110	0.0430	0.0100	–	–	1.4440	–	2.0E-04	1.2E-05	1.1E-03	1.4E-03	8.4E-05	–	3.8E-04	2.6E-04	2.1E-03	2.4E-05	lb/MMscf	C
	Planned	286	0.0290	0.1590	0.0580	0.0290	–	1.1690	0.0110	0.0430	0.0100	–	–	1.4440	–	2.0E-04	1.2E-05	1.1E-03	1.4E-03	8.4E-05	–	3.8E-04	2.6E-04	2.1E-03	2.4E-05	lb/MMscf	C
	Unplanned	286	0.0290	0.1590	0.0580	0.0290	–	1.1690	0.0110	0.0430	0.0100	–	–	1.4440	–	2.0E-04	1.2E-05	1.1E-03	1.4E-03	8.4E-05	–	3.8E-04	2.6E-04	2.1E-03	2.4E-05	lb/MMscf	C
IC Engines	Emergency Standby DICE	9010	0.0269	0.1863	0.1054	0.0424	–	1.7261	0.0197	0.7833	0.0339	0.2174	0.0002	0.0109	0.1863	0.0016	–	0.0015	0.0006	–	0.0083	0.0031	0.0020	0.0039	0.0022	lb/1000 gal	D
Oil Storage Tank	Oil Tank: T-202	283	0.0531	0.0271	0.0158	–	0.0045	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	lb/lb-ROC	E
	Oil Tank: T-203	6477	0.0531	0.0271	0.0158	–	0.0045	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	lb/lb-ROC	E
	Oil Tank: T-204	284	0.0531	0.0271	0.0158	–	0.0045	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	lb/lb-ROC	E
Pigging Equipmt.	Receiver: Oil emulsion	9200	0.3000	0.0030	–	–	0.2636	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	lb/lb-ROC	F
	Receiver: Utility	9200	0.3000	0.0030	–	–	0.2636	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	lb/lb-ROC	F
	Receiver: Produced Gas	9200	0.3214	0.0032	–	–	0.2825	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	lb/lb-ROC	G
	Launcher: Seep Gas	9337	0.3214	0.0032	–	–	0.2825	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	lb/lb-ROC	G
Sump/Wastewater Tanks	Sump Tank: S-202	9327	0.0528	0.0264	0.0165	–	0.0050	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	lb/lb-ROC	H
	Wastewater Tank: TK-201	106004	0.0528	0.0264	0.0165	–	0.0050	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	lb/lb-ROC	H
	Oil Sump S-203	9330	0.0528	0.0264	0.0165	–	0.0050	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	lb/lb-ROC	H
Loading Rack	Rack - LPG/NGL	8003	0.0531	0.0271	0.0158	–	0.0045	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	lb/lb-ROC	E
Fugitive Components																													
Gas/Light Liquid Service	Valves: Accessible	297	0.1677	0.0032	–	–	0.2289	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	lb/lb-ROC	F
	Valves: Inaccessible	310	0.1677	0.0032	–	–	0.2289	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	lb/lb-ROC	F
	Valves: Unsafe	9118	0.1677	0.0032	–	–	0.2289	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	lb/lb-ROC	F
	Connections: Accessible	300	0.1677	0.0032	–	–	0.2023	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	lb/lb-ROC	F
	Connections: Inaccessible	312	0.1677	0.0032	–	–	0.2023	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	lb/lb-ROC	F
	Connections: Unsafe	9120	0.1677	0.0032	–	–	0.2023	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	lb/lb-ROC	F
	Compressor Seal	9121	0.1677	0.0032	–	–	0.4350	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	lb/lb-ROC	F
	Pres. Relief Valve: Accessible	9122	0.1677	0.0032	–	–	1.2429	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	lb/lb-ROC	F
	Pres. Relief Valve: Inaccessible	9123	0.1677	0.0032	–	–	1.2429	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	lb/lb-ROC	F
	Pressure Relief Valve: Unsafe	N/A	0.1677	0.0032	–	–	1.2429	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	lb/lb-ROC	F
	Pump Seal	9125	0.1677	0.0032	–	–	0.1101	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	lb/lb-ROC	F
Oil Service	Valves: Accessible	298	0.1768	0.0018	–	–	0.2636	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	lb/lb-ROC	F
	Valves: Accessible (Category E)	298	0.1768	0.0018	–	–	0.2636	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	lb/lb-ROC	F
	Connections: Accessible	301	0.1768	0.0018	–	–	0.2636	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	lb/lb-ROC	F
	Connections: Accessible (Cat. E)	301	0.1768	0.0018	–	–	0.2636	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	lb/lb-ROC	F
	Connections: Unsafe	N/A	0.1768	0.0018	–	–	0.2636	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	lb/lb-ROC	F
	Pres. Relief Valve: Accessible	9127	0.1768	0.0018	–	–	0.2636	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	lb/lb-ROC	F
	Pump Seal	9128	0.1768	0.0018	–	–	0.2636	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	lb/lb-ROC	F
Solvent/coatings Usage	Cleaning/Degreasing	9521	–	0.05	0.05	0.05	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	lb/lb-ROC	I

References:
A1 - VCAPCD, AB 2588 Combustion Emission Factors (2001) - Natural Gas Fired External Combustion Equipment (<10 MMBTUH)
A2 - USEPA, AP-42 Table 1.4-4, Emission Factors for Metals from Natural Gas Combustion
B1 - VCAPCD, AB 2588 Combustion Emission Factors (2001) - Natural Gas Fired External Combustion Equipment (10-100 MMBTUH)
B2 - USEPA, AP-42 Table 1.4-4, Emission Factors for Metals from Natural Gas Combustion
C1 - VCAPCD, AB 2588 Combustion Emission Factors (2001) - Natural Gas Fired External Combustion Equipment (flare)
C2 - USEPA, AP-42 Table 1.4-4, Emission Factors for Metals from Natural Gas Combustion
D - VCAPCD, AB 2588 Combustion Emission Factors (2001) - Diesel Combustion Factors (internal combustion)
E - CARB Speciation Manual Second Edition (1991), Profile Number 297 - Crude Oil Evaporation - Vapor Composite from Fixed Roof Tanks
F - The emission factors, originally in units of lb/lb-TOC, were converted to lb/lb-ROC using an ROC/TOC fraction of 0.31 from Table 2 of the District's P&P 6100.061
G- The emission factors, originally in units of lb/lb-TOC, were converted to lb/lb-ROC using an ROC/TOC fraction of 0.86 from Table 2 of the District's P&P 6100.061
H - CARB Speciation Manual Second Edition (1991) Profile Number 532 - Oil & Gas Extraction - Well Heads & Cellars/Oil & Water Separators
I - APCD: Solvents assumed to contain 5% benzene, 5% toluene, 5% xylene

Table 5.4-2
Ellwood Onshore Facility: Part 70/PTO 7904-R12
Annual Hazardous Air Pollutant Emissions (TPY)

Equipment Category	Description	APCD Device ID	Hexane	Benzene	Toluene	Xylene	Iso-Octane	Formaldehyde	Naphthalene	Acetaldehyde	Acrolein	1,3-Butadiene	Chloroethylene	Ethylbenzene	Hydrogen Chloride	Arsenic	Beryllium	Cadmium	Total Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium
Combustion - External	Process Heater: H-204	285	1.38E-04	9.05E-04	2.79E-03	2.06E-03	–	1.28E-03	3.13E-04	3.23E-04	2.82E-04	–	–	2.06E-04	–	2.06E-05	1.25E-06	1.15E-04	1.46E-04	9.76E-06	–	3.66E-05	2.71E-05	2.16E-04	2.50E-06
Combustion - Flare/TO																									
H-205	Planned - Pilot Gas	288	0.00E+00	0.00E+00	0.00E+00	0.00E+00	–	0.00E+00	0.00E+00	0.00E+00	0.00E+00	–	–	0.00E+00	–	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	–	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Planned	288	2.79E-03	1.53E-02	5.58E-03	2.79E-03	–	1.12E-01	1.99E-03	4.14E-03	9.62E-04	–	–	1.39E-01	–	1.92E-05	1.15E-06	1.06E-04	1.33E-04	8.86E-06	–	3.66E-05	2.93E-05	2.02E-04	2.31E-06
	Unplanned	288	0.00E+00	0.00E+00	0.00E+00	0.00E+00	–	0.00E+00	0.00E+00	0.00E+00	0.00E+00	–	–	0.00E+00	–	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	–	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-2061	Planned - Pilot Gas	287	4.11E-05	2.26E-04	8.23E-05	4.11E-05	–	1.66E-03	1.99E-05	6.10E-05	1.42E-05	–	–	2.05E-03	–	2.84E-07	1.70E-08	1.56E-06	1.99E-06	1.19E-07	–	5.38E-07	3.99E-07	2.66E-06	3.40E-08
	Planned	287	2.39E-03	1.31E-02	4.78E-03	2.39E-03	–	9.64E-02	9.07E-04	3.55E-03	8.24E-04	–	–	1.19E-01	–	1.65E-05	9.89E-07	9.07E-05	1.15E-04	6.93E-06	–	3.13E-05	2.14E-05	1.73E-04	1.98E-06
	Unplanned	287	0.00E+00	0.00E+00	0.00E+00	0.00E+00	–	0.00E+00	0.00E+00	0.00E+00	0.00E+00	–	–	0.00E+00	–	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	–	0.00E+00	0.00E+00	0.00E+00	0.00E+00
H-2071	Planned - Pilot Gas	286	1.21E-04	6.63E-04	2.42E-04	1.21E-04	–	4.88E-03	4.59E-05	1.79E-04	4.17E-05	–	–	6.02E-03	–	8.34E-07	5.01E-08	4.59E-06	5.84E-06	3.50E-07	–	1.58E-06	1.08E-06	8.76E-06	1.00E-07
	Planned	286	7.57E-04	4.15E-03	1.51E-03	7.57E-04	–	3.05E-02	2.87E-04	1.12E-03	2.61E-04	–	–	3.77E-02	–	5.22E-06	3.13E-07	2.87E-05	3.66E-05	2.19E-06	–	9.92E-06	6.79E-06	5.48E-05	6.27E-07
	Unplanned	286	0.00E+00	0.00E+00	0.00E+00	0.00E+00	–	0.00E+00	0.00E+00	0.00E+00	0.00E+00	–	–	0.00E+00	–	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	–	0.00E+00	0.00E+00	0.00E+00	0.00E+00
IC Engines	Emergency Standby DICE	9310	1.21E-05	8.30E-05	4.73E-05	1.00E-05	–	7.74E-04	8.83E-06	3.51E-04	1.52E-05	9.75E-05	8.97E-06	4.66E-06	8.35E-05	7.17E-07	–	8.73E-07	2.69E-07	–	3.72E-06	1.38E-06	8.97E-07	1.75E-06	9.86E-07
Oil Storage Tank	Oil Tank: T-202	283	6.32E-02	3.23E-02	1.88E-02	–	5.39E-03	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Oil Tank: T-203	6477	6.32E-02	3.23E-02	1.88E-02	–	5.39E-03	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Oil Tank: T-204	284	2.18E-02	1.11E-02	6.49E-03	–	1.85E-03	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Pigging Equipmt	Receiver: Oil emulsion	9200	1.23E-02	1.24E-04	–	–	1.04E-02	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Receiver: Utility	9200	1.54E-03	1.55E-05	–	–	1.30E-03	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Receiver: Produced Gas	9200	4.17E-04	4.21E-06	–	–	5.66E-04	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Launcher: Seep Gas	9337	3.61E-04	3.65E-06	–	–	3.18E-04	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Sump/Wastewater Tanks	Sump Tank: S-202	9327	2.88E-04	1.44E-04	8.99E-05	–	2.70E-05	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Wastewater Tank: TK-201	109004	6.13E-03	3.07E-03	1.92E-03	–	5.75E-04	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Oil Sump S-203	9330	6.67E-03	3.34E-03	2.09E-03	–	6.26E-04	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Loading Rack	Rack - LPG/NGL	9003	1.27E-02	6.51E-03	3.93E-03	–	1.08E-03	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Fugitive Components																									
Gas/Light Liquid Service	Valves: Accessible	287	8.71E+00	1.88E-01	–	–	1.19E+01	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Valves: Inaccessible	310	9.84E-03	1.88E-04	–	–	1.34E-02	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Valves: Unsafe	9118	7.38E-02	1.41E-03	–	–	1.01E-01	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Connections: Accessible	300	3.66E+00	5.66E-02	–	–	3.66E+00	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Connections: Inaccessible	312	3.55E-01	6.78E-03	–	–	4.29E-01	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Connections: Unsafe	9120	5.93E-02	1.14E-03	–	–	7.18E-02	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Compressor Seal	9121	2.64E-01	5.04E-03	–	–	8.86E-01	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Pres. Relief Valve: Accessible	9122	3.15E-01	6.02E-03	–	–	2.34E+00	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Pres. Relief Valve: Inaccessible	9123	8.52E-03	1.63E-04	–	–	6.32E-02	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Pressure Relief Valve: Unsafe	N/A	0.00E+00	0.00E+00	–	–	0.00E+00	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Pump Seal	9125	1.80E-01	3.04E-03	–	–	1.05E-01	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Oil Service	Valves: Accessible	298	5.93E-01	8.04E-03	–	–	8.85E-01	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Valves: Accessible (Category E)	298	4.02E-02	4.06E-04	–	–	5.99E-02	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Connections: Accessible	301	4.81E-01	4.66E-03	–	–	6.88E-01	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Connections: Accessible (Cat. E)	301	2.78E-02	2.83E-04	–	–	4.15E-02	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Connections: Unsafe	N/A	0.00E+00	0.00E+00	–	–	0.00E+00	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Pres. Relief Valve: Accessible	9127	0.00E+00	0.00E+00	–	–	0.00E+00	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	Pump Seal	9128	1.95E-02	1.99E-04	–	–	2.91E-02	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Solvent/coatings Usage	Cleaning/Degreasing	9521	–	7.81E-02	7.81E-02	7.81E-02	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Notes:
1. These are estimates only, and are not intended to represent emission limits.
2. Based on CAAA, Section 112 (b) (6) regulations, the HAP emissions listed above can not be aggregated at the source for any purpose, including determination of HAP major source status for MACT applicability.
3. Natural gas emission calculations are based on a standard value of 1000 BTU/scf.
4. Default fuel properties for diesel are from Table 6.4 of the SBCAPCD's Portal IC Engine Technical Reference Document (2000), available at https://www.sbcapcd.org/wp-content/uploads/docapcdcentdoc.pdf.



6.0 Air Quality Impact Analyses

6.1 Modeling

An Air Quality Impact Analysis (AQIA) of the potential total reduced sulfur compound (TRS) impacts was performed in the past to determine compliance with District Rule 310 (*Odorous Organic Sulfides*). Based on this analysis, modifications to the Odor Abatement System were required (see Section 4.4 for current configuration). Subsequent modeling was also performed to site H_2S sensors for Rule 310 compliance (see Section 3.4.2, Rule 310 discussion).

6.2 Increments

An air quality increment analysis has not been required for this stationary source.

6.3 Monitoring

Pursuant to Abatement Order 99-6(A), the permittee installed two ambient air monitoring stations, approved by the District, to monitor meteorological and odorous organic sulfide concentrations in the vicinity of the Ellwood Onshore Facility. As part of a Part 70 Significant Modification (re: PT-70 Mod 7904-06), the Ellwood offsite odor monitoring station will be relocated to the UCSB West Campus odor monitoring station site, and the offsite odor monitoring requirement will be transferred from this permit to the Platform Holly permit. The District determined that West Campus odor monitoring station, in combination with the existing 14 onsite H_2S monitors and meteorological station, is better suited to serve the public during the next phase of operations of the South Ellwood Field source. These requirements to operate and maintain the West Campus Station were incorporated into the Platform Holly Part 70 operating permit (PTO 8234-R10). The remaining ambient air monitoring station is equipped to continuously monitor and telemeter the data to the District in a manner consistent with the District's *Ambient Air Monitoring Protocol*. This monitor is identified and described in Table 9-6 of Permit Condition C.16

6.4 Health Risk Assessment

The *South Ellwood Field* stationary source is subject to the Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588). In April 2005, the District conducted air toxics Health Risk Assessment (HRA) for the Venoco Ellwood Onshore Facility, using the Hotspots Analysis and Reporting Program (HARP) software, Version 1.1 (Build 23.02.10). Cancer risk and chronic and acute non-cancer Hazard Index (HI) risk values were calculated and compared to significance thresholds for cancer and chronic and acute non-cancer risk adopted by the District's Board of Directors. The calculated risk values and applicable thresholds are as follows:

	EOF Max Risks	Significance Threshold
Cancer risk:	23.6 /million	$\geq$10/million
Chronic non-cancer risk:	0.0522	$\geq$ 1
Acute non-cancer risk:	0.9574	$\geq$ 1

Based on the 2002 toxic emissions inventory, the Ellwood Onshore Facility has reduced their facility's risk to the public. The acute hazard index is 0.957 and the chronic hazard index is 0.052, which are below the District's thresholds of 1.0. The cancer risk is primarily due to particulate matter emissions from diesel engines. Diesel exhaust is emitted from two diesel internal combustion engines: one engine used to drive an emergency firewater pump and one engine used to drive an emergency backup electrical generator.

The cancer risk extends off the property boundary approximately 45 meters (see attached aerial photo with cancer risk footprint). However, the cancer risk isopleth is within their easement and the public does not have access to this area. In addition, the isopleth is in a rugged vegetation area that the public cannot easily access even if they tried entry. As part of the Risk Reduction Audit and Plan, the permittee has agreed to post signs along the easement to ensure the public is kept out of the exposed area. In addition, the permittee began using a diesel fuel additive in 2005 to reduce the diesel particulate matter emissions following identification of those emissions as a risk factor.

Historically, the cancer risk was driven from polycyclic aromatic hydrocarbons (PAH) and the acute and chronic non-cancer risks were driven by hydrogen sulfide. The cancer risk identified from PAH in the 1998 HRA was reduced below District's significance threshold. In addition, the acute and chronic non-cancer risks were reduced below District's significance levels. The calculated risk values for inventory year 1998 were as follows:

	EOF Max Risks	Significance Threshold
Cancer risk:	90.06 /million	$\geq$10/million
Chronic non-cancer risk:	1.97	$\geq$ 1
Acute non-cancer risk:	21.96	$\geq$ 1

ELLWOOD ONSHORE FACILITY

10 in a million Cancer Risk Footprint for Reporting Year 2002

Legend:

- Red Line (*thick black line*) = property boundary of Ellwood Onshore Facility
- Orange Line (*thin white line*) = 10 in a million cancer footprint

7.0 CAP Consistency, Offset Requirements and ERCs

7.1 General

Santa Barbara County has not attained the state PM_{10} 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 progress toward attainment of federal and state ambient air quality standards. Under District regulations, any modifications at the source that result in an emission increase of any nonattainment pollutant exceeding 25 lbs/day must apply BACT (NAR). Increases above offset thresholds will 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 240 lbs/day for all attainment pollutants and precursors (except carbon monoxide and $PM_{2.5}$) and 25 tons/year for all non-attainment pollutants and precursors (except carbon monoxide and $PM_{2.5}$).

On July 1, 2020, Santa Barbara County achieved attainment for the State ozone standards. This change was initiated by the California Air Resources Board (CARB) at their December 2019 public hearing and it was later approved by the Office of Administrative Law.

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.

In December 2019 the District Board adopted the 2019 Ozone Plan. The 2019 Plan provides a three-year update to the 2010 Clean Air Plan. As Santa Barbara County has only recently attained the state eight-hour ozone standard, the 2019 Clean Air Plan demonstrates how the District plans to maintain that standard. The 2019 Clean Air Plan therefore satisfies all state triennial planning requirements.

7.3 Offset Requirements

The South Ellwood Field stationary source exceeds the emission offset thresholds of Regulation VIII for NO_x, ROC and SO_x emissions. This stationary source did not become subject to the emission offset requirements of Regulation VIII until adoption of revised Rule 802 in August 2016. Any new project emission increase for these pollutants are required to provide emission reduction credits for the project.

7.4 *Emission Reduction Credits*

The Ellwood Onshore Facility provides ROC emission reduction credits to The Pt. Arguello Project (currently operated by Freeport McMoran) as required by the District ATC 5704 issued to Chevron. In 1988, a fugitive hydrocarbon inspection and maintenance (I&M) program was implemented at the EOF (Reference: District ATC #7234, 6/9/88) to generate ROC ERC's for

use by The Point Arguello Project. This program pre-dates the District's SIP-approved I&M Rule 331, adopted in December 1991. The implementation of the I&M program was verified by the District on 6/21/89. The I&M program generated 180 tons/year of ROC emission reduction credits. The agreement leasing these emission reduction credits was signed by ARCO and Chevron and approved by the District on 6/30/89. The District issued PTO 7234 to ARCO on 5/10/90 formalizing the ATC 7234, after a final count of the fugitive emission components was obtained and verifiable baseline fugitive emissions levels for ROC were established.

ROC Emission Reduction Credits. Emission reductions due to the ATC 7234's I&M Program were factored into an informal I&M program in place at the EOF. The informal I&M Program was in place at the EOF in response to odor complaints and the issuance of County Ordinance 2919 in 1977, much earlier than the formal 1989 program; however, the effective level of control of this informal program had not been assessed or quantified previously. The baseline ROC emissions at the EOF were adjusted to account for the informal I&M program as described below:

Uncontrolled ROC emissions from components were calculated using the same emission factors as were applied to the Chevron Gaviota facility that needed the ERC's. The constituents of the informal program such as inspection frequency, leak definition and repair deadlines were compared to an existing BACT level I&M program to quantify this program's control efficiency. Some feasibility considerations were also made regarding the actual implementation of the formal program and were factored into the formal program's control efficiency. These factors are listed in PTO 7234. Based on all factors and considerations, the baseline control efficiency of the informal program was assumed to be thirty-eight (38) percent, and baseline ROC's were reduced accordingly.

Control efficiencies associated with the District-approved I&M program were assumed to meet the same levels as other District-approved 1989 programs with the same features, e.g., Chevron Carpinteria Plant I&M Program. These efficiencies ranged from 69 percent for connector fugitive emissions to 79 percent for valve fugitive emissions. Open-ended lines, which were capped off, were zeroed out of any ROC emissions (100 percent efficiency). These controls, applied to the adjusted baseline, resulted in an estimated emission reduction of 180 tons/year or 45 tons/quarter.

The 1989 I&M Plan submitted to the District is comprised of the document titled *Final Ellwood Onshore Processing Facility Fugitive Hydrocarbon Inspection & Maintenance Plan: ATC No. 7234* (June 23, 1989). Details of the ATC/PTO 7234 ERC's, as generated by the Plan, are contained in the District project files.

In May 1993, ATC 5704-11 was issued to Chevron Pt. Arguello Project lowering the amount of ERC's required to be leased by the Project from Mobil EOF. PTO 7234 issued to Mobil in August, 1993 did not reflect this change; however, PTO 7234 issued to Mobil in December, 1996 reduced the available ROC emission reductions from the EOF to 141.5 tons/year and the available ERC's to 108.1 tons/year. The amount of ERC's used by The Point Arguello Project was further reduced in 2001 to 101.1 tpy ROC (re: ATC 10439, issued 5/24/01 to Arguello, Inc.).

The permittee (or any prior owner or operator of the EOF) has not generated ERC's in the form of an ERC Certificate pursuant to Rule 806.

8.0 CEQA and Lead Agency Permit Consistency

8.1 CEQA

The District is the lead agency under CEQA for this permit, and has prepared a Notice of Exemption. This project is exempt from CEQA pursuant to the Environmental Review Guidelines for the Santa Barbara County APCD (revised April 30, 2015). Appendix 1.A.i (*APCD Projects Exempt from CEQA* and *Equipment or Operations Exempt from CEQA*) provides an exemption specifically for permits to operate and reevaluations thereof. A copy of the final Notice of Exemption is filed with the Santa Barbara County Clerk of the Board.

8.2 Lead Agency Permit Consistency

Except as discussed below, to the best of the District's knowledge, no other governmental agency's permit requires air quality mitigation.

The Ellwood Onshore Facility operates under a Santa Barbara County zoning restriction (Ordinance 2919, dated 12/77) that restricts total ROC emissions from the storage tanks and from the tanker operations at the adjacent Ellwood Marine Terminal to 140 lbs/day. A 1996 update to this Ordinance stipulates the Ellwood Onshore Facility operate to conform to the provisions of District permit ATC 9473. The District is responsible for enforcing these restrictions.

The District is the lead agency for this project. Pursuant to Appendix "A" of the *Environmental Review Guidelines for the Santa Barbara County Air Pollution Control District*, operating permits are exempt from CEQA review. A description of the EOF's operations is provided in Section 2 of this permit.

TABLE OF CONTENTS

9.0 Permit Conditions

This section lists the applicable permit conditions for the Ellwood Onshore Facility (EOF). 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 condition contained in Sections 9.A, 9.B or 9.C refers to any other part of this permit, the 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 the Ellwood Onshore Facility (EOF):

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 condition.
(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 Rules 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.9 [*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 **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 submit an application for renewal of the Part 70 permit not later than 6 months before the date of the permit expiration. Upon submittal of a timely and complete renewal application, the Part 70 permit shall remain in effect until the Control Officer issues or denies the renewal application. [*Re: District Rule 1304.D.1*]

A.6 **Payment of Fees.** The permittee shall reimburse the District for all its Part 70 permit processing and compliance expenses, including expenses associated with implementation of permit conditions incorporated pursuant to Abatement Order 99-6A, 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*), AO 99-6A]

A.7 **Deviation from Permit Requirements.** 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 7 days after discovery of the violation, but not later than 180 days 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.* [*Re: District Rule 1303.D.1, 40 CFR 70.6(a) (3)*]

A.8 **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.9 **Reporting Requirements/Compliance Certification.** The permittee shall submit compliance certification reports to the USEPA and the Control Officer every six months. A paper copy, as well as, a complete PDF electronic copy of these reports, shall be in a format approved by the District. 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 1 and March 1, 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 **Recordkeeping Requirements.** The permittee shall maintain records of required monitoring information that include the following:

(a) The date, place as defined in the permit, and time of sampling or measurements;
(b) The date(s) analyses were performed;
(c) The company or entity that performed the analyses;
(d) The analytical techniques or methods used;
(e) The results of such analyses; and
(f) The operating conditions as existing at the time of sampling or measurement;

The records, 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.11 **Conditions for Permit Reopening.** The permit shall be reopened and revised for cause under any of the following circumstances:

(a) Additional Requirements: If additional applicable requirements (e.g., NSPS or MACT) become applicable to the source that 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.

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 causes to reopen exist. If the permit is reopened, and revised, it will be reissued with the expiration date that was listed in the permit before the re-opening. [*Re: 40 CFR 70.7(f), 40 CFR 70.6(a)*]

A.12 **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*

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).** The permittee 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 that 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.

The permittee shall determine compliance with the requirements of this Rule in accordance with the monitoring and compliance recordkeeping procedures in Condition 9.C.24. [*Re: District Rule 302]***.**

B.3 **Nuisance (Rule 303).** No pollutant emissions from any source at The permittee 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 - South Zone (Rule 305).** The permittee shall not discharge into the atmosphere, from any source, particulate matter in excess of the concentrations listed in Table 305(a) of Rule 305. [*Re: District Rule 305*]

B.5 **Specific Contaminants (Rule 309).** The permittee shall not discharge into the atmosphere from any single source sulfur compounds, carbon monoxide and combustion contaminants in excess of the applicable standards listed in Sections A, E and G of Rule 309. [*Re: District Rule 309*].

B.6 **Sulfur Content of Fuels (Rule 311).** The permittee shall not burn fuels with a sulfur content in excess of 0.5% (by weight) for liquid fuels and 239 ppmvd or 15 gr/100 scf (calculated as H_2S) for gaseous fuel (most gaseous fuel burning equipment at EOF is subject to more stringent sulfur content limits). Compliance with the requirements pertaining to gaseous fuels shall be based on measurements of the in-plant fuel gas using continuous analyzers, sulfur detection tubes, ASTM, or other District-approved methods; and, compliance with the requirements pertaining to liquid fuels shall be based on diesel fuel billing records or other data showing the certified sulfur content for each shipment. [*Re: District Rule 311*]

B.7 **Organic Solvents (Rule 317).** The permittee shall comply with the emission standards listed in Section B of Rule 317. Compliance with this condition shall be based on compliance with the Solvent Usage condition of this permit. [*Re: District Rule 317*]

B.8 **Vacuum Producing Devices or Systems – Southern Zone (Rule 318).** The permittee shall not discharge into the atmosphere more than 3 pounds of organic materials in any one hour from any vacuum producing devices or systems, including hot wells and accumulators, unless said discharge has been reduced by at least 90 percent. [*Re: District Rule 318*]

B.9 **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 compliance with the Solvent Usage condition of this permit and facility inspections. [*Re: District Rule 322*]

B.10 **Architectural Coatings (Rule 323.I).** The permittee shall comply with the emission standards listed in Section D of Rule 323.I as well as the Administrative requirements listed in Section F of Rule 323. Compliance with this condition shall be based on Compliance with the Solvent Usage condition of this permit and facility inspections. [*Re: District Rules 323*]

B.11 **Disposal and Evaporation of Solvents (Rule 324).** The permittee 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 compliance with the Solvent Usage condition of this permit and facility inspections. [*Re: District Rule 324*]

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.** The permittee shall comply with the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPS) for Oil and Natural Gas Production and Natural Gas Transmission and Storage (promulgated June 17, 1999), *including any applicable MACT recordkeeping and reporting requirements.* [*Re:* 40 CFR 63, Subpart HH]

B.14 **CARB-Registered Portable Equipment.** State-registered portable equipment shall comply with State registration requirements. A copy of the State registration shall be readily available whenever the equipment is at the facility. [*Re: District Rule 202*]

9.C Equipment-Specific Conditions

Federally enforceable conditions, including emissions and operations limits, monitoring, recordkeeping and reporting are included in this section for each specific group of equipment as well as other non-generic requirements.

C.1 **External Combustion Equipment.** The following equipment is included in this emissions unit category:

District ID No.	Equipment ID No.	Name
000285	H-204	Process Heater, H-204 (25.000 MMBtu/hr)

(a) Emission Limits: The following equipment-specific emission limits apply to the external combustion unit listed above:

(i) *Mass Emission Rate Limits.* Mass emission rates resulting from the operation of the equipment listed above shall not exceed the corresponding values listed for each unit in Table 5.1-3 and Table 5.1-4. Compliance with this condition shall be based on the fuel usage, the sulfur content of the fuel gas and the monitoring, recordkeeping and reporting conditions listed below. The monthly fuel heat content analyses shall be used in conjunction with the fuel gas flow rate data for determining compliance.

(ii) *Oxides of Nitrogen (NO_x) and Carbon Monoxide (CO) Concentration Emission Limits.* For Process Heater H-204, stack emissions shall not exceed:

- NO_x (as NO_2): 30 ppmvd at 3% O_2 or 0.036 lb/MMBtu heat input (HHV based)
- CO 400 ppmvd at 3% O_2.

Compliance shall be based on source testing/monitoring requirement specified in 9.C.1(c).

(b) Operation Limits: Operation of the equipment listed above shall be conducted in compliance with all data, specifications and assumptions included with the ATC applications (and supplements thereof) as documented in the District project files and in the District's engineering analyses under which this permit is issued. As it relates to emissions, the equipment listed above must be properly maintained in accordance with the equipment manufacturer's maintenance manual.

The following additional operational limits shall apply:

(i) *Heat Input Limits.* The hourly, daily, and annual heat input to the process heater shall not exceed the values listed in Table 9-1 below. These limits are based on the design rating of the equipment and the annual heat input values as listed in the permit applications from the permittee and the District's engineering analyses. Compliance with this condition shall be based on fuel and permeate gas usage data and in-plant fuel gas analysis data for heat content. The monthly fuel heat content analyses shall be used in conjunction with the fuel

and permeate gas flow rate data for determining compliance.

Table 9-1. Process Heater Heat Input Limits

Unit	No.	Fuel	HEAT INPUT LIMITS		
			MMBtu/hr	MMBtu/day	MMBtu/yr
Process Heater	H-204	In-plant Fuel/Grace Unit Permeate Gas	25.000	600.0	219,000

(ii) *Process Heater Fuel Sulfur Limit.* Process heater H-204 shall be fired solely on in-plant fuel gas with a total sulfur and hydrogen sulfide (H_2S) content (calculated as H_2S at standard conditions, 60°F and 14.7 psia) not exceeding 80 ppmv and 4 ppmv, respectively, or on a combination of in-plant fuel gas and grace unit permeate with a total sulfur content (calculated as H_2S at standard conditions, 60°F and 14.7 psia) not exceeding 239 ppmv.

(iii) *Fuel Usage Metering.* The process heater shall be equipped with dedicated operational fuel meters for both the in-plant fuel gas and the permeate gas lines to that unit.

(c) Monitoring:

(i) *Process Heater (H-204) - Source Testing.* The permittee shall conduct annual stack emissions testing of H-204 emissions and process parameters listed in Table 9-2 below. The permittee may perform source testing on a biennial basis upon written approval of the District. The permittee shall submit a written source test plan to the District for approval 30 days prior to the anniversary date of the last source test. The anniversary source test date shall be January 1st or other date approved in advance by the District. The source test plan shall be prepared consistent with the District's *"Source Test Procedures Manual"* (revised May 24, 1990 and updates thereof). The permittee shall obtain written District approval of the source test plan prior to 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.

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 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.

Table 9-2 Source Test Requirements: Process Heater H-204

Emission Points	Pollutants/ Parameters	Test Methods [a), (c), (d)]
Heater Stack	NO_x - ppmv & lb/hr [(b)]	EPA Method 7E
	CO - ppmv & lb/hr [(b)]	EPA Method 10
	ROC - ppmv & lb/hr [(b)]	EPA Method 18
	Sampling Point Dtr	EPA Method 1
	Stack Gas Flow Rate	EPA Method 2
	O_2, CO_2, Dry Mol Wt	EPA Method 3
	Moisture Content	EPA Method 4
Gas Lines	PUC NG Fuel Gas Flow	EOF Gas Meter
	Permeate gas Flow	EOF Gas Meter
	Higher Heating Value	ASTM D 1826-88
	Total Sulfur Content	ASTM D 1072

Site Specific Requirements

a. Alternative methods may be acceptable on a case-by-case basis.
b. This test is required to characterize the maximum hourly "potential to emit" when fired on Grace Unit permeate gas, or a combination of permeate gas and PUC quality in-plant fuel gas, for NO_x, CO and ROC in units of ppmvd (at standard conditions and 3% O_2) and pounds per hour. The test shall be performed at the maximum attainable firing rate allowed by this permit, or the maximum sustainable firing rate that satisfies unit heat load requirements at the time of testing.
c. The emission rates shall be based on EPA Methods 2 and 4, or Method 19 along with the heat input rate.
d. For NO_x, CO and O_2 a minimum of three 40-minute runs shall be obtained during each test. An ROC sample for each run shall be taken over a minimum of 5 minutes in accordance with the sampling protocol defined in the source test plan.
e. Separate HHV and total sulfur content samples shall be taken for the PUC NG and permeate gas lines.
f. If a Method 2 stack traverse is performed, only one permeate gas sample for HHV and TRS needs to be taken over one of the 40 minute test runs. If the Method 2 traverse is not performed, a sample must be taken over each of the three 40 minute test runs.

Table Notes
- ROC = reactive organic compounds per District Rule 102
- Dtr = determination
- NG = natural gas

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. The permittee may request additional time to submit the results in writing at least 3 days prior to the submittal deadline. The District may approve an extension for good cause. All District costs associated with the review and approval of all plans and reports and the witnessing of tests for the H-204 unit shall be recovered per Rule 210.

Any District certified source test result that indicates the applicable Rule 342 or permit emission limitations have been exceeded shall constitute a violation of Rule 342 and/or the permit.

(ii) *Process Heater (H-204) In-plant Fuel Gas Flow Monitoring.* The total volume (in units of standard cubic feet) of the in-plant fuel gas consumed by the process heater shall be measured on an hourly, daily and annual basis. The dedicated fuel use meter shall be calibrated in accordance with the manufacturer's specifications.

(iii) *Process Heater (H-204) Grace Unit Permeate Gas Flow Monitoring.* The total volume (in units of standard cubic feet) of the Grace Unit permeate gas consumed by the process heater shall be measured on an hourly, daily and annual basis. The dedicated fuel use meter shall be calibrated in accordance with the manufacturer's specifications.

(iv) *Sulfur Content of In-plant Gas.* The permittee shall monitor the hydrogen sulfide (H_2S) content of the in-plant fuel gas to H-204 on a daily basis using District-approved methods. Once every six-months, the fuel shall sampled and analyzed to determine the total sulfur (TRS) content. The samples shall be analyzed in accordance with ASTM-D1072 or a District approved equivalent method. The semi-annual analyses shall be used to determine the non-H_2S fraction of the gas. The non-H_2S fraction shall be added to the daily H_2S readings for daily compliance determinations.

(v) *Sulfur Content of Grace Unit Permeate Gas.* The permittee shall monitor the hydrogen sulfide (H_2S) content of the permeate gas on a daily basis using District-approved methods. Once every six-months, the fuel shall sampled and analyzed to determine the total sulfur content. The samples shall be analyzed in accordance ASTM-D1072 or a District approved equivalent method. Upon written notification from the District, the permittee may be required to perform more frequent sampling and analyses or may be required to install a process monitor to provide semi-continuous monitoring. The semi-annual analyses shall be used to determine the non-H_2S fraction of the gas. The non-H_2S fraction shall be added to the daily H_2S readings for daily compliance determinations.

(vi) *Heat Value Content of In-plant Fuel Gas.* The higher heating value of the in-plant fuel gas shall be measured on a monthly basis using ASTM-D3588 or a District approved equivalent method.

(vii) *Heat Value Content of Grace Unit Permeate Gas.* The higher heating value of the permeate gas shall be measured on a monthly basis using ASTM-D3588 or a District approved equivalent method.

(d) Recordkeeping: The records required below shall be maintained by the permittee for a minimum period of five (5) calendar years and shall be made available to the District personnel upon request:

(i) Volume of in-plant fuel gas and the volume of permeate gas consumed and the corresponding heat inputs to the process heater for each day and cumulatively for the entire year in units of standard cubic feet and million BTUs, respectively. In addition, provide the combined heat input to the process heater for each day and cumulatively for the entire year in units of million BTUs.

(ii) The daily H_2S and semi-annual total sulfur analyses results. Copies of daily analysis sample results and semi-annual lab analyses reports shall be maintained.

(iii) The monthly higher heat value lab analyses.

(iv) Documentation showing how the gas flow and HHV data was used to determine the heat input to the process heater.

(v) Documentation showing how the non-H_2S fractions of the semi-annual total sulfur analyses were determined and how these values were used to adjust the daily H_2S sampling results to ascertain daily total sulfur values.

(vi) Results of all compliance source testing performed.

(vii) Maintenance logs for the process heater, its emission control system and fuel flow meter. Maintenance and calibration logs for each heater treater and its fuel flow meter.

(e) Reporting: On a semi-annual basis, a report detailing the previous six-month's activities shall be provided to the District. The report must list all data required by the *Semi-Annual Compliance Verification Reports* condition of this permit.
[*Re: District Rules 342, and 1303, ATC 9217/9217-01, ATC 9218/9218-01 and, 40 CFR 0.6.a.(iii)*]

C.2 **Combustion: Thermal Oxidizers.** The following equipment is included in this emission category:

District ID No.	Equipment ID No.	Name
000288	H-205	Thermal Oxidizer, H-205 (35 MMBtu/hr)
000287	H-206	Thermal Oxidizer, H-206 (220 MMBtu/hr)
000286	H-207	Thermal Oxidizer, H-207 (30 MMBtu/hr)

(a) Emission Limits: The following equipment-specific emission limits apply to the thermal oxidizer units listed above:

(i) *Mass Emission Rate Limits.* Mass emission rates resulting from the operation the equipment listed above shall not exceed the corresponding values listed in Table 5.1-3 and Table 5.1-4. Compliance with this condition shall be based on gas flow rates and gas analyses, as specified in conditions 9.C.2(c)(ii), (iii), (iv), (v), and (vi).

(ii) *Oxides of Nitrogen (NO_x) Mass Emission Rate Limit.* Emissions of NO_x (as NO_2) from the H-205 thermal oxidizer (at any load or in any operating condition) shall not exceed 0.040 lb/MMBtu. Compliance with this condition shall be based on source testing and on monthly analyzer monitoring as specified in condition 9.C.2(c).

(iii) *Carbon Monoxide (CO) Mass Emission Rate Limit.* Emissions of CO from the H-205 thermal oxidizer (at any load or in any operating condition) shall exceed neither 0.100 lb/MMBtu nor 3.50 lb/hour. Compliance with this condition shall be based on source testing.

(iv) *Reactive Organic Compound (ROC) Mass Emission Rate Limit.* Emissions of ROC from the H-205 thermal oxidizer (at any load or in any operating condition) shall not exceed 0.0027 lb/MMBtu. Compliance with this condition shall be based on source testing.

(b) Operation Limits: Operation of the equipment listed above shall be conducted in compliance with all data, specifications and assumptions included with the applications (and supplements thereof) as documented in the District project files and in the District's engineering analyses under which this permit is issued. As it relates to emissions, the equipment listed above shall be properly maintained in accordance with the equipment manufacturer's maintenance manual.

The following specific operational limits also apply to units H-205, H-206 and H-207:

(i) *Hourly Heat Input Limit.* The maximum permitted hourly heat input to each thermal oxidizer, including heat input from the pilot gas, is listed in Table 9-3:

Table 9-3. Heat Input Limits

Thermal Oxidizer	Pilot heat input limit (MMBtu/hr)	Flare gas heat input limit (MMBtu/hr)	Flare gas heat input limit (MMBtu/day)
H-205	---*	35.00	840.00
H-206	0.34	14.28	342.67
H-207	1.00	14.28	342.67

*Note – The pilot for H-205 is rated 0.1 MMBtu/hr and only fires briefly while the flare is being lit, so pilot flame emissions are not quantified for H-205.

Compliance with these limits shall be based on the manufacturer's rating of each flare, and the volume and HHV of gas combusted.

(ii) *Annual Heat Input Limit.* The annual heat input to all three thermal oxidizers combined, including heat input from the pilot gas, shall not exceed 213,734 MMBtu. Compliance with this limit shall be based on the volume and HHV of gas combusted.

(iii) *Flare Gas Volume Limits.* Planned continuous flaring in H-206 and H-207 shall not exceed 120,000 scf/day each. Planned flaring (continuous plus intermittent) from all thermal oxidizers at the facility combined shall not exceed 15,820,000 scf/month.

The CO_2 portion of the flare gas and the volume of LO-Cat exhaust air burned in H-205 is not counted against these limits.

(iv) *Planned/Unplanned Operations.* The definition of the words planned, unplanned, and emergency in this permit condition are based upon the definitions in Rule 359. The following operating limits shall apply to the equipment and operations described by this permit:

a. Except for operations under condition 9.C.2.(b).(iv).c. below, the LO-Cat sulfur removal process shall not process sour gas feedstock unless the H-205 thermal oxidizer and the LO-Cat VRU (*referred to as MOAS in Section 1.4*) are operating to fully incinerate all LO-Cat Oxidizer exhaust.

b. No more than 4,950 SCFM (basis: 10 percent more than the 4,500 SCFM nominal anticipated flow) of MOAS exhaust air may be delivered to the H-205 thermal oxidizer for incineration.

c. During any sour gas processing by the LO-Cat sulfur removal process, if the H-205 thermal oxidizer or the Lo Cat VRU (*referred to as MOAS in Section 1.4*) shut down or are not operating properly for any reason, the LO-Cat sulfur removal process shall also be shut down (i.e., cease sour gas processing) simultaneously. Further, at no time shall there be venting of LO-Cat exhaust air (or other LO-Cat emission streams) directly to the atmosphere.

d. With the exception of pilot-gas heat duties as described in Table 5.1-1 of this permit, the H-206 and H-207 thermal oxidizers shall not be operated in any other "*Planned*" continuous operating mode, unless: 1) the H-205 unit is out-of-service or fired on pilot gas only; and, 2) the LO-Cat sulfur removal process is also not operating simultaneously.

e. Only in-plant fuel gas and gas from V-221 that does not exceed 205 ppmv total sulfur content (calculated as H_2S at standard conditions) may be incinerated in the H-205, H-206, and H-207 units for any "*Planned*" operating modes. Examples of fuel from V-221 may include, Grace Unit permeate gases, LO-Cat Vacuum Flash gases, Seep Collection gases, VRU gas from the iron sponge, and any blend thereof.

f. Unplanned flaring is not permitted in any thermal oxidizer.

(iv) *BACT Operations.* The permittee shall apply emission control and design measures that represent Best Available Control Technology (BACT) for NO_x and ROC emissions to the operation of the modified odor abatement system (MOAS) utilizing the H-205 unit. BACT measures to control NO_x and ROC emissions from this unit must be in place and operational at all times for the life of the project. BACT for this project is defined in the BACT Requirements table below.

BACT REQUIREMENTS

Pollutant	**Control Technology**	**Emission Limit/Performance Standard**	**Verification / Recordkeeping Requirements**
ROC	LO-Cat oxidizer exhaust captured and incinerated in H-205 whenever the LO-Cat unit is operating. Burner equipped with automatic ignition system, forced air blower, temperature monitoring, and temperature controls.	ROC emissions not to exceed 0.09 lb/hr / ROC emission factor not to exceed 0.0027 lb/MMBtu, ROC and benzene reduced by a minimum of 98.5 percent by mass across the thermal oxidizer.	1) Annual Source testing. 2) Combustion chamber set point temperature equal to or greater than the set point temperature during the last compliant source test. 3) Combustion chamber set point temperature at least 1400 °F. 4) Actual temperature not differing from the set point temperature by more than five (5) percent for any continuous period exceeding ten (10) minutes.
NO_x and CO	Low-NO_x burner design. Burner equipped with automatic ignition system, forced air blower, temperature monitoring, and temperature controls.	NO_x emissions not to exceed 1.40 lb/hr, CO emissions not to exceed 3.50 lb/hr NO_x emission factor not to exceed 0.040 lb/MMBtu, CO emission factor not to exceed 0.100 lb/MMBtu	1) Annual Source testing. 2) Combustion chamber set point temperatures equal to or greater than the set point temperatures during the last compliant source test. 3) Actual temperatures not differing from the set point temperatures by more than five (5) percent for any continuous period exceeding ten (10) minutes.

(vi) *Flare Gas Sulfur Limit.* The total sulfur content (calculated as H_2S at standard conditions, 60° F and 14.7 psia) of any gas combusted in each of the thermal oxidizers shall not exceed 205 ppmv.

(c) Monitoring: The following monitoring conditions shall apply:

(i) *Source Testing.* The permittee shall conduct stack emissions compliance source testing of the air emissions and process parameters listed in Table 9-4 below annually, or upon written request from District. The permittee shall submit a written source test plan to the District 30 days prior to the source test date. The anniversary source test date shall be January 1st or other date approved by the District. The source test plan shall be prepared consistent with the District's *"Source Test Procedures Manual"* (revised May 24, 1990 and updates thereof). The permittee shall obtain written District approval of the source test plan prior to 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.

Table 9-4. H-205 Source Test Requirements

Device & Test Point	Pollutant or Parameter	Emission Limits or Parameter Units	Test Method [(d)]
H-205 Thermal Oxidizer Stack	ROC	Raw ppmvd; lb/hr; ROC DRE [(a)]	EPA: M-18 [(c)], M-2 or M-19[(e)]
	Benzene	Raw ppmvd; lb/hr; Benzene DRE [(b)]	EPA: M-18 [(c)], M-2
	NOx, raw O_2	lb/MMBtu @ higher heating value; lb/hr	CARB: M-100
	CO, raw O_2	lb/MMBtu @ higher heating value; lb/hr	CARB: M-100
	Oxidizer Fuel, CO_2	Flow Rate (SCFH); ROC Content; Benzene Content	Calibrated Fuel Meter; EPA: M-25, M-18
	Stack Flow Rate	SCFH	EPA: M-2 or M-19
H-205 Thermal Oxidizer Inlet Air	ROC	Raw ppmvd, lb/hr	EPA: M-18 [(c)], plant flowmeter
	Benzene	Raw ppmvd, lb/hr	EPA: M-18 [(c)], plant flowmeter

Table Notes:

(a) ROC DRE = (lb/hr ROC $_{in}$ - lb/hr ROC $_{out}$)/(lb/hr ROC $_{in}$) * 100%
(b) Benzene DRE = (lb/hr Benzene $_{in}$ - lb/hr Benzene $_{out}$)/(lb/hr Benzene $_{in}$) * 100%
(c) The M-18 analysis shall consist of three sequential bag samples, each drawn over a twenty-minute period simultaneously on the inlet and outlet of H-205. For ROC, analysis of the C_1 to C_6+, and benzene shall be done by gas chromatography. CO_2 analysis shall be based on the updated 'Process Stream Sampling Plan' (see Condition 9.C.15) and any subsequent District-approved updates.
(d) Alternate test methods may be accepted by the District on a case-by-case basis.
(e) If M-19 (F-factor) is used to derive stack flow rate, then higher heating value and flow rate of each gas stream) into H-205 shall be measured.

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 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.

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. All District costs associated with the review and approval of all plans and reports and the witnessing of tests shall be recovered in accordance with the provisions of Rule 210. The District may extend any of the timelines listed above for good cause upon written request from at least three days prior to the due date.

(ii) *Flare Gas Flow Metering.* Each thermal oxidizer shall be equipped with a flare gas flow meter (see Figure 4.2) to measure hourly flow volumes of (a) flare gases (Reference: # FR-080) and (b) in-plant fuel gas (Reference: # FR-081). The permittee shall record any and all flare events in accordance with District Rule 359.G requirements. The flare gas flow metering system shall be designed such that the hourly and daily flow rate of 'flare gas' to each oxidizer, and in-plant fuel gas to H-205 can be measured. The permittee shall categorize each 'flow to the oxidizer' event into one of the following categories: "Planned" (includes "Planned – Pilot Gas" and "Planned – Continuous" and "Planned - Intermittent") and "Unplanned".

All meters shall be calibrated for fuel specific gravity (sp. gravity of air = 1.0), delivery pressure and temperature, as well as in accordance with the manufacturer's specifications every six calendar months, not to exceed seven months between calibrations. All meters shall be capable of measuring instantaneous fuel consumption in units of MSCF/day, and be installed and maintained in accordance with ANSI/API 2530 and provide and overall accuracy of ±5 percent. The clock speed for any circular-chart fuel measurement hardcopy recording device shall be set to no more than 24 hours for one chart cycle. The H-205 unit's flow metering system shall be able to measure, during its continuous operations between the equivalent of 5.0 and 40.0 MMBtu/hr, a gas flow rate that is within 10 to 90 percent of the meter's full scale reading.

The volumetric flow of LO-Cat Oxidizer exhaust airflow delivered to the H-205 unit, traceable to any hour of operation of the LO-Cat Oxidizer, shall be metered separately. The permittee shall comply with the District-approved *Flare Volume Minimization and Monitoring Plan* (see Condition 9.C.15) and any subsequent District-approved updates.

(iii) *Flare Gas Sampling.* The higher heating values (HHV) of the first stage permeate (Reference: FR-567), and the in-plant fuel gas (Reference: FR- 081) delivered to the H-205, H-206 and H-207 flare systems (i.e., pilot gas, planned flare events, and unplanned flare events) shall be analyzed and recorded separately on a calendar weekly basis. The weekly HHV analyses requirement may be waived for any calendar week during which all three thermal oxidizers, including pilots, are completely shutdown and not operating. In addition, the weekly analyses requirement may be reduced to a monthly requirement, solely at the discretion of the District, if it can be demonstrated that the weekly HHV values obtained do not vary by: (a) more than 5 percent from each other during each month, and (b) 10 percent from each other, at a maximum, during the last six months. The heating value obtained shall also be computationally adjusted to reflect a heating value (Btu/scf) minus the CO_2 content as described in the *Flare Gas Monitoring Plan.*

(iv) *Planned Continuous Flare Gas Sulfur Content.* LO-Cat exhaust shall be monitored for hydrogen sulfide on a semi-annual basis by taking measurements using colorimetric gas detection tubes. The permittee shall add the most recent analysis results for the non-H_2S fraction of total sulfur compounds to derive the total sulfur content.

(v) *Intermittent Flare Event Sulfur Content* - The sulfur content of flare gas during all intermittent flaring events (either planned or emergency events) shall be continuously monitored for hydrogen sulfide at V-221 with an H_2S monitor and permanent recording device, per its "Continuous Flare Gas H_2S Monitoring Plan" (see Condition 9.C.15) and any subsequent District-approved updates. The permittee shall add the most recent analysis results for the non-H_2S fraction of total sulfur compounds to derive the total sulfur content.

(vi) *Total Sulfur Content.* The total sulfur content of gas combusted during flaring events and for pilot and LO-Cat Oxidizer Exhaust gas, shall be measured on a semi-annual basis using District-approved ASTM methods. The purpose of these semi-annual analyses is to determine the non-H_2S fraction of total sulfur compounds present these gases and to use these values to correct the hydrogen sulfide values measured using sulfur detection tubes. The permittee shall take the results of the testing and add it to the hydrogen sulfide test results for the subsequent 6-months to obtain an estimate of the total sulfur content of these gases. The permittee shall submit the lab analyses reports to the District with the Compliance Verification Reports.

(vii) *Process Parameter Monitoring and Alarm System Operations.* The permittee shall operate and properly maintain all the process monitors and alarms listed in Table 9-5 below, and for the VRU low pressure monitor and alarm listed in the Table in permit condition D.19.

Table 9-5. Thermal Oxidizer Process Parameter Monitoring/Alarm Requirements

Equipment Item & Parameter	Monitored Units	Monitoring Method	Recording Method
THERMAL OXIDIZERS			
A. H-205 Combustion Chamber			
1. Temperature Controller Set point	ºF	PLC/LED	Log Daily
2. Actual Temp.	ºF	TC	Circular Chart [(a)]
3. Low Temp. Alarm	1400 ºF	TC/Audible Alarm to alert aberrant condition	See "Actual Temp" Circular Chart specified above.
B. H-205/206/207			
1. Fuel Flows (205/206)	SCFD	Calibrated Flow Meter	Circular Chart [(a)]
2. Fuel Flow (207)	SCFD	Calibrated Flow Meter [(b)]	Circular Chart [(a)]
3. H_2S Concentration	H2S ppmv	Continuous	Circular Chart[(a)]
LO-CAT OXIDIZER EXHAUST TO H-205 (DELIVERY LINE & SPENCER BLOWER)			
A. Blower Inlet (Suction) Pressure	Alarm Low @ -1.0 psig	PT/Audible Alarm	Circular Chart [(a)]
B. LO-Cat Exhaust Flow	SCFD	Calibrated Flow Meter	Circular Chart [(a)]
LO-CAT SULFUR REMOVAL UNIT			
A. Regeneration Air Blower Flows (Tanks 1902 & 1903)	Relative Flow Indicator	Annubar "Delta P" Indicators	Circular Chart [(a)]

Table Notes:

TC = Thermocouple
PLC = Programmable Logic Controller/Light emitting diode display panel value (or equivalent)
PT = Pressure Transducer
N/A = Not Applicable
(a) = Or, equivalent District approved permanent recording method.
(b) = New flow meter requirement for this device per ATC 9473-03.

(viii) *Flare Gas CO_2 Content.* The CO_2 content of gas combusted during flaring events shall be measured on a weekly basis using District-approved methods. The permittee shall implement the District-approved *Process Stream Sampling Plan* (See also Section 4.11 and Permit Condition 9.C.15) and any subsequent District-approved updates. The Plan addresses the sampling locations, the sampling mechanism, and the collection and analysis methods for the CO_2 content and the HHV of the process stream to the thermal oxidizers. The weekly analyses are required to determine the CO_2 fraction present in these gases and to use these values to correct (a) the volume flow to the thermal oxidizers on a non-CO_2 basis, and (b) to assess the heating value of these gases on a non-CO_2 basis. The permittee shall use the results of the analysis to report (a) the non-CO_2 volume flow to the thermal oxidizers on hourly, daily and annual basis, and (b) the actual heat input to the thermal oxidizers on hourly, daily and annual basis. The permittee shall submit the lab analyses reports to the District with the Compliance Verification Reports.

The District may, at its discretion, require the permittee to install automated CO_2 samplers or require more frequent sampling, if the CO_2 levels in any three of the samples obtained during any 6-month period fluctuate by more than 10 percent from the average value during that period. In addition, any sample obtained during source testing and showing a significant (i.e., beyond 20 percent) deviation in the CO_2 level from the average during this period shall trigger a detailed review and more frequent sampling, if necessary. If required, the permittee shall submit an 'automated sampler' Sampling Plan update for District approval within 30 days of written notification from the District. Such automated sampling shall be implemented no later than six (6) months after District notification. The *Process Monitor Calibration and Maintenance Plan* shall also be updated to include the calibration and maintenance schedule for any automated CO_2 sampler required by the District. Such an update shall be provided to the District no later than six (6) months after the District notification for the sampler.

(ix) *Inlet Gas CO_2 Content.* The CO_2 content of gas incoming to the EOF from Platform Holly and the Seep Device shall be measured on a monthly basis using a District-approved method. This method is based on the District-approved *Process Stream Sampling Plan* (see Condition 9.C.15). The Plan (see also Section 4.11) includes listing of the sampling locations, the sampling mechanism, and the collection and analysis methods for the CO_2 content of the incoming streams to the EOF. The purpose of the monthly analyses is (a) to determine the CO_2 fraction present in these gases, and (b) to ensure the CO_2 content of the incoming streams does not exceed the permitted limit on a monthly basis.

(d) Recordkeeping: The records required below shall be maintained by the permittee for a minimum period of five (5) calendar years and shall be made available to the District personnel upon request:

(i) *Flare Event Volumes.* All flaring events shall be recorded in a District-approved flare log. The log shall include: date; the thermal oxidizer used (H-205, H-206, H-207); duration of flaring events (start and stop times); quantity of gas flared in units of standard cubic feet; cumulative total volume flared for all events to date through the year (by category); the H_2S content of the gas flared; reason/cause for the flaring event; whether there were visible emissions; and, the type of event (e.g., planned continuous, planned intermittent or unplanned intermittent). This log shall include all unplanned and planned flaring events.

(ii) *Pilot Volume.* The volume (standard cubic feet) of pilot gas consumed each day and month by H-206 and H-207 shall be recorded in a District-approved log.

(iii) *Flare Event Heat Input*. The heat input (Btu/hr, Btu/day, and Btu/year) to each thermal oxidizer based on the flow volume and higher heating value of the flare gas shall be recorded in a District-approved log.

(iv) *LO-Cat Oxidizer Exhaust Gas Volumes.* The volume (standard cubic feet) of LO-Cat Oxidizer Exhaust gases consumed each day and each month shall be recorded in a District-approved log.

(v) *Flare Gas Heating Values.* The weekly heating value lab analysis results for the gases combusted in the thermal oxidizers shall be recorded. Include copies of the lab's analysis sheets, as obtained separately for the streams at FR-081, FR-563, and FR-567; and the computed higher heating value of the gas at FR-080. The permittee shall record (a) the HHV of the samples obtained and (b) the HHV of the non-CO_2 constituents of the samples (Refer to the *Flare Gas Monitoring Plan* for methodology details).

(vi) *Sulfur Content of Continuous Flare Gas Streams.* The daily colorimetric gas detection tube readings from continuous streams (e.g., pilot, Grace Permeate gas), and semi-annually measured sulfur content data for the LO-Cat exhaust stream shall be recorded in a District-approved log.

(vii) *Sulfur Content of Intermittent Flaring Events.* The data (ppmv H_2S) from the continuous H_2S monitoring system at V-221 unit shall be recorded in a District-approved log.

(viii) *Total Sulfur Content Analyses.* The results of the semi-annual analyses for the H_2S and total sulfur content of gas combusted during flaring events and pilot and LO-Cat Oxidizer Exhaust gas, and the calculation of the non-H_2S fraction of the total sulfur compounds that is used to correct the sulfur detection tube and continuous H_2S monitor readings to estimate the total sulfur content of these gases for the subsequent year shall be recorded. Include copies of the lab's analysis sheets.

(ix) *CO_2 Content of Flare Gases.* The permittee shall log (a) All monthly-obtained CO_2 content data for gases incoming to the EOF from Platform Holly and the Seep device and (b) all weekly-obtained data for CO_2 and HHV of the flare gases to the thermal oxidizers for the purpose of demonstrating compliance with the flare gas volume and flare gas the heat input limits.

(x) A log of all Breakdown Reports and Deviation Reports filed with the District for any equipment described by this permit. This log shall document the information required by District Rule 505.

(xi) Results of all source testing for the thermal oxidizers for the reporting period shall be recorded.

(xii) Maintenance and calibration records of all flow metering, process controllers and process alarms required by this permit.

(e) Reporting: On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the District. The report must list all data required by the *Semi-Annual Compliance Verification Reports* condition of this permit.
[*Reference: District Rules 359 and 1303, ATC 9473-05, ATC 9473-06, ATC/PTO's 10941 and 11169, and 40 CFR 70.6.(c)*]

C.3 **Fugitive Hydrocarbon Emissions Components.** The following permitted equipment is included in this emissions unit category:

District ID No.	Equipment No.	Equipment
		Gas/Light Liquid Service Components and associated leak paths
000297	N/A	Valves: Accessible – *component leak path*
000310	N/A	Valves: Inaccessible – *component leak path*
009118	N/A	Valves: Unsafe – *component leak path*
000300	N/A	Connections: Accessible – *component leak path*
000312	N/A	Connections: Inaccessible – *component leak path*
009120	N/A	Connections: Unsafe – *component leak path*
009122	N/A	Pressure Relief Valves: Accessible – *component leak path*
009123	N/A	Pressure Relief Valves: Inaccessible – *component leak path*
107363	N/A	Pressure Relief Valves: Unsafe – *component leak path*
009121	N/A	Compressor Seals: -- *component leak path*
009125	N/A	Pump Seals: -- *component leak path*
		Oil Service Components and associated leak paths
000298	N/A	Valves: Accessible – *component leak path*
000301	N/A	Connections: Accessible – *component leak path*
107364	N/A	Connections: Unsafe – *component leak path*
009127	N/A	Pressure Relief Valves: Accessible – *component leak path*
009128	N/A	Pump Seals; -- *component leak path*

(a) Emission Limits: Mass emissions from the gas/light liquid service and oil service components listed above shall not exceed the limits listed in Table 5.1-3 and Table 5.1-4.

(b) Operational Limits: Operation of the equipment listed in this section shall conform to the requirements listed in Sections D and E of District Rule 331 and NSPS Subpart KKK. Compliance with these limits shall be assessed through the monitoring, recordkeeping and reporting conditions in this permit. In addition, the permittee shall meet the following requirements.

(i) *I&M Program.* The District-approved I&M Plan (see Condition 9.C.15) and any subsequent District-approved updates for the EOF 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.

(ii) *Leak-Path Count*. Component and leak-path count inventory updates provided by the permittee shall not exceed the District approved totals 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. (Note: 'de minimis' component-leak-path count is not included in Table 5.1-1.)

(iii) *Venting.* All routine venting of hydrocarbons shall be routed to either the VRU compressor, flare header or other District-approved control device.

(iv) *VRU Use.* The VRU and gas collection (GC) systems at the EOF shall be in operation when equipment connected to these systems is in use. These systems include piping, valves, and flanges associated with the VRU & GC systems. The VRU & GC systems shall be maintained and operated to minimize the release of emissions from all systems, including pressure relief valves and gauge hatches.

(v) *Emission Reduction Credits.* The emission reductions documented in this permit are for the use as offsets by The Point Arguello Companies to meet the requirements under Permit to Operate 5704 (version 27 March 1996 or subsequent updates to that permit). Emission reduction measures implemented to create the required emission reductions shall be in place and maintained for the life of the Gaviota project. This permit does not authorize the dedication of these emission reductions to any other project without prior written approval by the District. The District will assess any such proposal in accordance with applicable District rules and regulations in effect at the time an application is determined to be complete by the District.

(vi) *ERC Inspection & Maintenance (I&M) Program.* The permittee shall implement the ERC fugitive hydrocarbon inspection and maintenance program at the EOF. The inspection and maintenance program shall be consistent with District Rule 331 (Fugitive Emissions Inspection and Maintenance). However, the permittee shall also comply with other specified recordkeeping and reporting requirements as outlined in the *Fugitive Hydrocarbon Inspection and Maintenance Program Plan* as approved by the District and any subsequent District-approved updates.

(vii) *Category E Requirements*. Component-leakpaths monitored monthly at less than 100 ppmv shall achieve a mass emission control efficiency of 88 percent. Category E component-leakpaths are defined as component-leakpaths subject to enhanced fugitive inspection and maintenance programs for which screening values are also maintained at or below 100 ppmv as methane, monitored per EPA Reference Method 21. For Category E components, screening values above 100 ppmv shall trigger the Rule 331 repair process per the minor leak schedule. These component-leakpaths shall be identified in the Fugitive I&M Plan and on the fugitive I&M inventory.

(viii) *Reimbursement of Costs.* All costs reasonably incurred by the District, including District consultants and Legal Counsel (but not attorney's fees in litigation) related to the implementation and enforcement of the ERC I&M Program shall be reimbursed by the permittee within thirty (30) calendar days of invoicing by the District. If, for any reason, the District is unable to obtain full reimbursement for all costs incurred, the District may revoke or suspend this permit until such a time that a complete application (including the payment of all outstanding invoices) for the reinstatement of the permit is received by the District.

(c) Monitoring: The equipment listed in this section is subject to all the monitoring requirements listed in 40 CFR Part 60, Subpart KKK and District Rule 331.F. The test methods in Subpart KKK and Rule 331.H shall be used, when applicable. In addition, the permittee shall track the 'component-leak-path' (clp) counts for all categories of components at the EOF that are listed in the condition 9.C.3 table above and, log any 'clp' count changes, including de minimis changes, in a component-leak-path inventory maintained for the facility.

(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 40 CFR Part 60 Subpart KKK and District Rule 331.G and the District-approved I&M Plan (see Condition 9.C.15) and any subsequent updates. The permittee shall also do the following:

(i) *I&M Log* - The permittee shall record in a log the following:

- a record of leaking components found (including name, location, type of component, date of leak detection, the ppmv or drop-per-minute reading, date of repair attempts, method of detection, date of re-inspection and ppmv or drop-per-minute reading following repair);
- a record of the total components inspected and the total number and percentage found leaking by component type;
- a record of leaks from critical components;
- a record of leaks from components that incur five repair actions within a continuous 12-month period;
- a record of component repair actions-including dates of component re-inspections; and,
- A table showing clearly all changes in the 'clp' counts from the count shown in the condition 9.C.3 table above, for all categories of components including the 'de minimis' components at the facility.

(ii) The permittee shall also maintain, on a quarterly basis, adequate records to verify that the 141.51 tons/yr ROC emission reductions required under this permit to provide adequate credits to the Pt. Arguello Project are actually being attained and comply with the District Rules and Regulations. These records shall include all information required under the District-approved I&M Plan and any subsequent District-approved updates.

(e) Reporting: On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the District. The report must list all data required by the Compliance Verification Reports condition of this permit.
[*Re: ATC 7234, ATC 9323, ATC 10022, 40 CFR 70.6(a)(3), Subpart KKK, District Rule 331*]

C.4 **Crude Oil Storage Tanks.** The following equipment is included in this emissions category:

District ID No.	Equipment ID No.	Name
000283	T-202	Oil Shipping Tank T-202 - 2,000 barrel (D, 30-foot by H, 16-foot)
006477	T-203	Oil Surge Tank T-203 - 2,000 barrel (D, 30-foot by H, 16-foot)
000284	T-204	Reject Oil Tank T-204 - 2,000 barrel (D, 30-foot by H, 16-foot)

(a) Emission Limits: District-enforceable limits for the crude oil tanks are listed in Section 9.D.

(b) Operational Limits: Federally-enforceable operational limits for these equipment items are as follows:

(i) *Oil Tank ROC Emissions Control*. The vapor recovery (VR) system shall be connected to each tank that stores, holds, or places petroleum products and operated during production, processing, or storage. The VR system shall meet the requirements of Rule 325. The VR system includes all associated piping, valves, and flanges. The VR system shall be maintained leak-free and operated properly.

(ii) *Degassing/Purging of Tanks Containing Sulfur Compounds.* The stationary tanks/vessels listed above are used to store organic liquids containing odorous sulfur compounds; hence, these vessels shall be purged or degassed in a manner consistent with District Rules 343 and the District-approved *Degassing Plan.* (See Condition 9.C.15) and any subsequent updates.

(c) Monitoring: Monitoring requirements for the equipment listed above are:

(i) *Crude Oil Emulsion Volume.* The volume of crude oil emulsion (in units of barrels) received by EOF shall be measured by using a calibrated flow meter or multiple meters, as specified in the Crude Oil Emulsion Metering Plan included in the *Process Monitor Calibration & Maintenance Plan* (see Condition 9.C.15). A copy of the latest calibration results for the flow meter(s) shall be kept at the EOF and made available to the District staff upon request.

(ii) *Operating Days.* The number of days that oil emulsion was processed at the EOF shall be logged.

(iii) *Crude Oil Analysis.* On an annual basis, the API gravity and true vapor pressure (TVP) at the maximum expected temperature of the crude oil from and active flowline to the initial tank or from the tank, provided that there is an active flow of crude oil into the tank shall be measured and recorded per Rule 325.G.2.

(iv) *Diluent Use.* The total volume of diluents added to the oil shall be logged using calibrated flow meters (in units of barrels). For each type of diluent used, log the volume used and the type and physical properties (TVP, API gravity) of each diluent.

(v) *Degassing.* For all degassing events subject to District Rule 343, monitor the volume purged, characteristics of the vapor purged and document the control device/method used.

(vi) *Tank Roofs.* Each tank roof, including its closures and seals, shall be completely inspected whenever the tank is emptied for non-operational reasons or at least every five years, whichever is earlier, and prompt corrective action taken to repair any items found to be in disrepair.

(d) Recordkeeping: The records required below shall be maintained by the permittee for a minimum period of five (5) calendar years and shall be made available to the District personnel upon request.

(i) *Crude Oil Emulsion Volume.* The volume of crude oil emulsion (wet) received at EOF each month and the number of days during that month that emulsion was received (in units of barrels).

(ii) *Crude Oil Analysis.* The API gravity, the true vapor pressure (TVP) of the crude oil and the sample temperature of the TVP analysis.

(iii) *Diluent Use.* The total volume of diluents added to the oil each month (in units of barrels). Record the volume used each month and the type and physical properties (TVP, API gravity) of each type of diluent used.

(iv) *Degassing.* For all degassing events subject to District Rule 343, monitor the volume purged, characteristics of the vapor purged and document the control device/method used.

(v) *Tank Roofs.* Each tank roof, including its closures and seals, shall be completely inspected whenever the tank is emptied for non-operational reasons or at least every five years, whichever is earlier. Records shall be maintained indicating each date that the tank was empty, and the results of the nature of the inspection made, and the results of the inspection.

(vi) The following records required to be maintained per District Rules 325 and 343, Section F (Recordkeeping):

a. The type of liquid in each tank
b. The maximum vapor pressure of the tank content under normal conditions
c. The date and the tanks degassed

(e) Reporting: On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the District. The report must list all data required by the *Semi-Annual Compliance Verification Reports* condition of this permit.

[*Re: District Rule 325, District Rule 343, ATC 10022, ATC 1196 (NSR-01196), 40CFR 70.6.(a)(3)*]

C.5 **Pigging Equipment.** The following equipment is included in this emissions category:

District ID No.	Equipment ID No.	Name, Equipment Description
009200	N/A	Oil Pig Receiver, interfacing Holly
111633	N/A	Utility Pig Receiver, interfacing Holly
111634	N/A	Gas Pig Receiver, interfacing Holly
009337	N/A	Gas Launcher, interfacing Seep

(a) Emission Limits: The mass emissions for the pig receivers and launcher shall not exceed the limits in Table 5.1-3 and Table 5.1-4. Compliance with this condition shall be based on the operational, monitoring, recordkeeping and reporting conditions in this permit.

(b) Operational Limits: Operation of the equipment listed in this section shall conform to the requirements listed in District Rule 325.E. Compliance with these limits shall be assessed through the monitoring, recordkeeping and reporting conditions in this permit. In addition, the following requirements apply:

(i) *Pressure.* The pig receivers/launcher shall be depressurized to the VRU via the EOF closed drain system prior to each hatch opening to the maximum extent feasible. The pig launcher hatch shall not be opened when the pressure in the launcher is greater than 1 psig. Compliance shall be based on a pressure gauge or equivalent District-approved monitor installed to monitor the internal pressure of the receiver/launcher.

(ii) *Openings.* Access openings to the pig receiver/launcher shall be kept closed at all times, except when a pipeline pig is being placed into or removed from the launcher, or during active maintenance operations. Prior to opening the pig receiver/launcher, the vessel shall be purged with sweet in-plant fuel gas (not to exceed 4 ppm H_2S and 80 ppmv total sulfur content calculated as H_2S at standard conditions), nitrogen or water.

(iii) *Events.* The number of emulsion and gas pig operations (events) shall not exceed the maximum number listed in Table 5.1-1.

Other District-enforceable limits for these items are listed in Section 9.D.

(c) Monitoring: The permittee shall monitor the pressure inside the pig receiver/launchers with a District-approved pressure gauge or equivalent District-approved device.

(d) Recordkeeping: The permittee shall keep a log for each pig receiver and launcher listing the number of pigging events per day, quarter and year. The permittee shall also record in the same logs the name of the pig receiver/launcher used, the date of the pigging operation, the pressure inside the receiver/launcher prior to each opening and the dates of carbon canister change out.

(e) Reporting: On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the District. The report must list all data required by the *Compliance Verification Reports* conditions of this permit.
[*Re: District Rules 325 and 1303, ATC/PTO 11106, 40 CFR 70.6*]

C.6 **Wastewater Tanks, Sumps.** The following equipment is included in this emissions category:

District ID No.	Equipment ID No.	Name
009327	S-202	Sump Tank, S-202; 80 bbl., (D, 6.5-foot by L, 14-foot)
006478	TK-201	Wash Tank, TK-201; 3000 bbl.,(D, 30-foot by H, 24-foot)
009330	S-203	Oil Sump, S-203; 95 bbl.

(a) Emission Limits: No federally-enforceable emission limits exist for these equipment items. District-enforceable limits for these items are listed in Section 9.D.

(b) Operational Limits: All process operations from the equipment listed in this section shall meet the requirements of Sections D and E of District Rules 325 and 343, as applicable to the equipment. The tanks listed above shall be connected to vapor collection and removal device(s) prior to their operation, and the vapor removal efficiencies shall be no less than 90 percent. Compliance with these limits shall be assessed through the monitoring, recordkeeping and reporting conditions in this permit. To comply with Rule 343.D, the permittee shall use a control device, approved in advance by the District, when degassing or purging any stationary tanks, vessels, or containers that process odorous sulfur compounds.

(c) Monitoring: The equipment listed in this section is subject to all the monitoring requirements of District Rule 325.H. The test methods outlined in District Rule 325.G shall be used, when applicable. The permittee shall perform the following compliance monitoring:

(i) *Physical Data.* On an annual basis, the API gravity and true vapor pressure (TVP) at the maximum expected temperature of the product from an active flowline to the initial tank or from the tank, provided that there is an active flow of crude oil into the tank, shall be measured and recorded per Rule 325.G.2.b and c, using ASTM D 323-5B and API Bulletin 2519 (or an equivalent District-approved method).

(ii) *Degassing.* For all degassing events subject to Rule 343, monitor the event consistent with the requirements of Rule 343 and the District approved degassing plan (see Condition 9.C.15)

(iii) *Tank-201.* Each aboveground tank roof, including its closures and seals, shall be completely inspected whenever the tank is emptied for non-operational reasons or at least every five years, whichever is earlier.

(d) Recordkeeping: The records required below shall be maintained by the permittee for a minimum period of five (5) calendar years and shall be made available to the District personnel upon request. The equipment listed in this section is subject to all the recordkeeping requirements listed in Section F of District Rules 325 and 343. In addition, the following shall be recorded:

(i) *Physical Data* - On an annual basis, the API gravity, true vapor pressure (TVP), and the TVP sample temperature.

(ii) *Degassing* - For all degassing events subject to Rule 343, the volume purged, the physical properties of the vapor and characteristics of the vapor purged, and the control device/method used.

(iii) *Tanks* - The detailed results of all above ground tank roof inspections.

(iv) *Tank Data* - The following data is required to be obtained per District Rules 325 and 343, Section F (Recordkeeping):

a. The type of liquid in each tank
b. The maximum vapor pressure of the tank content under normal conditions
c. The date and the tanks degassed

(e) Reporting: The equipment units listed in this section are subject to all the reporting requirements listed in District Rules 325 and 343. On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the District. The report must list all data required by the *Compliance Verification Reports* condition of this permit.
[*Reference: District Rule 325, District Rule 343.F, 40 CFR 70.6.(a)(3), District Rule 1303.D*]

C.7 **Produced Gas Sweetening and Sulfur Recovery (LO-Cat) unit.** The following equipment is included in this emissions category:

District ID No.	Equipment ID No.	Name
009345	F-2201/2202/2203	Gas Filters, three (3)
009346	V-1201/1202	Two (2) separation drums, each drum equipped with four gas/(LO-Cat) solution eductors for sweetening the gas
009347	J-1101-J-1108	Eight (8) gas/(LO-Cat) solution eductors
009348	V-1203	Water Wash drum
009349	V-1206	One (1) flash drum
009350	V-1207	One (1) knockout drum
009351	T-1901	2,750 bbl Reaction (stand-by holding)Tank; 29.75' dia x 22.3' ht.
009355	M-2404/2405/ 2407/2408	Agitators (4) for the holding tank; each with a 15 hp motor
009448	T-1902/1903	Two (2) oxidizer tanks (sulfur recovery unit) each with an air blower
009352	BL-1801/1802	Two (2) Air blowers, each with a 300 hp electric motor
106343	E-1701 A/B	Cooling Tower, equipped with two 5 hp electric fans (E-1701 A/B) -- *out-of-service*

(a) Emission Limits: No federally-enforceable mass emission limits exist for this equipment.

(b) Operational Limits:

(i) No more than 9.8 long tons of sulfur shall be produced by the LO-Cat unit in any one day.

(ii) The LO-Cat sulfur removal process shall be controlled by the VRU at all times.

(iii) The LO-Cat sulfur removal process shall not process sour gas feedstock unless the H-205 thermal oxidizer and the LO-Cat VRU (*referred to as MOAS in Section 1.4*) are operating to fully incinerate all LO-Cat Oxidizer exhaust.

(iv) Lo-Cat fugitive components shall be maintained in a leak-free condition. A leak is defined as total hydrocarbon (THC) emissions exceeding 500 ppmv when measured using an Organic Vapor Analyzer (OVA) calibrated to methane. Any leaks shall not be a violation of this permit as long as the leak thresholds of Table 1 of Rule 331 are not exceeded and all leaks are repaired according to the timelines of Rule 331. Leaks between 500 and 1,000 ppmv shall be repaired according to the timeline for minor gas leaks in Rule 331.

(v) Rule 331 requirements for all fugitive components associated with the Lo-Cat unit shall apply.

(vi) The permittee shall not produce acid gas.

(c) Monitoring: The following monitoring requirements shall apply:

(i) The daily mass of sulfur produced.

(ii) To ensure LO-Cat exhaust is not vented to the atmosphere due to leaks in the equipment, the following requirements shall apply:

1. All LO-Cat Oxidation exhaust system vessels, piping, and the Spencer blower to the H-205 thermal oxidizer, shall be inspected for leaks within one hour of a LO-Cat system startup (planned) and once per quarter while the LO-Cat system is in operation.
2. Similar inspections shall be conducted for pipes and blowers for all unplanned shutdowns involving the Spencer blower and the LO-Cat system, unless the permittee's leak inspection staff is absent from the facility. In such 'staff absent' situations, the District project manager shall be notified during normal business hours by telephone within 15 minutes of such shutdown.

(d) Recordkeeping: The records required below shall be maintained by the permittee for a minimum period of five (5) calendar years and shall be made available to the District personnel upon request.

(i) For the life of the facility, an analysis demonstrating that the facility's design capacity is less than two long tons/day of H_2S, expressed as sulfur, in the acid gas.

(ii) Daily quantity of sulfur produced.

(iii) Records demonstrating that the facility does not produce acid gas.

(iv) P&ID's associated with the Produced Gas Sweetening Unit and Sulfur Recovery (LO-Cat) Unit shall be kept on file at EOF and made available to the District upon request. Any modifications pertaining to acid gas production will require an ATC/PTO modification to this permit.

(v) A list of the leak-path components associated with the LO-Cat exhaust system to the H-205 thermal oxidizer.

(vi) A log indicating the results of each leak inspection, and records of both shutdown and routine leak inspections consistent with Rule 331, Section G.

(e) Reporting: On a semi-annual basis, a report detailing the previous six-month's activities shall be provided to the District. The report must list all data required by the *Compliance Verification Reports* condition of this permit
[*Re: Subpart LLL, 40 CFR 60.640, ATC 9473-05*]

C.8 **Grace Membrane Unit.** The following equipment is included in this emission category:

District ID No.	Equipment ID No.	Name
009399	Bank A	Permeate Tubes – first stage skid – Bank A
106340	Bank C	Permeate Tubes – first stage skid – Bank C
106099	Bank B	Permeate Tubes – first stage skid – Bank B
009492	F-201	Filter Separator
009398	F-210	Guard Bed
009397	F-211	Polishing Filter

(a) Operational Limits: The following operational limits shall apply:

(i) *Process Volumes* - The Grace Membrane Unit shall not treat more than 13 MMscf/day of gases for CO_2 separation. Any volume of gas recycled through the Grace Unit will not count toward this limit. (Re: ATC 10941)

Permeate Gas Output - The combined heat content of "permeate gas" supplied to: (a) Process Heater Unit H-204, plus (b) Relief Header for Relief Scrubber V-221, plus (c) In-plant Fuel Gas Header, shall not exceed 58 MMBtu/hr.

Note: The hourly permeate gas volume flows shall be obtained by adding up (A) flow to H-204 as obtained at FIT-732, plus (B) flow to V-221 as obtained from readings at FR-567 (see Block Flow Diagram in Figure 4.2). The heat content of the total flow shall be computed based on the HHV of weekly samples obtained at FR-567, or other locations approved by the District.

(ii) *Heater Operation* - If the process heater H-204 is in operation, its total heat input requirement shall be met by the modified Grace Membrane Unit output, to the extent feasible. Only after meeting the full demand of the H-204 unit shall any excess flare gas produced by the Grace Unit be sent to the thermal oxidizer units H-205/206/207. This condition will be enforced through appropriate monitoring and recordkeeping.

(b) Monitoring: The permittee shall monitor the following:

(i) The hourly volume flow rate (scf/hour) of the gas inflow to the First-stage skid, as recorded by FR-560;

(ii) The hourly volume flow rate (scf/hour) of: (a) First-stage permeate gas flow into H-204, as recorded by FIT-732 and (b) first-stage permeate gas flow to the Relief Header for Relief Scrubber, as recorded by FR-567;

(iii) The weekly high heating value of first stage permeate stream. The high heating value of this stream shall be determined by lab analyses of samples taken at FR-567. Sampling at FR-567 does not need to be conducted if the first stage tubes are not in use during the week.

(c) Recordkeeping: Data from all monitoring activities listed in Condition 9.C.9(b) above shall be recorded . These records shall be kept for a minimum of five (5) years. All sampling and analysis data/results shall be submitted to the District in accordance with Permit Condition (d) below.

Grace Unit Output Heating Value Records - The *weekly* heating value (Btu/scf) lab analysis results for the Grace Unit output shall be compiled. Include copies of the lab's analysis sheets, obtained separately for the gas streams per Condition 9.C.9.(b)(iii) and the computed MMBtu/hr value of the Grace Unit output, based on the weekly high heating value analyses and hourly gas flow volume records.

(d) Reporting: Submit the recordkeeping data recorded per Condition 9.C.9(c) with each Semi-Annual Compliance Verification Report required by this permit.

C.9 **Solvent/Coating Use.** The following equipment is included in this emissions unit category:

District ID No.	Name
106341	Solvents - Cleaning/Degreasing *(as part of regular operations)*
009521	Surface Coating *(includes solvents used as thinners)*

(a) Emission Limits: The solvent emission limits outlined in District Rule 317.B are federally enforceable for the entire stationary source.

(b) Operational Limits: Use of solvents for cleaning/degreasing and maintenance surface coating shall conform to the requirements of District Rules 317, 321, 322, 323.I and 324. Compliance

with these rules shall be assessed through compliance with the monitoring, recordkeeping and reporting conditions in this permit and facility inspections.

(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.

(iv) *Reclamation Plan* - The permittee 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. The permittee 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) Recordkeeping: The permittee shall record in a log the following on a monthly basis for each solvent and coating 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 readily accessible location at EOF.

(d) Reporting: On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the District. The report must list all data required by the *Semi-Annual Compliance Verification Reports* condition of this permit.
[*Re: District Rules 317, 321, 322, 323.I, 324, 1301 and 1303, 40 CFR 70.6*]

C.10 **CO_2 Content of EOF Inlet Gases.** For each month, the volume fraction of CO_2 in the mix of gases, from Platform Holly and the Seep Device, coming to the EOF for additional processing/use shall not exceed 20% of the entire incoming monthly gas volume. Results of the monthly laboratory analyses for CO_2 in the incoming gases and the monthly inlet volume flows from Holly and Seep Device shall be used to verify compliance with this condition.
[*Ref: ATC/PTO 10941]*

C.11 **Emergency Backup Electrical Generator.** The permittee shall use an emergency backup electrical generator to power the vapor recovery systems during time of power outages. [*Re: Rule 303, Abatement Order 99-6(A)*]

C.12 **Semi-Annual Monitoring/Compliance Verification Reports.** Twice a year, The permittee shall submit a compliance verification report to the District. A paper copy, as well as, a complete PDF electronic copy of these reports, shall be in a format approved by the District. Each report shall be used to verify compliance with 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. All logs and other basic source data not included in the report shall be 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 shall be included in the annual report or submitted electronically via the District website. The report shall include the following information:

(a) *External Combustion Equipment.*

(ii) Volume of PUC natural gas and the volume of permeate gas consumed and the corresponding heat inputs to the process heater for each day and cumulatively for the entire year in units of standard cubic feet and million BTUs, respectively. In addition, provide the combined heat input to the process heater for each day and cumulatively for the entire year in units of million BTUs.

(iii) The daily H_2S and semi-annual total sulfur analyses results. Copies of daily analysis sample results (e.g., photocopies of colorimetric gas detection tubes) and semi-annual lab analyses reports shall be maintained.

(iv) The monthly higher heat value lab analyses.

(v) Documentation showing how the gas flow and HHV data was used to determine the heat input to the process heater.

(vi) Documentation showing how the non-H_2S fractions of the semi-annual total sulfur analyses were determined and how these values were used to adjust the daily H_2S sampling results to ascertain daily total sulfur values.

(vii) Results of all compliance source testing performed.

(viii) Maintenance logs for the process heater, its emission control system and fuel flow meter; maintenance and calibration logs for each heater treater and its fuel flow meter.

(b) *Thermal Oxidizer Systems*.

(i) The daily volumes of gas combusted and resultant mass emissions for each flare category (i.e., *Pilot*; *Planned - Continuous*; *Planned - Intermittent*; *Unplanned*),

shall be presented individually for each thermal oxidizer, and then totaled (for each subcategory and for all three thermal oxidizers combined). This data will further be summarized for each calendar month, as well as for the entire reporting period. The final report for the year will provide the totalized annual volumes for these parameters as well. If the *Planned -Continuous* flaring volumes include gases other than the LO-Cat Oxidizer Exhaust flows, then provide additional classification of the volumes that comprise this category.

(ii) The heat input of gaseous fuel combusted by each thermal oxidizer shall be reported consistent with the recordkeeping requirements of this permit.

(iii) The results of the semi-annual analyses for the total sulfur content of the planned continuous flare gas streams (e.g., pilot, LO-Cat Oxidizer Exhaust gas, etc.) along with a calculation of the non-H_2S fraction of the total sulfur compounds that is used to correct the sulfur detection tube H_2S readings to estimate the total sulfur of these gases. Also, provide a copy of all lab analyses.

(iv) The semi-annual H_2S colorimetric gas detection tube readings for pilot and LO-Cat exhaust gases (corrected with the total sulfur values from the gas analysis).

(v) The average daily H_2S concentration and the highest H_2S concentration observed from the continuous H_2S monitor, corrected with the total sulfur values from the gas analysis for planned intermittent and unplanned intermittent flare events.

(vi) The weekly lab analysis results for the heating values and CO_2 content of the gases combusted in the thermal oxidizers, and the monthly obtained CO_2 content analysis of gases coming to the EOF from Platform Holly and the Seep Device. Include copies of the lab's analysis sheets.

(vii) A copy of the Breakdown Reports and Deviation Reports Log filed with the District for any equipment described by this permit. This log shall document the information required by District Rule 505.

(viii) A copy of Flare Event Log for the reporting period.

(c) *Fugitive Hydrocarbons.* Rule 331/Enhanced Monitoring Fugitive Hydrocarbon I&M program data (on a quarterly basis):

(i) Inspection summary.

(ii) Record of leaking components.

(iii) Record of leaks from critical components.

(iv) Record of leaks from components that incur five repair actions within a continuous 12-month period.

(v) Record of component repair actions including dates of component re-inspections.

(vi) An updated FHC I&M inventory due to change in component list or diagrams.

(vii) Listing of components installed as BACT under District Rule 331 and/or Regulation

(viii) VIII as approved by the District. All records required to be reported pursuant to NSPS Subpart KKK.

(d) *Oil Storage Tanks*.

(i) *Emulsion Volume* - The volume of oil emulsion (wet) received at the EOF each month and the number of days during that month oil emulsion was processed (barrels).

(ii) *Physical Data of Crude Oils* - On an annual basis, the API gravity, true vapor pressure (TVP) sample temperature of the TVP sample.

(iii) *Degassing* - For all degassing events subject to District Rule 343, the volume purged, characteristics of the vapor purged and the control device/method used.

(iv) *Tank Roofs* - Tank roof inspections

(v) The following records required to be maintained per District Rules 325 and 343, Section F (Recordkeeping):

a. The type of liquid in each tank
b. The maximum vapor pressure of the tank content under normal conditions
c. The date and the tanks degassed

(e) *Pigging*. A copy of the EOF Pigging Log, including the date each pig receiver/launcher was used, the total of pigging events per day, per quarter and per year for each launcher/receiver, the pressure inside the receiver/launcher prior to each opening.

(f) *Wastewater Tanks*.

(i) The type of organic liquid in each tank

(ii) The maximum vapor pressure of the liquid

(iii) The results of the inspections required by Section H of this rule

(iv) The American Petroleum Institute gravity of the oil in the tanks

(g) *Produced Gas Sweetening and Sulfur Recovery (LO-Cat) Unit.*

Leak Inspections:

(i) The date and summary of each inspection, including whether the inspection was performed while the LO-Cat system was out of service.

(ii) Record of leaking components found, including dates leaks were detected.

(iii) Record of leaks from critical components.

(iv) Record of leaks from components that incur five repair actions within a continuous 12-month period.

(v) Record of component repair actions including dates of component re-inspections.

(vi) An updated FHC I&M inventory due to change in component list or diagrams.

(vii) Listing of components installed as BACT under District Rule 331 and/or Regulation VIII as approved by the District.

(viii) A table showing all changes in the 'clp' counts from the count shown in the permit condition 9.C.3 table of this PTO, for all categories of components including the 'de minimis' components at the facility.

(h) *Grace Unit.*

(i) The hourly volume flow rate (scf/hour) of gas inflow to the First-stage skid, as recorded by FR-560;

(ii) The hourly volume flow rate (scf/hour) of: (a) First-stage permeate gas flow into H-204, as recorded by FIT-732, (b) First-stage permeate gas flow to the Relief Header for Relief Scrubber, as recorded by FR-567, and,

(iii) The weekly high heating value of the first stage permeate stream. The high heating value of this stream shall be determined by lab analyses of a sample taken at FR-567 or other locations approved by the District.

(iv) The computed heat value of the permeate gas output from the Grace Unit in MMBtu/hr.

(i) *Solvent Usage*.

(i) *Solvent Cleaning Degreasing* - On a monthly basis: the amount of solvent used; the percentage of ROC by weight (as applied); the solvent density; the amount of solvent reclaimed; whether the solvent is photochemically reactive; and, the resulting emissions of ROC and photochemically reactive solvents to the atmosphere in units of pounds per month.

(ii) *Surface Coating (Maintenance)* - On a monthly basis: the amount of solvent and coatings used; the percentage of ROC by weight (as applied); the solvent density; the amount of solvent reclaimed; whether the solvent is photochemically reactive; and, the resulting emissions of ROC and photochemically reactive solvents to the atmosphere in units of pounds per month.

(iii) Information required by the Solvent Reclamation Plan, if any.

(j) *Emergency/ Standby Diesel Internal Combustion Engines (E/S-DICE):*

(i) emergency use hours of operation.

(ii) maintenance and testing hours of operation.

(iii) hours of operation for emission testing to show compliance with the ATCM {if specifically allowed for under this permit}.

(iv) hours of operation for all uses other than those specified in items (i) - (iii) above along with a description of what those hours were for.

(v) fuel purchase records that demonstrate that only fuel meeting the requirements of the ATCM is purchased and added to each emergency standby engine, or to any fuel tank directly attached to each emergency standby engine.

(k) *General Reporting Requirements*.

(ii) On quarterly and annual basis, the emissions from each permitted emission unit for each criteria pollutant. Also, include a quarterly and annual emissions summary for each criteria pollutant.

(iii) On quarterly and annual basis, the emissions from each exempt emission unit for each criteria pollutant. Also, include a quarterly and annual emissions summary for each criteria pollutant.

(iv) A copy of all completed District-10 forms (*IC Engine Timing Certification Form*), if used.

(v) A copy of the Rule 202 De Minimis Log for the stationary source.

See also Section 9.D for additional District required reporting requirements.
[*Re: Rule 202, Rule 316, Rule 317, Rule 325, Rule 331, Rule 333, Rule 359, 40 CFR 70.6.(a)(3)*]

C.13 **Permitted Equipment.** Only those equipment items listed in Attachment 10.5 are covered by the requirements of this permit and District Rule 201.B.
[*Re: District Rule 1303*]

C.14 **Emergency Episode Plan.** As necessary, the permittee shall implement the Emergency Episode Plan for the EOF. Upon written request by the District, the permittee shall provide the District with an updated plan. [*Re: District Rule 603 and 1303*]

C.15 **Documents Incorporated by Reference.** The documents listed below, including any District-approved updates thereof, are incorporated herein and shall have the full force and effect of a permit condition for this operating permit. These documents shall be implemented for the life of Onshore Facility.

(a) Fugitive Emissions Inspection and Maintenance (I&M) Plan (Rule 331) for the Ellwood Onshore Facility, (dated 05/28/2002 and approved by the District on 10/11/2002), (revised April 2012) and any subsequent District-approved updates.

(b) IC Engine Particulate Matter Operation and Maintenance Plan (dated and approved 3/20/2006) and any subsequent District-approved updates.

(c) Ellwood Onshore Facility Degassing Plan (Rule 343), (dated 05/21/2004 and approved by the District on 01/11/2005), (revised October 2013) and any subsequent District-approved updates.

(d) Flare Volume Minimization and Monitoring Plan (updated 3/18/2008 and approved by the District in June 2008) and any subsequent District-approved updates.

(e) Emergency Episode Plan (Rule 603) (submitted on 3/15/02 and approved by the District on 8/02) and any subsequent District-approved updates.

(f) Complaint Response Plan (dated 05/30/2003 and approved on 04/15/2004) and any subsequent District-approved updates.

(g) Fence Line Monitor Plan (dated 4/3/2007 and approved on 4/30/2007) and any subsequent District-approved updates.

(h) Abatement Order: Odor Monitoring Implementation Plan (dated 05/21/2004 and approved on 01/11/2005) and any subsequent District-approved updates.

(i) Process Monitor Calibration and Maintenance Plan (dated and approved January 20, 2006*)* and any subsequent District-approved updates.

(j) Flare Gas H_2S Continuous Monitoring Plan (dated 07/21/2005 and approved by the District on 12/06/2006) and any subsequent District-approved updates.

(k) Process Stream Sampling Plan (dated 10/07/2004 and approved on 10/11/2004 and 7/8/05 addendum).

[*Re: District Rules 303, 317, 331, 333, 343, 359, ATC 10941, ATC 11169, Abatement Order 99-6(A)*]

C.16 **Ambient Air Monitoring Stations.** The permittee shall install and maintain the ambient air monitoring station, approved by the District, located as described below to monitor meteorological data in the vicinity of the Ellwood Onshore Facility ("EOF"). The monitoring station shall be equipped to continuously monitor and telemeter the data identified in Table 9-6 below to the District in a manner consistent with the District's *Ambient Air Monitoring Protocol.* The permittee shall connect all ambient and meteorological parameters to the District's central *Data Acquisition System* (DAS) as documented in Table 9-6 below.

Table 9-6. EOF-Located 10-Meter Meteorological Tower

Ambient Air Monitoring Station	Required Parameters
Ellwood Onshore Oil & Gas Processing Facility 7979 Hollister Avenue Goleta, CA 93117	▪ Wind Speed Average ▪ Wind Direction Average ▪ Wind Speed Resultant ▪ Wind Direction Resultant ▪ Sigma Theta (Wind Variation) ▪ Ambient Temperature

The permittee shall reimburse the District's costs for the review and audit of the stations' data in accordance with the cost reimbursement provisions of District Rule 210 and the conditions of this permit. [*Re: ATC/PTO Mod 7904-02, Abatement Order 99-6(A)*].

C.17 **Data Acquisition System Operation and Maintenance Fee.** This permit requires the permittee to connect certain parameters to the District DAS. The permittee shall reimburse the District for the DAS operation and maintenance costs associated with this station. An annual fee shall be assessed based on the District's fiscal year, collected semi-annually.

Pursuant to Rule 210 III.A, the permittee shall pay fees specified in Table 9-7 below. The District shall use these fees to operate, maintain, and upgrade the DAS in proper running order. Fees shall be due and payable pursuant to governing provisions of Rule 210, including CPI adjustments.

All ongoing costs and anticipated future capital upgrades will be the District's responsibility and will be accomplished within the above stated DAS fee. This fee is intended to cover the annual operating budget and upgrades of the DAS and is intended to gradually phase the District into a share of the DAS costs (as outlined in the March 27, 1998, letter - *Fixed Fee Proposal for*

Monitoring and DAS Costs). In the event that the assumptions used to establish this fee substantially increase or decrease, the District may revisit and adjust the fee based on documentation of cost of services. Adjusted fees will be implemented by transmitting a revised Table 9-7, which will become an enforceable part of this permit.

The fees prescribed in this condition shall expire if and when the Board adopts a Data Acquisition System Operation and Maintenance Fee schedule and such fee becomes effective.

Table 9-7. Fees for DAS Operation and Maintenance [(a)(b)]

FEE DESCRIPTION	FEE
DATA ACQUISITION SYSTEM OPERATION AND MAINTENANCE FEE	
Per CEM, ambient or meteorological parameter required by permit to be transmitted real-time to the District Central Data Acquisition System. (see Tables 9-6 (above) and 9-9 (below)	$2,174 annually

(a) All fees shall be due and payable pursuant to the governing provisions of Rule 210, including CPI adjustments.

(b) The fees in this table are based on the District's March 27, 1998 letter (Fixed Fee Proposal for Monitoring and DAS Costs), adjusted for CPI, and may be updated pursuant to Rule 210 and shall be effective when issued and shall not require a modification to this permit.

[*Re: ATC/PTO Mod 7904-02, Abatement Order 99-6(A)*]

C.18 **Ambient Monitoring Station Data Review and Audit Fee**. The permittee shall operate the ambient monitoring stations specified in Table 9-6 and submit data to the District for quality assurance review and shall have the stations audited quarterly by District, or its contractor. In addition, the permittee shall reimburse the District for the cost of this service. Effective July 1, 1999, the permittee shall be assessed an annual fee, based on the District's fiscal year, collected semi-annually.

Pursuant to Rule 210 III.A., The permittee shall pay fees specified below in Table 9-8. The District will use this fee to pay staff costs to review and quality-assure the monitoring data collected by the permittee and the contractor or staff costs to audit the monitoring equipment. This fee shall not cover any District time necessary to issue or respond to any Notice of Violation, which will be billed on a reimbursable basis. Fees shall be due and payable pursuant to governing provisions of Rule 210, including CPI adjustments.

In the event that the permittee consistently requires services in excess of those assumed in the March 27, 1998 letter (*Fixed Fee Proposal for Monitoring and DAS Costs*), the Control Officer may move the permittee to a reimbursable method of payment, subject to provisions of Rule 210. In the event that the assumptions used to establish this fee substantially increase or decrease, District may revisit and adjust the fee based on documentation of cost of services. Adjusted fees will be implemented by transmitting a revised Table 9-8, which will become an enforceable part of this permit. The fees prescribed in this condition shall expire if and when the Board adopts an Ambient Monitoring Station Data Review and Audit Fee and such fee becomes effective.

Table 9-8 Fees for Data Review and Audit [(a) (b)]

FEE DESCRIPTION	FEE
Meteorological Monitoring Station Data Review and Audit Fee	**Per Station**
For data review and audit activities associated with data submitted from each monitoring station in Tables 9-6 .	$19,610 annually

(a) All fees shall be due and payable pursuant to the governing provisions of Rule 210, including CPI adjustments.

(b) The fees in this table are based on the District's March 27, 1998 letter (*Fixed Fee Proposal for Monitoring and DAS Costs*), adjusted for CPI, and may be updated pursuant to the requirements of this permit.

[*Re: ATC/PTO Mod 7904-02, Abatement Order 99-6(A)*]

C.19 **Data Acquisition System.** The permittee shall install, connect to the District's central Data Acquisition System (DAS) and maintain the process and alarm monitoring systems required under Abatement Order 6-99(A), approved by the District and identified in Table 9-9 below and ambient air monitoring station parameters listed in Table 9-6.

Table 9-9 DAS Parameters

Facility Location	**Required Parameters** (by "bullet" item)
EOF	▪ Tank 201 PRV Proximity Switch ▪ Tank 202 PRV Proximity Switch ▪ Tank 203 PRV Proximity Switch ▪ Tank 204 PRV Proximity Switch ▪ H-205 Fuel Flow Meter ▪ H-205 Combustion Temperature ▪ BL-1808 Flow (SCFM) ▪ BL-1808 Suction Pressure/Vacuum ▪ Combined BL-1801 & BL-1802 Flows ▪ Eight - In-Plant-Zone H_2S Detectors (8 parameters) ▪ Six - Fence Line H_2S Detectors

[*Re: ATC/PTO Mod 7904-02, Abatement Order 99-6(A)*]

C.20 **Fence Line H_2S Detectors.** The permittee shall operate, calibrate and maintain six (6), fence line H_2S detectors per the District-approved *Fence Line Monitoring Plan* and any subsequent District-approved updates. These sensors shall be connected to the DAS and operated for the life of the project.
[*Re: ATC/PTO 7904-2, Abatement Order 99-6(A), Rule 303*]

C.21 **Process Monitor Calibration and Maintenance Plan.** The permittee shall operate, maintain, calibrate and test the process monitors listed in Table 9-5 (permit condition 9.C.2), the portable H_2S analyzer, and the meters discussed in Section 4.10.2 of this permit in accordance with manufacturer's recommended specifications and the approved District *Process Monitor Calibration and Maintenance Plan.* [*Re: Rule 303, ATC/PTO 7904-2, Abatement Order 99-6(A)*]

C.22 **Process Stream Sampling and Analysis.** The permittee shall sample and analyze the process streams consistent with its *Process Stream Sampling Plan* and any subsequent District-approved updates. The District may require the permittee to sample additional process streams, or take more frequent samples as may be necessary for the District to confirm compliance with this permit. All process stream samples shall be taken according to District-approved ASTM methods and must follow traceable chain of custody procedures.

C.23 **IC Engine Particulate Matter Operation & Maintenance Plan.** To ensure compliance with District Rules 205.A, 302, 304, 309 and the California Health and Safety Code Section 41701 by all its diesel IC engines, the permittee shall implement the District-approved *IC Engine Particulate Matter Operation and Maintenance Plan*.[*Re: District Rules 205.A, 302, 304, 309*]

C.24 **Visible Emissions.** The permittee shall not discharge any visible emissions into the atmosphere from the emission sources below for a period or periods aggregating more than three minutes in any one hour.

(a) Monitoring Frequency:

(i) *Planned-Intermittent Flaring (Thermal Oxidizers H-205, H206, H-207)*: The permittee shall perform a visible emissions observation for a six-minute period once per quarter during a planned intermittent flaring event. If a planned-intermittent flaring event does not occur during the calendar quarter, no monitoring is required. For each unplanned flaring event greater than six-minutes in duration, a visible emissions observation for a six-minute period shall be performed. Visible emission observations shall be documented using a District-approved Visible Emissions Recordkeeping Log. If no visible emissions are detected during the six-minute observation period, no further monitoring for that event is required. If visible emissions are detected during the six-minute period, then the visible emission observations shall continue in accordance with the "Monitoring Procedure" below.

(i) *Planned-Continuous Flaring (Thermal Oxidizers H-205, H-206, H-207)*: Once per calendar quarter the permittee shall perform a visible emissions observation for a six-minute period on the thermal oxidizer. Visible emission observations shall be documented using a District-approved Visible Emissions Recordkeeping Log. If no visible emissions are detected during the six-minute observation period, no further monitoring is required. If visible emissions are detected during the six-minute period, then the visible emission inspection shall continue in accordance with the "Monitoring Procedure" below.

(iii) *Diesel-fueled IC Engine(s)*. Once per calendar quarter, the permittee shall perform a visible emissions observation for a six-minute period on each permitted and exempt engine when operating. If an engine does not operate during a calendar quarter, no monitoring is required. Visible emission observations shall be documented using a District-approved Visible Emissions Recordkeeping Log. If no visible emissions are detected during the six-minute observation period, no further monitoring is required. If visible emissions are detected during the six-minute period, then the visible emission inspection shall continue in accordance with the "Monitoring Procedure" below.

(b) Monitoring Procedure: The permittee shall conduct visible emissions observations every 15 seconds (using a stopwatch) and record the observation as either “0” (no visible emissions) or “E” (visible emissions) on a Visible Emissions Recordkeeping Log. Any time visible emissions are observed at the end of a 15-second interval, it shall be assumed that the visible emissions occurred for the entire 15 seconds preceding the reading. The start time and end time of the visible emission observations shall be recorded together with the date of the observation and name of the observer. The permittee shall conduct a visible emissions observation for the length of time necessary to document three continuous minutes of no visible emissions or the presence of visible emissions for more than the aggregation of three minutes during any hour, whichever occurs first.

(c) Compliance: The permittee shall be deemed in compliance with this condition if no visible emissions are observed during the initial six-minute period. If any visible emissions are observed during the initial six-minute period, the permittee shall continue with the visible emissions observation. The permittee shall be deemed to comply with this condition if no more

than 12 "E" notations occur within any one-hour period. For compliance purposes, "one hour period" shall mean a rolling hour.

C.25 **Throughput Limits.** The following facility throughput limits shall not be exceeded:

a. Crude Emulsion Receipt: 20,000 barrels/day [(a)]
b. Total Gas [(b)] Processed: 20.0 MMSCF/day [(b)]

Note: (a) Calculated as monthly receipt volume divided by the number of days oil emulsion is received.
(b) Total gas processed includes gas processed through all units including the dehydration unit, the Grace Unit and the natural gas liquid fractionating units.

Compliance with this condition shall be assessed through compliance with Recordkeeping and Semi-Annual Reporting conditions of this permit. **(***Ref.: ATC 1196)*

C.26 **Facility Shutdown Due to Pipeline Failure.** The permit conditions listed in Table 1 below shall not apply to equipment units that are non-operational during facility shutdown conditions caused by the failure and shutdown of Plains All American Pipeline Lines 901 and 903. In addition, the otherwise applicable requirements of the District Prohibitory Rules listed in Table 2 below shall not apply to equipment units that are non-operational during facility shutdown conditions caused by the failure and shutdown of Plains All American Pipeline Lines 901 and 903. All permit conditions and District Prohibitory Rules applicable to an equipment unit that was non-operational, with the exception of source testing conditions, shall be considered fully enforceable immediately upon startup of the equipment unit. All permit conditions related to source testing shall be enforceable 90 calendar days following startup of the equipment unit. The permittee shall submit a written notification to the District no less than 30 calendar days prior to the startup of each equipment unit. Notwithstanding the above, the permittee shall retain the obligation to comply with all other permit conditions and local, state and federal rules and regulations not specifically referenced in Table 1 and Table 2 below.

Ellwood Onshore Facility Table 1:

Condition	*Condition*	*Sub-Condition Name*	*Permit Requirement*
9.C.1(c)(i)	External Combustion Equipment	Monitoring	Process Heater H-204 - Source Testing
9.C.1(c)(iv)	External Combustion Equipment	Monitoring	Sulfur Content of In-Plant Gas
9.C.1(c)(v)	External Combustion Equipment	Monitoring	Sulfur Content of Grace Unit Permeate Gas
9.C.1(c)(vii)	External Combustion Equipment	Monitoring	Heat Value Content of Grace Unit Permeate Gas
9.C.2(c)(i)	Combustion: Thermal Oxidizers	Monitoring	Thermal Oxidizer H-205 – Source Testing

Ellwood Onshore Facility Table 2:

Rule	***Rule Name***
342	Boilers, Steam Generators, and Process Heaters (5 MMBtu/hr and Greater)
359	Flares and Thermal Oxidizers

C.27 **Emergency/ Standby Diesel IC Engine (E/S-DICE).** The equipment listed below belongs to this emissions unit category.

District ID No.	Equipment ID No.	Name
394946	PE6068N015381	315 hp John Deere Model 6068HFG85A Tier 3, turbocharged, aftercooled, diesel-fired IC engine powering an emergency generator

(a) **Emission Limitations.** The mass emissions from the equipment permitted herein shall not exceed the values listed in Table 1. Emissions of PM and other pollutants shall not exceed the emissions standards listed in Table 2 of this permit. Compliance shall be based on the operational, monitoring, recordkeeping and reporting conditions of this permit.

(b) **Operational Restrictions.** The equipment permitted herein is subject to the following operational restrictions, in addition to its applicable DICE-ATCM requirements. The equipment may operate as many hours as necessary for emergency use, as defined in the ATCM[5].

(i) Maintenance & Testing Use Limit*:* The stationary emergency standby diesel-fueled engine(s), except for in-use firewater pump engines, shall not be operated for more than the hours listed in the attached equipment list for maintenance and testing[6] purposes.

(ii) Impending Rotating Outage Use*:* The stationary emergency standby diesel-fueled engine(s) may be operated in response to the notification of an impending rotating outage if all the conditions cited in the ATCM are met.

(iii) Fuel and Fuel Additive Requirements*:* The permittee may only add fuel and/or fuel additives that comply with the ATCM to the engine or to any fuel tank directly attached to the engine.

[5] As used in the permit, "ATCM" means Section 93115, Title 17, California Code of Regulations. Airborne Toxic Control Measure for Stationary Compression Ignition (CI) Engines

[6] "maintenance and testing" is defined in the ATCM and may also be found on the District webpage at http://www.ourair.org/wp-content/uploads/ES_MT_DICE_Definitions.pdf

(c) **Monitoring.** The equipment permitted herein is subject to the following monitoring requirements:

(i) Non-Resettable Hour Meter: Each stationary emergency standby diesel-fueled engine(s) shall be equipped with a non-resettable hour meter with a minimum display capability of 9,999 hours, unless the District has determined (in writing) that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history.

(d) **Recordkeeping.** The permittee shall record and maintain the information listed below. Log entries shall be retained for a minimum of 36 months from the date of entry. Log entries made within 24 months of the most recent entry shall be retained on-site, either at a central location or at the engine's location, and made immediately available to the District staff upon request. Log entries made from 25 to 36 months from most recent entry shall be made available to District staff within 5 working days from request. District Form ENF-92 (*Diesel-Fired Emergency Standby Engine Recordkeeping Form*) can be used for this requirement.

(i) emergency use hours of operation.

(ii) maintenance and testing hours of operation.

(iii) hours of operation for emission testing to show compliance with the ATCM {if specifically allowed for under this permit}.

(iv) hours of operation for all uses other than those specified in items (i) - (iii) above along with a description of what those hours were for.

(v) fuel purchase records that demonstrate that only fuel meeting the requirements of the ATCM is purchased and added to each emergency standby engine, or to any fuel tank directly attached to each emergency standby engine.

(e) **Reporting.** On a semi-annual basis, a written report documenting compliance with the terms and conditions of this permit and the ATCM for the previous six months shall be provided by the permittee to the District. The report must list all data required by the permit condition 9.C.12 (Semi-Annual Monitoring/Compliance Verification Reports) of this permit.

(f) **Temporary Engine Replacements - DICE ATCM.** Any reciprocating internal combustion engine subject to this permit and the stationary diesel ATCM may be temporarily replaced only if the requirements (i) – (viii) listed herein are satisfied.

(i) The permitted engine that is being temporarily replaced is in need of routine repair or maintenance.

(ii) The permitted engine does not have a cracked block, unless the block will be replaced under manufacturer's warranty.

(iii) Replacement parts are available for the permitted engine.

(iv) The permitted engine is returned to its original service within 180 days of installation of the temporary engine

(v) The temporary replacement engine has the same or lower manufacturer rated horsepower and same or lower potential to emit of each pollutant as the permitted engine. At the written request of the permittee, the District may approve a replacement engine with a larger rated horsepower if the proposed temporary engine has manufacturer guaranteed emissions (for a brand new engine) or source test data (for a previously used engine) less than or equal to the permitted engine.

(vi) The temporary replacement engine shall comply with all rules and permit requirements that apply to the permitted engine.

(vii) For each permitted engine to be temporarily replaced, the permittee shall submit a completed *Temporary IC Engine Replacement Notification* form (Form ENF-94) within 14 days of the temporary engine being installed. This form may be sent hardcopy, or can be e-mailed (e-mail: engr@sbcapcd.org) to the District (Attn: Engineering Supervisor).

(viii) Within 14 days of returning the original permitted engine to service, the permittee shall submit a completed *Temporary IC Engine Replacement Report* form (Form ENF-95). This form may be sent hardcopy, or can be e-mailed (e-mail: engr@sbcapcd.org) to the District (Attn: Engineering Supervisor).

Any engine in temporary replacement service shall be immediately shut down if the District determines that the requirements of this condition have not been met. If the requirements of this condition are not met, the permittee must obtain an ATC before installing or operating a temporary replacement engine.

(g) **Permanent Engine Replacements.** The permittee may install a new engine in place of an engine permitted herein without first obtaining an ATC only if the requirements (i) – (vi) listed herein are satisfied.

(i) The permitted stationary diesel-fueled engine is an E/S engine, a firewater pump engine or an engine used for an essential public service (as defined by the District).

(ii) The permitted engine breaks down, cannot be repaired, and needs to be replaced by a new permanent engine.

(iii) The facility provides "good cause" (in writing) for the need to install a new permanent engine before an ATC can be obtained for a new engine.

(iv) The new permanent engine must comply with the requirements of the ATCM for new engines. A temporary replacement engine may be used while the new permanent engine is being procured only if it meets the requirements of the *Temporary Engine Replacements - DICE ATCM* permit condition.

(v) An ATC application for the new permanent engine must be submitted to the District within 15 days of the existing engine being replaced and the ATC must be obtained no later than 180 days from the date of engine replacement (these timelines include the use of a temporary engine).

(vi) For each new permanent engine installed pursuant to this condition, the permittee shall submit a completed *Permanent IC Engine Replacement Notification* form (Form ENF-96) within 14 days of the new engine being installed. This form may be sent hardcopy, or can be e-mailed (e-mail: engr@sbcapcd.org) to the District (Attn: Engineering Supervisor).

Any engine installed pursuant to this condition shall be immediately shut down if the District determines that the requirements of this condition have not been met.

9.D District-Only Conditions

The following section lists permit conditions that are not enforceable by the USEPA or the public. However, these conditions are enforceable by the District and the State of California. These conditions are issued pursuant to District Rule 206 (*Conditional Approval of Authority to Construct or Permit to Operate*), which states that the Control Officer may issue an operating permit subject to specified conditions. Permit conditions have been determined as being necessary for this permit to ensure that operation of the Ellwood Onshore Facility (EOF) complies with all applicable local and state air quality rules, regulations and laws. Failure to comply with any condition specified pursuant to the provisions of Rule 206 shall be a violation of that rule, this permit, as well as any applicable section of the California Health & Safety Code and any applicable requirement.

D.1 **Condition Acceptance.** Acceptance of this operating permit by the permittee shall be considered as acceptance of all terms, conditions, and limits of this permit.

D.2 **Grounds for Revocation.** Failure to abide by and faithfully comply with this permit shall constitute grounds for revocation pursuant to California Health & Safety Code Section 42307 *et seq*.

D.3 **Defense of Permit.** The permittee agrees, as a condition of the issuance and use of this PTO, to defend at its sole expense any action brought against the District because of the issuance of this permit. The permittee shall reimburse the District for any and all costs including, but not limited to, court costs and attorney's fees that the District may be required by a court to pay as a result of such action. The District may, at its sole discretion, participate in the defense of any such action, but such participation shall not relieve the permittee of its obligation under this condition. The District shall bear its own expenses for its participation in the action.

D.4 **Reimbursement of Costs**. All reasonable expenses, as defined in District Rule 210, incurred by the District, District contractors, and legal counsel for all activities related to the implementation of Regulation XIII (*Part 70 Operating Permits*) that follow the issuance of this PTO permit, including but not limited to permit condition implementation, Abatement Order 99-6A implementation, compliance verification and emergency response, directly and necessarily related to enforcement of the permit shall be reimbursed by the permittee as required by Rule 210. All costs shall be reimbursed within thirty (30) calendar days of invoicing by the District.

D.5 **Compliance.** Nothing contained within this permit shall be construed to allow the violation of any local, State or Federal rule, regulation, ambient air quality standard or air quality increment.

D.6 **Consistency with Analysis.** Operation under this permit shall be conducted consistent with all data, specifications and assumptions included with the application, supplements thereof (as documented in the District's project file), and the District's analyses under which this permit is issued.

D.7 **Consistency with Federal, State and Local Permits.** Nothing in this permit shall relax any air pollution control requirement imposed on the stationary source by any other governmental agency.

D.8 **Odorous Organic Sulfides (District Rule 310).** The permittee shall not discharge H_2S and organic sulfides that result in ground level concentrations beyond the facility property boundary in excess of 0.06 ppmv averaged over 3 minutes or 0.03 ppmv averaged over 1 hour.

D.9 **Oil and Emulsion Breaker Tanks.** The following equipment is included in this emissions category:

District ID No.	Equipment ID No.	Name
000283	T-202	Oil Shipping Tank T-202 - 2,000 barrel (D, 30-foot by H, 16-foot)
006477	T-203	Oil Surge Tank T-203 - 2,000 barrel (D, 30-foot by H, 16-foot)
000284	T-204	Reject Oil Tank T-204 - 2,000 barrel (D, 30-foot by H, 16-foot)

(a) Emission Limits: The mass emission for tanks T-202, T-203, and T-204 listed above shall not exceed the subtotal limit in Table 5.1-3 and Table 5.1-4. Compliance with this limit for each tank is determined based on the tank throughput, the equipment rating, ROC fraction in the liquid (if non-ROC is present in the liquid) and the USEPA tank equations. Federally enforceable limits for the emulsion breaker tank are listed in Section 9.C.

(b) Operational Limits: The combined throughput of Tanks T-202, T-203, and T-204 shall not exceed 13,000 barrels of (dry) oil per day.

(c) Monitoring: For Tanks T-202, T-203 and T-204, the volume of dry oil processed in each tank on a monthly and annual basis and the number of days each month that oil was processed (barrels) shall be recorded. The average daily oil throughput of each tank shall be calculated each month as the total monthly oil throughput for the tank divided by the number of days in the month the tank held oil.

(d) Recordkeeping: Monitoring records taken per condition 9.D.9(c) shall be retained.

(e) Reporting: On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the District. The report must list all the data required by the *Compliance Verification Reports* conditions of this permit.

D.10 **Wastewater Tanks, Sumps.** The following equipment is included in this emissions category:

District ID No.	Equipment ID No.	Name
009327	S-202	Sump Tank, S-202; 80 bbl., (D, 6.5-foot by L, 14-foot)
006478	TK-201	Wash Tank, TK-201; 3000 bbl.,(D, 30-foot by H, 24-foot)
009330	S-203	Oil Sump, S-203; 95 bbl.

(a) Emission Limits: The mass emissions for the Sump Tank (S-202) and Wash Tank (TK-201) shall not exceed the limits in Table 5.1-3 and Table 5.1-4. Compliance with this condition shall be based on the operational, monitoring, recordkeeping and reporting conditions in this permit.

(b) Operational Limits: To ensure the exemption of the Oil and WW Sumps (S-202/203) and Wash Tank (TK-201) from District Rule 344 per Section B.4, the permittee shall meet the following requirements:

(i) *Service* - The sump tank and wash tank listed above shall receive only those liquid streams from 'one or more previous separation' processes.
(ii) *Size* - The working surface area of the equipment listed above shall not exceed the values listed in Table 5.1-1, namely 6.5' diameter for the sump tank, 7' diameter for the oil sump, and 30' diameter for the wash tank, (i.e., less than 1000 square feet).

Federally enforceable limits for these items are listed in Section 9.C.6(b).

(c) Monitoring: All monitoring requirements are federally enforceable. Refer to Section 9.C.6(c).

(d) Recordkeeping: All recordkeeping requirements are federally enforceable. Refer to Section 9.C.6(d).

(e) Reporting: On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the District. The report must list all the data required by the *Compliance Verification Reports* condition of this permit.

D.11 **Loading Rack.** The following equipment is included in this emissions category:

District ID No.	Equipment ID No.	Name
008003	None	LPG/NGL Loading Rack (balanced VRS loading)

Federally enforceable limits for the emulsion breaker loading rack are listed in Section 9.C.

(a) Emission Limits: The mass emissions for the LPG/NGL loading rack listed above shall not exceed the limits in Table 5.1-3 and Table 5.1-4. Compliance with this condition shall be based on the operational, monitoring, recordkeeping and reporting conditions in this permit.

(b) Operational Limits: The following limits apply:

(i) *Throughput* - Daily and annual truck loading of LPG is restricted to 60,000 gallons per day and 10 million gallons per year, respectively. Daily and annual truck loading of NGL is restricted to 60,000 gallons per day and 5 million gallons per year, respectively. Compliance is based on monitoring and recordkeeping for the daily and annual throughputs.

(c) Monitoring: The permittee shall log, each day, the volume of each load of LPG and NGL loaded into the tanker trucks.

(d) Recordkeeping: The permittee shall maintain the following records:

(i) Daily logs documenting the volume, in gallons, and dates of LPG and NGL shipments.

(ii) The number of LPG trucks loaded each month and for the entire year.

(e) Reporting: On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the District. The report must list all the data required by the *Compliance Verification Reports* condition of this permit.

D.12 **Solvent Usage.** The following equipment is included in this emissions unit category:

District ID No.	Name
106341	Solvents - Cleaning/Degreasing (*as part of regular operations)*
009521	Surface Coating (*that also includes solvents as thinners)*

(a) Emission Limits: The mass emissions for the equipment listed above shall not exceed the limits in Table 5.1-3 and Table 5.1-4. Compliance with this condition shall be based on the operational, monitoring, recordkeeping and reporting conditions in this permit.

(b) Operational Limits: Refer to Section 9.C.

(c) Monitoring: None.

(d) Recordkeeping: Refer to Section 9.C.

(e) Reporting: Refer to Section 9.C.

D.13 **Throughput Limits.** The following facility throughput limits shall not be exceeded:

a. Oil Production[(a)] (dry): 13,000 barrels/day
b. Gas Production[(a)(b)](dry): 13.0 MMSCFD
c. LPG Production: 10.0 MM gallons/year
d. NGL Production: 5.0 MM gallons/year

Note:

(a) Daily production is calculated as monthly production volume divided by the number of production days.
(b) Gas production volume includes CO_2 portion of the gas.

Compliance with this condition shall be assessed through compliance with Recordkeeping and Semi-Annual Reporting conditions of this permit.

D.14 **Recordkeeping.** The following records shall be maintained by the permittee and shall be made available to the District upon request:

(a) The average volumes, in standard cubic feet per day, of gas processed each day (i) for distribution into the sales gas line, (ii) for use at all combustion units and (iii) CO_2 gas at Grace unit not re-injected into the permeate gas stream, if any. The average volume shall be computed by dividing the monthly volume by the number of days that gas was processed;

(b) Date and duration of time that buy-back and/or sales gas does not satisfy 'sulfur content' specifications for utility grade gas (to ensure any purge gas used meets PUC gas quality regarding sulfur);

(c) The volume (gallons) of natural gas liquids (NGL) produced/processed each month and the number of days that NGL was produced/processed;

(d) The volume (gallons) of liquefied petroleum gas (LPG) produced/processed each month and the number of days that LPG was produced/processed;

(e) Vacuum truck data including: date(s) of each vacuum truck use, volume (gallons) and physical characteristics of the material vacuumed;

(f) Date(s) and time(s) of the use of the cooling tower (V-1701);

(g) Date(s) and elapsed time (hours) of the use of the firewater pump engine and the emergency backup electrical generator engine;

(h) Monthly/annual analytical testing of the feedstocks as required by Condition D.16 of this permit;

(i) Log of breakdown venting(s) including date(s), time(s), volume(s) for each event;

(j) Records required by the following District Rules: 325.F, 328.G, 331.G, 342.I, 343.F, 359.G and 359.H;

(k) Oil Volume - The volume of oil pumped out of the facility shall be measured using calibrated flow meter (barrels) at the EOF LACT unit. The calibration results of this flow meter too shall be made available to the District staff upon request.

(l) The following records required by subpart ZZZZ:

(1) The date of each engine oil and filter change, the number of hours of operation since the last oil and filter change, and the date and results of each oil analysis;
(2) The date of each air filter inspection and dates of air filter replacements;

(3) The date of inspection of hoses and belts and the dates of hose and belt replacements.

D.15 **Compliance Verification Reports.** Twice a year, The permittee shall submit a compliance verification report to the District. A paper copy, as well as, a complete PDF electronic copy of these reports, shall be in a format approved by the District. Each report shall be used to verify compliance with 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. All logs and other basic source data not included in the report shall be available to the District upon request. The second report shall also include an annual report for the prior four quarters. Pursuant to Rule 212, the annual report shall include a completed *District Annual Emissions Inventory* questionnaire. In addition to the information required from Section 9.C of this permit, the semi-annual compliance reports shall include the following information:

(a) *Tanks*. Dry oil processed through each tank along with the number of days per month of production.

(b) *Loading Racks.*

(1) The daily volume (in thousand gallons) of LPG and NGL loaded into trucks; and

(2) The total annual volume (in thousand gallons) of LPG and NGL loaded into trucks.

(c) *General Reporting Requirements*.

(1) Facility throughput of oil emulsion and produced gas production per month, the number of operating days per month and the average monthly oil emulsion and produced gas production per month;

(2) Breakdowns and variances reported/obtained per Regulation V along with the excess emissions that accompanied each occurrence;

(3) 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;

(4) The produced gas, produced oil, in-plant fuel gas, and produced wastewater process stream analyses as required by Section 4.10 of this permit. API gravity, true vapor pressure and storage temperature of the oil.

D.16 **Feed Stock Sulfur Concentrations.** The concentration of sulfur compounds (calculated as H_2S at standard conditions, 60° F and 14.7 psia) in the gas received at the facility covered by this

permit shall not exceed 2.0 mole percent. The concentration of sulfur compounds (calculated as H_2S at standard conditions, 60° F and 14.7 psia) in the crude oil received at the facility covered by this permit shall not exceed 0.1 mole percent. Compliance with this condition shall be assessed by monthly analytical testing of the feedstock (both oil and gas) for H_2S by the permittee. The feedstock shall be tested for TRS on an annual basis. Gas testing shall be in accordance with current ASTM-D1O72 or a District-approved equivalent method. The permittee shall obtain prior District approval of the method used to test crude oil.

D.17 **Vacuum Truck Use.** If a vacuum truck is used to service any equipment item listed in this permit, the permittee shall use the portable vacuum truck exhaust scrubbers to reduce emissions to the atmosphere of reactive organic and odorous compounds from the vacuum truck vent(s). All vacuum truck vent pipes shall be connected to the vacuum truck exhaust scrubbers during any period whereby organic liquids are being introduced into the vacuum truck's storage tank.

D.18 **Complaint Response.** The permittee shall comply with all requirements of the District-approved Complaint Response Plan. This plan is incorporated, by reference, as a fully-enforceable part of this permit.

D.19 **Process Monitoring & Alarm System**. The permittee shall install, operate, and properly maintain the following Odor Abatement System (OAS, dated 1995) associated process monitors and alarm systems:

Equipment Item & Parameter	**Monitored Units**	**Monitoring Method**	**Recording Method**
Vapor Recovery Unit			
VRU Compressors 14.5 and 14.6 in Attachment 10.5	Suction Pressure (Pressure Range from -4 inches W.C. to +6 inches W.C.)	PIR/Audible Alarm	Circular Chart (a)

Notes:
(a) = Or equivalent District-approved permanent recording method.
PIR = Pressure indicator recorder

All process monitors listed in this condition shall be operational. All monitor calibration and maintenance shall follow the Process Monitor Calibration and Maintenance Plan.

D.20 **Abrasive Blasting Equipment.** All abrasive blasting activities performed at the facility shall comply with the requirements of the California Administrative Code Title 17, Sections 92000 through 92530.

D.21 **Air Toxic Hot Spots Applicability and Requirements.** Permit holder(s) are subject to the requirements of the Air Toxic "Hot Spots" Information and Assessment Act of 1987 (AB 2588 - California Health and Safety Code (HSC). Section 44300 *et seq.* The permittee shall submit toxic emission information plans and reports to the District in accordance with the requirements of AB 2588.

D.22 **Rule 310 Odor (H_2S) Monitoring.** The permittee shall implement monitoring in accordance with the most recent version of the Fence Line Monitoring Plan. The following specific requirements shall apply:

(a) **Location, Alarm Set-up and Compliance.**

(1) The permittee shall operate the six H_2S gas monitors in accordance with the approved Fence Line Monitoring Plan. The monitors shall be set for an instantaneous alarm set point of 0.3 ppmv H_2S. Instantaneous data from these monitors shall be telemetered to the District's Data Acquisition System (DAS).

(2) A reading of 0.3 ppmv H_2S of any instantaneous data point by any of the six monitors shall constitute a violation of Rule 310 unless the permittee can demonstrate to the satisfaction of the District that one of the conditions listed below has been fully met:

- There is no evidence of an H_2S release at the Ellwood Facility before or during the observed exceedance and the meteorological data does not support a scenario that would lead to detection of an Ellwood facility gas release (e.g., the wind direction was from the north at the time of the alarm).

- Another non-facility source of gas or odor is located and the meteorological data supports detection of this source by the H_2S monitor, and, no other source of H_2S release was discovered at the Ellwood facility.

- Failure or malfunction of the H_2S monitoring device occurred and supporting documentation is provided to the District that clearly demonstrates that a failure or malfunction occurred. For any alarms that the permittee believes were caused by monitor malfunctions (including operator error), the permittee shall submit to the District (via e-mail or Fax) documentation for District review within 4-hours of the first business day after the alarm occurred.

(b) **Fence Line Monitoring Plan Elements.**

The revised Fence Line Monitoring Plan includes the following:

1. A quality assurance procedure to insure the accuracy of the sensors, including calibration and maintenance procedures, quarterly cylinder gas audits (CGA's) and reporting forms.
2. A data recovery calculation and reporting procedures in order to demonstrate a 90% data recovery rate for each monitor.
3. An ID system for each of the six monitors that correlates directly with the ID# on the District Data Acquisition System, and on the map in b(1) above.
4. The recordkeeping and reporting elements identified in the 'recordkeeping' and 'reporting' conditions below.

(c) **Additional Monitoring.**

The permittee may be required to install additional fence line H_2S and/or organic sulfide monitors if more than two venting releases to atmosphere occur of gaseous hydrocarbons from any vent, hatch, or opening of a tank or vessel or any other equipment item (containing such gaseous hydrocarbons) in any given calendar year. A vent release shall include all releases except those associated with proper maintenance, repair or replacement of a pressure relief device. A 12-hour advanced written notice shall be provided to the District prior to any vent release associated with the scheduled repair or maintenance of a pressure relief device not requiring immediate attention.

In addition, if the District determines the H_2S monitors are unreliable at the 0.3 ppmv alarm level for Rule 310 compliance purposes, the District may require the permittee to install a revised monitoring system.

Any additional monitors or a revised monitoring system shall be approved by the District, and the permittee shall submit a revised Fence Line Monitoring Plan for such purposes. Any organic sulfide or odor monitors required shall conform to the District's "Air Quality Monitoring Protocol" specifications. The additional monitors or revised monitoring system shall be installed/implemented within 90 days of written notification from the District. A revised Fence Line Monitoring Plan shall be submitted for District approval within 30 days of the written modification. The above timelines may be extended at the District's discretion.

(d) **Recordkeeping.** At a minimum, the following records shall be maintained by the permittee and shall be made available to the District upon request:

(1) Date and time of each incident in which a monitor reports an H_2S concentration of 0.3 ppmv or greater including a full description of the incident;
(2) For each incident in Item (1) above, a record of whether any in-plant H_2S monitors were activated during the incident;
(3) All vent releases from plant equipment including data and time, duration, associated alarms and whether the venting is maintenance/repair related;
(4) Calibration and Maintenance performed and all malfunctions (description, data and time) for the H_2S monitors;
(5) Electronic file of instantaneous H_2S data and storage of the latest 24 hours on the permittee's data acquisition system;
(6) Quarterly downtime and data capture rate for each H_2S monitor;
(7) Results of the quarterly cylinder gas audits.

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.

(e) **Reporting.** Twice a year, the permittee submits a compliance verification report to the District. Each report shall include the information listed in requirement 'd' of the 'Recordkeeping' listed directly above this paragraph, with the exception of items 4 and 5 therein.
[*Re: ATC/PTO 7904-2, Abatement Order 99-6(A), Rule 310*]

D.23 **Portable Hydrogen Sulfide Monitor.** The permittee shall retain on site at the EOF a fully functional and properly maintained portable H_2S monitor. This monitor shall be used by properly trained personnel to investigate, when safe, reports of odors from any of the facilities. The operating, maintenance, calibration and test requirements of this monitor shall be included in the *Process Monitoring Plan* required by this permit. The permittee shall also provide the District for its retention and use, a like monitor. [*Re: Rule 303, ATC/PTO 7904-2, Abatement Order 99-6(A)*]

D.24 **Emergency Firewater Pump.** The equipment listed below belongs to this emissions unit category.

District ID No.	Equipment ID No.	Name
008006	8Va-366877	292 hp Detroit Diesel Model 7084-7010 Diesel IC engine

(a) **Emission Limitations.** Not Applicable. *(See NFPA-related discussions in Section 4.14)*

(b) **Operational Restrictions.** The emergency diesel-fired IC engine (DICE) listed above is subject to the following operational restrictions listed below, in addition to its applicable DICE-ATCM requirements. Emergency use operations, as defined in Section (d)(25) of the ATCM, have no operational hours limitations.

(i) Impending Rotating Outage Use: The in-use emergency DICE listed above may be operated in response to the notification of an impending rotating outage if all the conditions cited in Section (e)(2)(B)(1) of the ATCM are met.

(ii) Fuel and Fuel Additive Requirements: The permittee may only add fuel and/or fuel additives to the engine or any fuel tank directly attached to the engine that comply with Section (e)(1)(A) or Section (e)(1)(B) of the ATCM, as applicable. The use of Viscon fuel additive is a District-approved additive that must be utilized for the engine(s) subject to this permit per the Risk Reduction and Audit Plan (RRAP) approved for Venoco – Ellwood. The fuel provision may be delayed pursuant to the provisions of Section (c)(19) of the ATCM.

(iii) Firewater Pumps: The emergency DICE listed above that is operated as a firewater pump shall not operate more than the number of hours necessary to comply with the testing requirements of the current National Fire Protection Association (NFPA) 25 – "*Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*".

(iv) Subpart ZZZZ maintenance requirements:

(1) change the oil and filter every 500 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.

(c) **Monitoring.** The emergency DICE is subject to the following monitoring requirement:

Non-Resettable Hour Meter: The emergency-standby DICE shall have installed a non-resettable hour meter with a minimum display capability of 9,999 hours, unless the District has determined (in writing) that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history.

(d) **Recordkeeping.** The permittee shall record and maintain the information listed below. Log entries shall be retained for a minimum of 36 months from the date of entry. Log entries made within 24 months of the most recent entry shall be retained on-site, either at a central location or at the engine's location, and made immediately available to the District staff upon request. Log entries made from 25 to 36 months from most recent entry shall be made available to District staff within 5 working days from request. Use of District Form ENF-92 (*Diesel-Fired Emergency Standby Engine Recordkeeping Form*) can be used for this requirement.

(i) emergency use hours of operation;

(ii) maintenance and testing hours of operation;

(iii) hours of operation for emission testing to show compliance with Section (e)(2)(A)(3) or Section (e)(2)(B)(3) of the ATCM{if specifically allowed for under this permit}

(iv) hours of operation for all uses other than those specified in items (i) – (iii) above along with a description of what those hours were for;

(v) fuel use through the retention of fuel purchase records that account for all fuel used in the engine and all fuel purchased for use in the engine, and, at a minimum, contain the following information for each individual fuel purchase transaction:

(1) identification of the fuel purchased as either CARB Diesel, or an alternative diesel fuel that meets the requirements of the Verification Procedure, or an alternative fuel, or CARB Diesel fuel used with additives that meet the requirements of the Verification Procedure, or any combination of the above;

(2) amount of fuel purchased;

(3) date when the fuel was purchased;

(4) signature of owner, operator, or representative of owner or operator who received the fuel;

(5) signature of fuel provider indicating fuel was delivered.

(v) hours of operation to comply with the requirements of the NFPA for healthcare facilities or firewater pumps {if applicable};

(vi) the following records required by subpart ZZZZ:

(1) The date of each engine oil and filter change, the number of hours of operation since the last oil and filter change, and the date and results of each oil analysis;

(2) The date of each air filter inspection and dates of air filter replacements;

(3) The date of inspection of hoses and belts and the dates of hose and belt replacements.

(e) **Reporting.** By March 1 of each year, a written report documenting compliance of the emergency DICE with the requirements of this permit and in the ATCM, during the previous calendar year, shall be provided by the permittee to the District. All logs and other basic source data not included in the report shall be made available to the District upon request. The report shall include the information required in the Recordkeeping Condition above. This reporting requirement may be satisfied by using District Form ENF-92 (*Diesel-Fired Emergency Standby Engine Recordkeeping Form*).

(f) **Temporary Engine Replacements - DICE ATCM.** The emergency DICE engine may be replaced temporarily only if the requirements (i)-(viii) listed herein are satisfied.

(i) The permitted engine that is being temporarily replaced is in need of routine repair or maintenance.

(ii) The permitted engine does not have a cracked block, unless the block will be replaced under manufacturer's warranty.

(iii) Replacement parts are available for the permitted engine.

(iv) The permitted engine is returned to its original service within 180 days of installation of the temporary engine.

(v) The temporary replacement engine has the same or lower manufacturer rated horsepower and same or lower potential to emit of each pollutant as the permitted engine. At the written request of the permittee, the District may approve a replacement engine with a larger rated horsepower if the proposed temporary engine has manufacturer guaranteed emissions (for a brand new engine) or source test data (for a previously used engine) less than or equal to the permitted engine.

(vi) The temporary replacement engine shall comply with all rules and permit requirements that apply to the permitted engine.

(vii) For each permitted engine to be temporarily replaced, the permittee shall submit a completed *Temporary IC Engine Replacement Notification* form (Form ENF-94) within 14 days of the temporary engine being installed. This form may be sent hardcopy, or can be e-mailed (e-mail: engr@sbcapcd.org) to the District (Attn: Engineering Supervisor).

(viii) Within 14 days of returning the original permitted engine to service, the permittee shall submit a completed *Temporary IC Engine Replacement Report* form (Form ENF-95). This form may be sent hardcopy, or can be e-mailed (e-mail: engr@sbcapcd.org) to the District (Attn: Engineering Supervisor).

Any engine in temporary replacement service shall be immediately shut down if the District determines that the requirements of this condition have not been met. If the requirements of this condition are not met, the permittee must obtain an ATC before installing or operating a temporary replacement engine.

D.25 **Permanent Engine Replacements.** The permittee may install a new engine in place of a permitted Emergency/Standby (E/S) IC engine, fire water pump engine or engine used for an essential public service that breaks down and cannot be repaired, without first obtaining an ATC permit only if the requirements (i-v) listed herein are satisfied.

(i) The permitted stationary diesel IC engine is an E/S engine, a fire-water pump engine or an engine used for an essential public service (as defined by the District).

(ii) The engine breaks down, cannot be repaired and needs to be replaced by a new engine.

(iii) The facility provides "good cause" (in writing) for the immediate need to install a permanent replacement engine prior to the time period before an ATC permit can be obtained for a new engine. The new engine must comply with the requirements of the ATCM for new engines. If a new engine is not immediately available, a temporary engine may be used while the new replacement engine is being procured. During this time period, the temporary replacement engine must meet the same guidelines and procedures as defined in the permit condition above (*Temporary Engine Replacements - DICE ATCM*).

(iv) An Authority to Construct application for the new permanent engine is submitted to the District within 15 days of the existing engine being replaced and the District permit for the new engine is obtained no later than 180 days from the date of engine replacement (these timelines include the use of a temporary engine).

(v) For each permitted engine to be permanently replaced pursuant to the condition, the permittee shall submit a completed *Permanent IC Engine Replacement Notification* form (Form ENF-96) within 14 days of either the permanent or temporary engine being

installed. This form shall be sent electronically to: *temp-engine@sbcapcd.org*.

Any engine installed (either temporally or permanently) pursuant to this permit condition shall be immediately shut down if the District determines that the requirements of this condition have not been met.

D.26 **Notification of Non-Compliance.** Owners or operators who have determined that they are operating their stationary diesel-fueled engine(s) in violation of the requirements specified in Sections (e)(1) and (e)(2) of the ATCM shall notify the District immediately upon detection of the violation and shall be subject to District enforcement action.

D.27 **Notification of Loss of Exemption.** Owners or operators of in-use stationary diesel-fueled CI engines, who are subject to an exemption specified in Section (c) of the ATCM from all or part of the requirements of Section (e)(2) of the ATCM, shall notify the District immediately after they become aware that the exemption no longer applies and pursuant to Section (e)(4)(F)(1) of the ATCM shall demonstrate compliance within 180 days after notifying the District.

D.28 **Enrollment in a DRP/ISC - January 1, 2005.** Any stationary diesel IC engine rated over 50 bhp that enrolls for the first time in a Demand Response Program/Interruptible Service Contract (as defined in the ATCM) on or after January 1, 2005, shall first obtain a District Authority to Construct permit to ensure compliance with the emission control requirements and hour limitations governing ISC engines.

D.29 **Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities.** The equipment permitted herein shall be operated in compliance with the California Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities regulation (CCR Title 17, Section 95665 *et. Seq*.).

D.30 **CARB GHG Regulation Recordkeeping:** The permittee shall maintain at least 5 years of records that document the following:

(a) The number of crude oil or natural gas wells at the facility.

(b) A list identifying all pressure vessels, tanks, separators, sumps, and ponds at the facility, including the size of each tank and separator in units of barrels.

(c) The annual crude oil, natural gas, and produced water throughput of the facility.

(d) A list identifying all reciprocating and centrifugal natural gas compressors at the facility.

(e) A count of all natural gas powered pneumatic devices and pumps at the facility.

(f) A copy of the *Best Practices Management Plan* designed to limit methane emissions from circulation tanks, if applicable.

D.31 **CARB GHG Regulation Reporting:** On an annual basis, the permittee shall report all throughput data and any updates to the information recorded pursuant to the *CARB GHG Regulation Recordkeeping* Condition above using District Annual Report Form ENF-108. This report shall be submitted by March 1 of each year detailing the previous year's activities.

D.32 **CARB CHG Regulation - Reciprocating Natural Gas Compressors.** The requirements of Section 95668(c(4) of the California Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities regulation (CCR Title 17, Section 95665 *et. Seq*.) apply to the reciprocating natural gas compressors at the EOF (VRU 1, VRU 2, VRU 3, VRU 4, Produced Gas Compressor - 3 stages):

(i) Operational Restriction: By January 1, 2019, any reciprocating natural gas compressor with a rod packing or seal with a measured emission flow rate greater than two (2) standard cubic feet per minute (scfm), or a combined rod packing or seal emission flow rate greater than the number of compression cylinders multiplied by two (2) scfm, shall be controlled with a vapor collection system or successfully repaired according to the timelines specified in Sections 95668(c)(4)(D) and 95668(c)(4)(F) of the California Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities regulation.

(ii) Monitoring: The reciprocating natural gas compressor rod packing or seal emission flow rate through the rod packing or seal vent stack shall be measured annually pursuant to the requirements of Section 95668(c)(4) of the California Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities regulation.

(iii) Recordkeeping: The permittee shall maintain at least 5 years of records that document the following:

(1) The records of each rod packing or seal emission flow rate measurement.

(2) For rod packing or seal measurement delays authorized pursuant to Section 95668(c)(4)(B)3 of the California Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities regulation, the records that document the date(s) and hours of operation a compressor is operated in order to demonstrate compliance with the rod packing leak concentration or emission flow rate measurement in the event that the compressor is not operating during a scheduled inspection.

(3) For rod packing or seal repair delays authorized pursuant to Section 95668(c)(4)(D)1 of the California Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities regulation, the records that provide proof that parts or equipment required to make necessary repairs have been ordered.

AIR POLLUTION CONTROL OFFICER

_____

Date

NOTES:

(a) Permit Reevaluation Due Date: December 2023.
(b) This Permit supersedes: PTO 7904-R11, PTO 15536, PTO Mod 7904-R7

Attachments

10.1 Emission Calculation Documentation
10.2 Emission Calculation Spreadsheets
10.3 Fee Calculations
10.4 IDS Database Emission Tables
10.5 Equipment List
10.6 Out of Service Equipment

10.1 Emission Calculation Documentation

This attachment contains all relevant emission calculation documentation used for the emission tables in Section 5. Refer to Section 4 of the permit for the general equations and other pertinent information. Detailed calculation spreadsheets are also attached as Attachment 10.2. The letters A-G refer to Tables 5.1-1 and 5.1-2.

Reference A - External Combustion Devices (Process Heater)

- ☞ The maximum load schedule is in units of hours

- ☞ The PUC quality- in-plant fuel gas default characteristics are:
  - ⇒ HHV = 1,105 Btu/scf. All lb/MMBtu emission factors are higher heating value based
  - ⇒ Fuel S = 80 ppmvd for all equipment (4 ppmv H_2S)

- ☞ Grace Unit permeate gas default characteristics are:
  - ⇒ HHV = 1126.1 Btu/scf, when CO_2 gas fraction is eliminated from analysis
  - ⇒ Fuel S = 239 ppmvd for all equipment

- ☞ Characteristics of 40% Grace Gas / 60% PUC gas mixture for Process Heater
  a. HHV = 0.4 * 1126.1 + 0.6*1,105 = 1113.4 Btu/scf
  b. Fuel S = 0.4 * 239 ppmvd + 0.6 * 80 = 143.6 ppm

- ☞

- ☞ For the process heater, NO_x and CO emission factors are based on Rule 342 limits (0.036 lb/MMBtu and 0.297 lb/MMBtu, respectively). ROC and PM are based on Table 1.4-2 of AP-42 (7/98).

- ☞ SOx emissions are based on mass balance techniques using the District's guideline titled "Gaseous Fuel SO_x Emission Factor (1/97)":

  SOx lbs/MMBtu (Heater treaters)=
  239 parts S/10^6 x (64lbs SOx/lb-mole) x (lb-mole/379.4 scf) x (scf/1,105 Btu) x (10^6btu/MMBtu)
  = 0.0122 lbs/ MMBtu

- ☞ Due to the use of gaseous fuel, the $PM/PM_{10}/PM_{2.5}$ ratio is assumed to 1.0.

- ☞ 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. CO_2 equivalent emission factors are calculated for CO_2, CH_4, and N_2O individually, then summed to calculate a total CO_{2e} emission factor. Annual CO_{2e} emission totals are presented in short tons.

For natural gas combustion the emission factor is:
(53.02 kg CO_2/MMbtu) (2.2046 lb/kg) = 116.89 lb CO_2/MMBtu
(0.001 kg CH_4/MMBtu) (2.2046 lb/kg)(21 lb CO_{2e}/lb CH_4) = 0.046 lb CO_{2e}/MMBtu
(0.0001 kg N_2O/MMBtu) (2.2046 lb/kg)(310 lb CO_{2e}/lb N2O) = 0.068 lb CO_{2e}/MMBtu
Total CO_{2e}/MMBtu = 116.89 + 0.046 + 0.068 = 117.00 lb CO_{2e}/MMBtu

☞ For permeate combustion, a typical stream is 40% CO_2 with a heating value of 636 Btu/scf. Therefore 1 MMBtu of permeate is 1,572.3 scf. 628.9 scf of CO_2 and 943.40 scf of combustible gas.

628.9 scf CO_2 / 379 scf per mol x 44 lb per mol = 73.02 lb CO_2/MMBtu of permeate

The adjusted CO_2 emission factor is then:

117.00 + 73.02 = 190.02 lb CO_2/MMBtu of permeate

Reference B - Combustion: Thermal Oxidizers

☞ The gaseous fuel default characteristics are:

- Fuel S = 205 ppmvd (total S) for all oxidizers;
- HHV = 1,126.1 Btu/scf. All lb/MMBtu emission factors are higher heating value-based.

☞ The annual Planned flaring heat input limit is based on the volume limit of 16,410,000 scf per month imposed by Rule 359 and the heat content assumed above.

☞ The daily limit of planned continuous flaring at each of the thermal oxidizers H-206 and H-207 is 120,000 scf/day. This limit is based on the permittee's request for this operational cap to exempt the thermal oxidizers from emission limits and source testing under Rule 359.

☞ Emission factors are provided for each of the three thermal oxidizers for *Planned – Pilot, Planned* –flaring categories. Emission factors for *Unplanned* flaring are not presented because the facility is prohibited from any unplanned flaring events. The emissions factors for all planned flaring for H-205 and the planned pilot for H-206 and H-207 are based on ATC 9473 and ATC/PTO 12839. The remaining emission factors are based on Table 1.4-1 and Table 1.4-2 of USEPA AP-42 (7/98) for all criteria pollutants (except for SO_x). All SO_x emission factors are based on mass balance techniques using the District's guideline titled "Gaseous Fuel SO_x Emission Factor (1/97)". Because these are gas-fired flares, the $PM/PM_{10}/PM_{2.5}$ ratio is assumed to 1.0.

☞ SOx lbs/MMBtu =
205 parts $S/10^6$ x (64lbs SOx/lb-mole) x (lb-mole/379.4 scf) x (scf/1126.1 Btu) x (10^6btu/MMbtu)
= <u>0.314</u> lbs/MMBtu

Reference C - Storage Tanks

- The hourly/daily/annual emissions scenario is based on the following assumptions:

  1. Maximum True vapor pressure for oil: 4.804 RVP (TVP = 3.6 psia @ 80 °F).
  2. Crude oil and the emulsion breaker HC liquid is stored in unheated tanks.
  3. Emissions occur 24 hours/day and 365 days/year for both oil and emulsion breaker.
  4. The oil throughput rate for Tanks 202 & 203 is 6500 barrels/day; for Tank 204 it is 1000 barrels/day; and the emulsion breaker HC liquid throughput for Tank 101 is 402 barrels/day.
  5. Maximum true vapor pressure for emulsion breaker HC liquid: 0.77 psia @ 73°F (RVP = 1.5 psia).
  6. Specific gravity of the (xylene-based) HC liquid is 0.92

- See Section 4.6.1 for emission factor discussion.

Reference D - Pigging Equipment

- Maximum load schedule is in units of events (e.g., once per week);

- The gas & oil launcher and receiver volumes, pressures and temperatures based on file data;

- All vapor in the launchers/receivers is blown to the hydrocarbon sump, which is connected to the VRU prior to opening the vessel to the atmosphere, the remaining vessel pressure is assumed to be no greater than 1 psig. The temperature of the remaining vapor in the vessel is a maximum of 80 °F.

- The MW_{gas} = 23 lb/lb-mol for gas ; MW_{oil} = 50 lb/lb-mol for oil.

- Average ROC weight percent is = 30.8 % for gas launchers [*Reference: CARB VOC Speciation Profile 757 for ROC/TOC ratio of 0.308*];

  Average ROC weight percent is = 56.0 % for oil launchers/receivers [*Reference: CARB VOC Speciation Profile 756 for ROC/TOC ratio of 0.560*];

- Density ρ = (pressure x MW) / (R x T), density of vapor remaining in the vessels (lbs VOC/acf)

- Site-specific pigging emission factor EF = (ρ x ROC weight %), (lb ROC/acf-event)

- ρ_{gas} = (15.7 *23) / (10.73* 540) = 0.0623 lb/cu.ft, density of THC vapor remaining in vessel = 0.0623 lb/cubic feet for gas launchers/receivers;

  EF(gas) = 0.0623 * 0.308 = 0.0192 lb of ROC/acf-event for gas launchers/receivers.

- ρ_{oil} = (15.7 *50) / (10.73* 540) = 0.1355 lb/cu.ft, density of THC vapor remaining in vessel = 0.1355 lb/cubic feet for oil launchers/receivers;

  EF(oil) = 0.1355 * 0.560 = 0.0759 lb of ROC/acf-event for oil launchers/receivers.

Reference E - Wastewater Tanks and Sump

- ☞ The maximum load schedule is in units of hours;
- ☞ See Section 4.6.2 for emission factor discussion
- ☞ Calculations are based on surface area of emissions unit as noted in the District files;
- ☞ All separator units are classified as secondary production and heavy oil service;

Reference F - Loading Racks

- ☞ The maximum load schedule is in units of hours;
- ☞ See Section 4.7.2 and 4.7.3 for emission factor discussion
- ☞ The *LPG Loading Rack* hourly/daily/annual emissions scenario is based on the following assumptions:

1. The LPG loading rate is 10 million gallons/year, occurring at a maximum rate of 10,000 gal/hr;
2. Emissions occur 6 hours/day and 167 days/year;
3. The loading type is " bottom loading"; the return vapor going to the VRU unit;

Reference G - Pipeline Components Emitting Fugitive ROCs

- ☞ The maximum load schedule is in units of hours;
- ☞ All safe-to-monitor components are credited with an 80 percent control efficiency. Unsafe-to-monitor components (as defined in Rule 331) are considered uncontrolled. Note: There are no unsafe-to-monitor components at the EOF.
- ☞ The 'component leak path' term used here differs from the Rule 331 definition of a component. A typical leak path count for a valve would be equal to four (one valve stem, a bonnet connection and two flanges).
- ☞ Leak path counts are provided by the applicant. The count was based on the final fugitive component count for ATC/PTO 12886.
- ☞ See Section 4.5.3 for emission factor discussion.

Reference H - Solvents

- Daily emissions are based on monthly value (125 gallons/month, as submitted by he permittee in its annual report) divided by 30. Hourly emissions are based on daily values divided by 8, based on daily operation for 8 hours.

Reference I - IC Engines

- 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. CO_2 equivalent emission factors are calculated for CO_2, CH_4, and N_2O individually, then summed to calculate a total CO_{2e} emission factor. Annual CO_{2e} emission totals are presented in short tons.

  For IC engines, the emission factor in lb/MMBtu heat input is converted to g/bhp-hr output based on a standard brake-specific fuel consumption.

  For diesel fuel combustion the emission factor is:
  (73.96 kg CO_2/MMBtu) (2.2046 lb/kg) = 163.05 lb CO_2/MMBtu
  (0.003 kg CH_4/MMBtu) (2.2046 lb/kg)(21 lb CO_{2e}/lb CH_4) = 0.139 lb CO_{2e}/MMBtu
  (0.0006 kg N_2O/MMBtu) (2.2046 lb/kg)(310 lb CO_{2e}/lb N2O) = 0.410 lb CO_{2e}/MMBtu
  Total CO_{2e}/MMBtu = 163.05 + 0.139 + 0.410 = 163.60 lb CO_{2e}/MMBtu

  Converted to g/hp-hr:
  (163.60 lb CO_{2e}/MMBtu)(453.6 g/lb)(7500 Btu/hp-hr)/1,000,000 = 556.58 g/hp-hr as CO_{2e}

Reference J – Hazardous Air Pollutants

Table 10.1-1
Ellwood Onshore Facility: PTO 7904-R11
HAP Emission Factor Basis

HAP Emission Factor Basis	
Combustion - External	USEPA AP-42. Table 1.4-3 (7/98). Emission factors for Speciated Organic Compounds from Natural Gas Combustion
IC Engines - Diesel and gasoline Powered (all)	VCAPCD (5/2001). AB2588 Diesel Internal Combustion Toxic Emission Factors.
Pigging - Gas	CARB. Speciation Manual. Second Edition (9/91). Profile Number 757 - Oil & Gas Production Fugitives - Gas Service. Corrected to a lb HAP/lb/ROC basis.
Pigging - Oil	CARB. Speciation Manual. Second Edition (9/91). Profile Number 756 - Oil & Gas Production Fugitives - Liquid Service. Corrected to a lb HAP/lb/ROC basis.
Fugitives - Gas Components	CARB. Speciation Manual. Second Edition (9/91). Profile Number 757 - Oil & Gas Production Fugitives - Gas Service. Corrected to a lb HAP/lb/ROC basis.
Fugitives - Oil Components	CARB. Speciation Manual. Second Edition (9/91). Profile Number 756 - Oil & Gas Production Fugitives - Liquid Service. Corrected to a lb HAP/lb/ROC basis.
Flares	USEPA AP-42. Table 1.4-3 (7/98). Emission factors for Speciated Organic Compounds from Natural Gas Combustion
Tanks/Sumps/Separators	CARB. Speciation Manual. Second Edition (9/91). Profile Number 297 - Crude Oil Evaporation. Corrected to a lb HAP/lb/ROC basis.
Loading Racks	Venoco AB2588 Air Toxics Emission Inventory Report for the Ellwood Stationary SOurce for Year 2008. Corrected to a lb HAP/1000 gallon basis.
Solvents	APCD: Solvents assumed to contain 5% benzene, 5% toluene, 5% xylene

10.2 Emission Calculation Spreadsheets

Table 10.2-1 -> Minimum H-205 Incineration Temperatures

Table 10.2-2 -> Storage Tank Calculations

Table 10.2-1

Calculation of Minimum H-205 Incineration Temperatures

Calculation of T99

Reference: Air Pollution Control: A Design Approach, Cooper/Alley

T_{99} = 577 - 10W1 + 110.2W2 + 67.1W3 + 72.6W4 + 0.586W5 - 23.4W6- 430.9W7 + 85.2W8 - 82.2W9 + 65.5W10 - 76.1W11

ATC 9473 **HC Species of Concern: Benzene**

Variable	Description	Variable Value	Reference
W1	# of C atoms	6	
W2	Aromatic (0=no;1=yes)	1	
W3	C= Bond (0=no;1=yes)	0	
W4	# of N atoms	0	
W5	autoignition temp, oF	1044	Condensed Chemical Dictionary,
W6	# of O atoms	0	1981
W7	# of sulfur atoms	0	
W8	H/C atom ratio	1	
W9	allyl cmpd. (0=no;1=yes)	0	
W10	C=&CL interaction (0=no;1=yes)	0	
W11	Ln(of incinerator residence time, sec)	-0.48	
	Residence Time (sec.)	0.62	ATC 9473-06
T_{99} (F) +/- 20		1361	data

ATC 9473 **HC Species of Concern: Ethyl Mercaptan**

Variable	Description	Variable Value	Reference
W1	# of C atoms	2	
W2	Aromatic (0=no;1=yes)	0	
W3	C= Bond (0=no;1=yes)	0	
W4	# of N atoms	0	
W5	autoignition temp, oF	570	Condensed Chemical Dictionary,
W6	# of O atoms	0	1981
W7	# of sulfur atoms	1	
W8	H/C atom ratio	2.5	
W9	allyl cmpd. (0=no;1=yes)	0	
W10	C=&CL interaction (0=no;1=yes)	0	
W11	Ln(of incinerator residence time, sec)	-0.48	
	Residence Time (sec.)	0.62	
T_{99} (F) +/- 20		709	

Attachment 10.2-2

Storage Tank Calculations

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

Basic Input Data	
liquid {1:G13, 2:G10, 3:G7, 4:C, 5:JP, 6:ker, 7:D2, 8:D6} =	4
liquid TVP =	2.8
if TVP is entered, enter TVP temperature (°F) =	64
tank heated {yes, no} =	no
if tank is heated, enter temp (°F) =	
vapor recovery system present? {yes, no} =	yes
is this a wash tank? {yes, no} =	no
will flashing losses occur in this tank? {yes, no} =	no
breather vent pressure setting range (psi) (def = 0.06):	0.08

Attachment:	10.2-2(a)
Permit:	PTO 7904-R12
Date:	04/13/21
Tank:	Surge:TK-202
Name:	Ellwood Onshore Facility
Filename:	(Tank PTO4-Lib)
District:	Santa Barbara
Version:	Tank-2b.xls

PRINT

Tank Data		
diameter (feet) =		21.83
capacity (enter barrels in first col, gals will compute) =	2,000	84,000
conical or dome roof? {c, d} =		d
shell height (feet) =		30
roof height (def = 1):		1
ave liq height (feet):		15
color {1: Spec Al, 2:Dlft Al, 3:Lte, 4:Med, 5:Rd, 6:Wh} =		4
condition {1: Good, 2: Poor} =		1
upstream pressure (psig) (def = 0 when no flashing occurs):		0

Liquid Data	A	B
maximum daily throughput (bopd) =		6,500
Ann thruput (gal): (enter value in Column A if not max PTE):		9.985E+07
RVP (psia):		4.60377
°API gravity =		7.1

Computed Values		
roof outage [1] (feet):		0.5
vapor space volume [2] (cubic feet):		5,801
turnovers [3]:		1186.25
turnover factor [4]:		0.19
paint factor [5]:		0.68
surface temperatures (°R, °F)		
average [6]:	527.2	67.2
maximum [7]:	539	79
minimum [8]:	515.4	55.4
product factor [9]:		0.75
diurnal vapor ranges		
temperature [10] (fahrenheit degrees):		47.2
vapor pressure [11] (psia):		1.36788
molecular weight [12] (lb/lb-mol):		50
TVP [13] (psia) [adjusted for ave liquid surface temp]:		2.98089
vapor density [14] (lb/cubic foot):		0.026345
vapor expansion factor [15]:		0.201
vapor saturation factor [16]:		0.289956
vented vapor volume (scf/bbl):		8
fraction ROG - flashing losses:		0.308
fraction ROG - evaporative losses:		0.885

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

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

Adjusted TVP Matrix	
liquid	TVP value
gas rvp 13	7.908
gas rvp 10	5.56
gas rvp 7	3.932
crude oil	2.98089
JP -4	1.516
jet kerosene	0.0103
fuel oil 2	0.009488
fuel oil 6	0.0000472

RVP Matrix	
liquid	RVP value
gas rvp 13	13
gas rvp 10	10
gas rvp 7	7
crude oil	4.603769939
JP -4	2.7
jet kerosene	0.029
fuel oil 2	0.022
fuel oil 6	0.00019

Long-Term
VRU_Eff = 95.00%

Short-Term
VRU_Eff = 95.00%

Emissions	Uncontrolled ROC emissions			Controlled ROC emissions		
	lb/hr	lb/day	ton/year	lb/hr	lb/day	ton/year
breathing loss [17] =	0.33	7.88	1.44	0.02	0.39	0.07
working loss [18] =	5.09	122.18	22.30	0.25	6.11	1.11
flashing loss [19] =	0.00	0.00	0.00	0.00	0.00	0.00
TOTALS =	5.42	130.06	23.74	0.27	6.50	1.19

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

Basic Input Data	
liquid (1:G13, 2:G10, 3:G7, 4:C, 5:JP, 6:ker, 7:O2, 8:O6) =	4
liquid TVP =	2.8
if TVP is entered, enter TVP temperature (°F) =	64
tank heated (yes, no) =	no
if tank is heated, enter temp (°F) =	
vapor recovery system present? (yes, no) =	yes
is this a wash tank? (yes, no) =	no
will flashing losses occur in this tank? (yes, no) =	no
breather vent pressure setting range (psi) (def = 0.06)	0.06

Tank Data		
diameter (feet) =		21.83
capacity (enter barrels in first col, gals will compute) =	2,000	84,000
conical or dome roof? (c, d) =		d
shell height (feet) =		30
roof height (def = 1):		1
ave liq height (feet):		15
color (1:Spec Al, 2:Dif Al, 3:Lite, 4:Med, 5:Rd, 6:Wh) =		4
condition (1: Good, 2: Poor) =		1
upstream pressure (psig) (def = 0 when no flashing occurs):		0

Liquid Data	A	B
maximum daily throughput (bopd) =		6,500
Ann thruput (gal): (enter value in Column A if not max PTE)		9.98E+07
RVP (psia):		4.60377
°API gravity =		7.1

Computed Values		
roof outage [1] (feet):		0.5
vapor space volume [2] (cubic feet):		5,801
turnovers [3]:		1186.25
turnover factor [4]:		0.19
paint factor [5]:		0.68
surface temperatures (°R, °F)		
average [6]:	527.2	67.2
maximum [7]:	539	79
minimum [8]:	515.4	55.4
product factor [9]:		0.75
diurnal vapor ranges		
temperature [10] (fahrenheit degrees):		47.2
vapor pressure [11] (psia):		1.36788
molecular weight [12] (lb/lb-mol):		50
TVP [13] (psia) [adjusted for ave liquid surface temp]:		2.98089
vapor density [14] (lb/cubic foot):		0.026345
vapor expansion factor [15]:		0.201
vapor saturation factor [16]:		0.289956
vented vapor volume (scf/bbl):		8
fraction ROG - flashing losses:		0.308
fraction ROG - evaporative losses:		0.885

Attachment: 10.2-2(b)
Permit: PTO 7904
Date: 04/13/21
Tank: Surge:TK203
Name: Ellwood Onshore Facility
Filename: ...\Tanks (7904).xls
District: Santa Barbara
Version: Tank-2b.xls

PRINT

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

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

Adjusted TVP Matrix	
liquid	TVP value
gas rvp 13	7.908
gas rvp 10	5.56
gas rvp 7	3.932
crude oil	2.98089
JP -4	1.516
jet kerosene	0.0103
fuel oil 2	0.009486
fuel oil 6	0.0000472

RVP Matrix	
liquid	RVP value
gas rvp 13	13
gas rvp 10	10
gas rvp 7	7
crude oil	4.6037699
JP -4	2.7
jet kerosene	0.029
fuel oil 2	0.022
fuel oil 6	0.00019

Long-Term
VRU_Eff = 95.00%

Short-Term
VRU_Eff = 95.00%

Emissions	Uncontrolled ROC emissions			Controlled ROC emissions		
	lb/hr	lb/day	ton/year	lb/hr	lb/day	ton/year
breathing loss [17] =	0.33	7.88	1.44	0.02	0.39	0.07
working loss [18] =	5.09	122.18	22.30	0.25	6.11	1.11
flashing loss [19] =	0.00	0.00	0.00	0.00	0.00	0.00
TOTALS =	5.42	130.06	23.74	0.27	6.50	1.19

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

Basic Input Data	
liquid (1:G13, 2:G10, 3:G7, 4:C, 5:JP, 6:ker, 7:O2, 8:O6) =	4
liquid TVP =	2.8
if TVP is entered, enter TVP temperature (°F) =	64
tank heated (yes, no) =	no
if tank is heated, enter temp (°F) =	
vapor recovery system present? (yes, no) =	yes
is this a wash tank? (yes, no) =	no
will flashing losses occur in this tank? (yes, no) =	no
breather vent pressure setting range (psi) (def = 0.06):	0.06

Tank Data		
diameter (feet) =		26.75
capacity (enter barrels in first col. gals will compute) =	2,000	84,000
conical or dome roof? (c, d) =		d
shell height (feet) =		30
roof height (def = 1):		1
ave liq height (feet):		15
color (1:Spec Al, 2:Dlf Al, 3:Lite, 4:Med, 5:Rd, 6:Wh) =		4
condition (1: Good, 2: Poor) =		1
upstream pressure (psig) (def = 0 when no flashing occurs):		0

Liquid Data	A	B
maximum daily throughput (bopd) =		1,000
Ann thruput (gal): (enter value in Column A if not max PTE)		1.533E+07
RVP (psia):		4.60377
°API gravity =		71

Computed Values		
roof outage [1] (feet):		0.5
vapor space volume [2] (cubic feet):		8,711
turnovers [3]:		182.5
turnover factor [4]:		0.33
paint factor [5]:		0.68
surface temperatures (°R, °F)		
average [6]:	527.2	67.2
maximum [7]:	539	79
minimum [8]:	515.4	55.4
product factor [9]:		0.75
diurnal vapor ranges		
temperature [10] (fahrenheit degrees):		47.2
vapor pressure [11] (psia):		1.36788
molecular weight [12] (lb/lb-mol):		50
TVP [13] (psia) [adjusted for ave liquid surface temp]:		2.98089
vapor density [14] (lb/cubic foot):		0.026345
vapor expansion factor [15]:		0.201
vapor saturation factor [16]:		0.269956
vented vapor volume (sct/bbl):		8
fraction ROG - flashing losses:		0.308
fraction ROG - evaporative losses:		0.885

Attachment: 10.2-2(c)
Permit: PTO 7904-R12
Date: 04/13/21
Tank: Reject: TK-204
Name: Ellwood Onshore Facility
Filename: \Tanks (7904)\tk
District: Santa Barbara
Version: Tank-2b.xls

PRINT

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

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

Adjusted TVP Matrix	
liquid	TVP value
gas rvp 13	7.908
gas rvp 10	5.56
gas rvp 7	3.932
crude oil	2.98089
JP -4	1.516
jet kerosene	0.0103
fuel oil 2	0.009488
fuel oil 6	0.0000472

RVP Matrix	
liquid	RVP value
gas rvp 13	13
gas rvp 10	10
gas rvp 7	7
crude oil	4.603769939
JP -4	2.7
jet kerosene	0.029
fuel oil 2	0.022
fuel oil 6	0.00019

Long-Term
VRU_Eff = 95.00%

Short-Term
VRU_Eff = 95.00%

Emissions	Uncontrolled ROC emissions			Controlled ROC emissions		
	lb/hr	lb/day	ton/year	lb/hr	lb/day	ton/year
breathing loss [17] =	0.49	11.84	2.16	0.02	0.59	0.11
working loss [18] =	1.36	32.65	5.96	0.07	1.63	0.30
flashing loss [19] =	0.00	0.00	0.00	0.00	0.00	0.00
TOTALS =	**1.85**	**44.48**	**8.12**	**0.09**	**2.22**	**0.41**

10.3 Fee Calculations

All permit fees for the reevaluation of the Ellwood Onshore Facility are based on the fee schedules of Rule 210. The District has calculated these fees based on the CPI adjusted Rule 210 fee schedules in effect and on current equipment lists.

All work performed with respect to implementing the requirements of the Part 70 Operating Permit program are assessed on a cost reimbursement basis pursuant to District Rule 210.

air pollution control district
SANTA BARBARA COUNTY

FEE STATEMENT

PT-70/Reeval No. 07904 - R12 FID: 00028 Ellwood
Onshore Facility / SSID: 01063

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
000283	Crude Oil Storage Tank:Shipping/Stock	A6	84.000	4.22	Per 1000 gallons	No	1	1.000	354.48	0.00	0.00	354.48
006477	Crude Oil Storage Tank: Surge	A6	84.000	4.22	Per 1000 gallons	No	1	1.000	354.48	0.00	0.00	354.48
000284	Crude Oil Storage Tank: Reject	A6	84.000	4.22	Per 1000 gallons	No	1	1.000	354.48	0.00	0.00	354.48
009318	Recycle Oil Transfer Pump	A2	5.000	38.13	Per total rated hp	No	1	1.000	190.65	0.00	0.00	190.65
009435	Heater Treater Drip Pot	A6	1.000	4.22	Per 1000 gallons	Min	1	1.000	73.07	0.00	0.00	73.07
009193	Motor: Sludge Transfer Pump	A2	20.000	38.13	Per total rated hp	No	1	1.000	762.60	0.00	0.00	762.60
009198	Oil Pipeline	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
009429	Iron Sponge Vessels	A1.a	1.000	73.54	Per equipment	No	3	1.000	220.62	0.00	0.00	220.62
009200	Oil Pig Receiver	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
009324	Process Fluid Surge Tank	A6	1.000	4.22	Per 1000 gallons	Min	1	1.000	73.07	0.00	0.00	73.07
009325	Process Fluid Pumps	A2	30.000	38.13	Per total rated hp	No	2	1.000	2,287.80	0.00	0.00	2,287.80
000285	Process Heater	A3	25.000	551.72	Per 1 million Btu input	Max	1	1.000	7,382.27	0.00	0.00	7,382.27
009458	Motor: Air Blower for H-204 unit	A2	30.000	38.13	Per total rated hp	No	1	1.000	1,143.90	0.00	0.00	1,143.90
009326	Process Heater	A4	300.000	7.41	Per KVA rating in 10's	No	1	1.000	2,223.00	0.00	0.00	2,223.00
009327	Process Hydrocarbon Sump	A6	1.000	4.22	Per 1000 gallons	Min	1	1.000	73.07	0.00	0.00	73.07
009328	Process Hydrocarbon Sump Pump	A2	10.000	38.13	Per total rated hp	No	1	1.000	381.30	0.00	0.00	381.30
009203	Chemical Tank #1	A6	1.000	4.22	Per 1000 gallons	Min	1	1.000	73.07	0.00	0.00	73.07
009204	Chemical tank #2	A6	1.000	4.22	Per 1000 gallons	Min	1	1.000	73.07	0.00	0.00	73.07
009205	Chemical Tank #3	A6	1.000	4.22	Per 1000 gallons	Min	1	1.000	73.07	0.00	0.00	73.07
009192	Motor: Chemical Tanks	A2	0.330	38.13	Per total rated hp	Min	2	1.000	146.14	0.00	0.00	146.14
009195	Chemical Injection Pump	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
107339	Meth. Tote Pump	A2	1.000	38.13	Per total rated hp	Min	1	1.000	73.07	0.00	0.00	73.07
106027	Reject Oil Pump	A2	20.000	38.13	Per total rated hp	No	1	1.000	762.60	0.00	0.00	762.60
106029	Oil Injection Pump	A2	250.000	38.13	Per total rated hp	Max	1	1.000	7,382.27	0.00	0.00	7,382.27

009320	LACT Unit 1: Charge Pump	A2	60.000	38.13	Per total rated hp	No	1	1.000	2,287.80	0.00	0.00	2,287.80
009194	H2S Strippers	A1.a	1.000	73.54	Per equipment	No	2	1.000	147.08	0.00	0.00	147.08
009323	LACT Unit # 2 Sample Pump	A2	1.500	38.13	Per total rated hp	Min	1	1.000	73.07	0.00	0.00	73.07
009322	LACT Unit 2 Charge Pump	A2	30.000	38.13	Per total rated hp	No	1	1.000	1,143.90	0.00	0.00	1,143.90
009514	Glycol Storage Tank	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
009330	Crude Sump	A6	1.000	4.22	Per 1000 gallons	Min	1	1.000	73.07	0.00	0.00	73.07
009331	Crude Sump Pump	A2	10.000	38.13	Per total rated hp	No	1	1.000	381.30	0.00	0.00	381.30
100917	Caustic Tank	A6	5.000	4.22	Per 1000 gallons	Min	1	1.000	73.07	0.00	0.00	73.07
000288	Thermal Oxidizer H-205	A3	140.000	551.72	Per 1 million Btu input	Max	1	1.000	7,382.27	0.00	0.00	7,382.27
000287	Thermal Oxidizer H-206	A3	220.000	551.72	Per 1 million Btu input	Max	1	1.000	7,382.27	0.00	0.00	7,382.27
000286	Thermal Oxidizer H-207	A3	9.500	551.72	Per 1 million Btu input	No	1	1.000	5,241.34	0.00	0.00	5,241.34
009412	Relief Scrubber	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
009414	LO-Cat Oxidizer Blower	A2	200.000	38.13	Per total rated hp	Max	1	1.000	7,382.27	0.00	0.00	7,382.27
009416	Motor: Blower	A2	25.000	38.13	Per total rated hp	No	1	1.000	953.25	0.00	0.00	953.25
009199	Utility [Oil/Water Emulsion or Gas] Pipeline	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
106004	Waste Water Tank	A6	126.000	4.22	Per 1000 gallons	No	1	1.000	531.72	0.00	0.00	531.72
106091	Motor-Driven Firewater Pump	A2	200.000	38.13	Per total rated hp	Max	1	1.000	7,382.27	0.00	0.00	7,382.27
009401	LPG/NGL Stabilizer	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
009402	Motor: LPG/NGL Loading Pumps	A2	20.000	38.13	Per total rated hp	No	2	1.000	1,525.20	0.00	0.00	1,525.20
008003	Loading Rack	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
009459	NGL Storage Tank	A6	25.000	4.22	Per 1000 gallons	No	1	1.000	105.50	0.00	0.00	105.50
009460	LPG Storage Tank	A6	25.000	4.22	Per 1000 gallons	No	1	1.000	105.50	0.00	0.00	105.50
009345	LO-Cat Gas/Filter Separators	A1.a	1.000	73.54	Per equipment	No	3	1.000	220.62	0.00	0.00	220.62
009346	LO-Cat Drum Separators	A1.a	1.000	73.54	Per equipment	No	2	1.000	147.08	0.00	0.00	147.08
009347	Gas/Solution Eductors	A1.a	1.000	73.54	Per equipment	No	8	1.000	588.32	0.00	0.00	588.32
009348	LO-Cat Wash Drum	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
009349	LO-Cat Flash Drum	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
009350	LO-Cat Knockout Drum	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
009351	LO-Cat Reaction Tank	A6	126.000	4.22	Per 1000 gallons	No	1	1.000	531.72	0.00	0.00	531.72
106025	LO-Cat Oxidizer Tanks	A6	126.000	4.22	Per 1000 gallons	No	2	1.000	1,063.44	0.00	0.00	1,063.44
009352	LO-Cat Hoffman Air Blowers	A2	300.000	38.13	Per total rated hp	Max	2	1.000	14,764.54	0.00	0.00	14,764.54
009353	Oxidizer Air Cooler	A2	10.000	38.13	Per total rated hp	No	1	1.000	381.30	0.00	0.00	381.30

009450	LO-Cat Water Storage Tank	A6	1.000	4.22	Per 1000 gallons	Min	1	1.000	73.07	0.00	0.00	73.07
009358	LO-Cat Makeup Tank Mixer	A2	0.500	38.13	Per total rated hp	Min	1	1.000	73.07	0.00	0.00	73.07
009354	Sulfur Slurry Pits	A6	42.000	4.22	Per 1000 gallons	No	2	1.000	354.48	0.00	0.00	354.48
009355	Sulfur Slurry Pit Agitators	A2	15.000	38.13	Per total rated hp	No	4	1.000	2,287.80	0.00	0.00	2,287.80
009356	Balance Tank	A6	84.000	4.22	Per 1000 gallons	No	1	1.000	354.48	0.00	0.00	354.48
009361	LO-Cat Sulfur Loading Tank	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
009362	Tank Mixers	A1.a	1.000	73.54	Per equipment	No	2	1.000	147.08	0.00	0.00	147.08
009363	LO-Cat Sulfur Slurry Pumps	A2	15.000	38.13	Per total rated hp	No	2	1.000	1,143.90	0.00	0.00	1,143.90
009359	Chemical (Lo-Cat Liquor 310M) Storage Tank	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
009360	Chemical Tank Pumps	A2	0.250	38.13	Per total rated hp	Min	3	1.000	219.21	0.00	0.00	219.21
009364	LO-Cat Caustic Tank	A6	5.000	4.22	Per 1000 gallons	Min	1	1.000	73.07	0.00	0.00	73.07
009365	LO-Cat Stretford Solution Circulation Pumps	A2	600.000	38.13	Per total rated hp	Max	2	1.000	14,764.54	0.00	0.00	14,764.54
009462	Diesel Pump	A2	0.250	38.13	Per total rated hp	Min	1	1.000	73.07	0.00	0.00	73.07
009366	LO-Cat Sump Pump	A2	2.000	38.13	Per total rated hp	No	1	1.000	76.26	0.00	0.00	76.26
009367	LO-Cat Chelate Chemical Tank	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
009445	LO-Cat Sump	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
106034	LO-Cat Reaction Tank Mixer	A2	20.000	38.13	Per total rated hp	No	1	1.000	762.60	0.00	0.00	762.60
106035	LO-Cat Drum Injection Blowers	A2	100.000	38.13	Per total rated hp	No	2	1.000	7,626.00	0.00	0.00	7,626.00
009477	Motor: Pump	A2	200.000	38.13	Per total rated hp	Max	1	1.000	7,382.27	0.00	0.00	7,382.27
106099	Permeate Tubes - first stage skid - Bank B	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
009399	Permeate Tubes - first stage skid - Bank A	A1.a	1.000	73.54	Per equipment	No	4	1.000	294.16	0.00	0.00	294.16
009397	Coalescing Filter	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
009398	Guard Bed	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
106340	Permeate Tubes - first stage skid - Bank C	A1.a	1.000	73.54	Per equipment	No	4	1.000	294.16	0.00	0.00	294.16
009335	Gas Pipeline	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
009336	Seep Pipeline	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
009337	Gas Pig Receivers	A1.a	1.000	73.54	Per equipment	No	3	1.000	220.62	0.00	0.00	220.62
009338	Inlet Gas Scrubber	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
009342	"Buy-back" Gas Handling System	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
009343	Sales Gas Handling System	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
009372	Sales Gas Compressors	A2	600.000	38.13	Per total rated hp	Max	2	1.000	14,764.54	0.00	0.00	14,764.54
009434	Motor: Oil Pumps	A2	1.000	38.13	Per total rated hp	Min	2	1.000	146.14	0.00	0.00	146.14
009442	Lube Oil Pump	A2	3.000	38.13	Per total rated hp	No	1	1.000	114.39	0.00	0.00	114.39
009446	Trabon Lube Pump	A2	3.000	38.13	Per total rated hp	No	1	1.000	114.39	0.00	0.00	114.39
009451	First Stage Suction Scrubber	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54

009443	Lube Oil Pump	A2	5.000	38.13	Per total rated hp	No	1	1.000	190.65	0.00	0.00	190.65
009370	Suction Scrubbers	A1.a	1.000	73.54	Per equipment	No	3	1.000	220.62	0.00	0.00	220.62
009444	Lube Oil Pump	A2	5.000	38.13	Per total rated hp	No	1	1.000	190.65	0.00	0.00	190.65
009373	Second Stage Scrubbers	A1.a	1.000	73.54	Per equipment	No	2	1.000	147.08	0.00	0.00	147.08
009371	Second Stage Discharge Scrubber	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
009374	Third Stage Discharge Scrubber	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
009369	Sales Gas Compressor	A2	4500.000	38.13	Per total rated hp	Max	1	1.000	7,382.27	0.00	0.00	7,382.27
009380	Jacket Water Surge Tank	A6	1.000	4.22	Per 1000 gallons	Min	1	1.000	73.07	0.00	0.00	73.07
009376	Jacket Water Pumps	A2	2.000	38.13	Per total rated hp	No	3	1.000	228.78	0.00	0.00	228.78
009381	Chemicals Tank	A6	1.000	4.22	Per 1000 gallons	Min	1	1.000	73.07	0.00	0.00	73.07
009377	Lube Oil Tank Pump	A2	0.330	38.13	Per total rated hp	Min	1	1.000	73.07	0.00	0.00	73.07
009375	Discharge Cooler Exchangers	A2	10.000	38.13	Per total rated hp	No	2	1.000	762.60	0.00	0.00	762.60
009378	Separators	A1.a	1.000	73.54	Per equipment	No	2	1.000	147.08	0.00	0.00	147.08
009379	Hybon Scrubber	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
009389	Glycol Separator	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
009390	Glycol Regenerator	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
009391	Glycol Flash Vessel	A6	0.100	4.22	Per 1000 gallons	Min	1	1.000	73.07	0.00	0.00	73.07
009392	Glycol Pumps	A1.a	1.000	73.54	Per equipment	No	3	1.000	220.62	0.00	0.00	220.62
009393	Vapor Glycol Filter	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
009394	Glycol Charcoal Filters	A1.a	1.000	73.54	Per equipment	No	2	1.000	147.08	0.00	0.00	147.08
009395	Glycol Drip Tank	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
009463	Glycol Pump	A2	0.250	38.13	Per total rated hp	Min	1	1.000	73.07	0.00	0.00	73.07
008006	IC Engine: Emergency Fire Water Pump	A3	2.044	551.72	Per 1 million Btu input	No	1	1.000	1,127.72	0.00	0.00	1,127.72
394946	IC Engine: Backup Emergency Generator	A3	2.237	551.72	Per 1 million Btu input	No	1	1.000	1,234.20	0.00	0.00	1,234.20
009383	York Refrigeration Compressor	A2	1750.000	38.13	Per total rated hp	Max	1	1.000	7,382.27	0.00	0.00	7,382.27
009384	Float Chamber Vessel	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
009385	York Jacket Water Pumps	A2	10.000	38.13	Per total rated hp	No	2	1.000	762.60	0.00	0.00	762.60
009386	Jacket Water Exchanger Fans	A2	10.000	38.13	Per total rated hp	No	2	1.000	762.60	0.00	0.00	762.60
009457	York Shutdown Liquid Off Receiver	A6	1.000	4.22	Per 1000 gallons	Min	1	1.000	73.07	0.00	0.00	73.07
106041	York Unit Oil Recovery Scrubber	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
111633	Utility Pig Receiver	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
111634	Gas Pig Receiver	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
009404	First Stage Suction Scrubber	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
009405	Second Stage Suction Scrubber	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
009406	VRU Water Jacket Pumps	A2	10.000	38.13	Per total rated hp	No	2	1.000	762.60	0.00	0.00	762.60

009408	First Stage VRS Compressors	A2	75.000	38.13	Per total rated hp	No	2	1.000	5,719.50	0.00	0.00	5,719.50
009409	Second Stage VRS Compressors	A2	200.000	38.13	Per total rated hp	Max	2	1.000	14,764.54	0.00	0.00	14,764.54
009410	Blanket Gas System	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
100918	Trailer	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
106017	Carbon canister	A1.a	1.000	73.54	Per equipment	No	1	1.000	73.54	0.00	0.00	73.54
009420	Methanol Storage Tanks	A6	0.550	4.22	Per 1000 gallons	Min	4	1.000	292.28	0.00	0.00	292.28
009421	Methanol Injection Pumps	A2	0.250	38.13	Per total rated hp	Min	2	1.000	146.14	0.00	0.00	146.14
009424	Fume Hood	A2	0.330	38.13	Per total rated hp	Min	1	1.000	73.07	0.00	0.00	73.07
009430	Sump Pit	A6	6.090	4.22	Per 1000 gallons	Min	1	1.000	73.07	0.00	0.00	73.07
009447	Chemical Transfer Pump	A2	3.000	38.13	Per total rated hp	No	1	1.000	114.39	0.00	0.00	114.39
	Device Fee Sub-Totals =								**$181,917.70**	**$0.00**	**$0.00**	
	Device Fee Total =											**$181,917.70**

Permit Fee

Fee Based on Devices **$181,917.70**

Fee Statement Grand Total = $181,917

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 Emissions Tables

PERMIT POTENTIAL TO EMIT

	NO_x	ROC	CO	SO_x	PM	$PM_{2.5/10}$
lb/day	61.34	492.49	2.77.71	48.99	16.89	16.89
lb/hr						
TPQ						
TPY	8.44	89.35	44.84	7.33	2.319	2.31

FACILITY POTENTIAL TO EMIT

	NO_x	ROC	CO	SO_x	PM	PM_{10}
lb/day	61.34	492.49	277.71	48.99	16.89	16.89
lb/hr						
TPQ						
TPY	8.44	89.35	44.84	7.33	2.319	2.31

STATIONARY SOURCE POTENTIAL TO EMIT

	NO_x	ROC	CO	SO_x	PM	$PM_{2.5/10}$
lb/day	1055.64	924.15	3569.25	59.16	149.34	63.15
lb/hr						
TPQ						
TPY	114.96	155.37	148.66	10.16	8.72	8.60

Notes:
(1) Emissions in these tables are from IDS.
(2) Because of rounding, values in these tables shown as 0.00 are less than 0.005, but greater than zero

10.5 Equipment List

Tuesday, April 13, 2021
Santa Barbara County Air Pollution Control District – Equipment List

PT-70/Reeval 07904 R12 / FID: 00028 Ellwood Onshore Facility / SSID: 01063

A PERMITTED EQUIPMENT

1 Crude Oil Storage System

1.1 Crude Oil Storage Tank: Shipping/Stock

Device ID #	**000283**	***Device Name***	**Crude Oil Storage Tank:Shipping/Stock**
Rated Heat Input		*Physical Size*	2000.00 BBL
Manufacturer		*Operator ID*	TK-202
Model		*Serial Number*	
Location Note			
Device Description	Shipping Tank dia. 30', height: 16.0', volume 2000 barrels. Connected to vapor recovery.		

1.2 Crude Oil Storage Tank: Surge

Device ID #	**006477**	***Device Name***	**Crude Oil Storage Tank: Surge**
Rated Heat Input		*Physical Size*	2000.00 BBL
Manufacturer		*Operator ID*	TK-203
Model		*Serial Number*	
Location Note			
Device Description	Surge Tank dia. 30', height 16.0', volume 2000 barrels. Connected to vapor recovery (surge).		

1.3 Crude Oil Storage Tank: Reject

Device ID #	**000284**	***Device Name***	**Crude Oil Storage Tank: Reject**
Rated Heat Input		*Physical Size*	2000.00 BBL
Manufacturer		*Operator ID*	TK-204
Model		*Serial Number*	
Location Note			
Device Description	This is a Reject Tank dia. 30', height 16.0', volume 2000 barrels. Connected to vapor recovery.		

1.4 Recycle Oil Transfer Pump

Device ID #	**009318**	***Device Name***	**Recycle Oil Transfer Pump**
Rated Heat Input		*Physical Size*	5.00 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	P-238
Model		*Serial Number*	
Location Note			
Device Description	Electric motor horsepower rating: 5.0. Serves TK-202 and TK-204.		

2 Heater Treater System

2.1 Heater Treater Drip Pot

Device ID #	**009435**	***Device Name***	**Heater Treater Drip Pot**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-239
Model		*Serial Number*	
Location Note			
Device Description			

2.2 Motor: Sludge Transfer Pump

Device ID #	**009193**	***Device Name***	**Motor: Sludge Transfer Pump**
Rated Heat Input		*Physical Size*	20.00 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	P-251
Model		*Serial Number*	
Location Note			
Device Description	Associated with H-202, used to remove sludge, powered by 20 hp motor. OUT OF SERVICE - Reeval 7904 - R8		

3 Oil Pipeline

Device ID #	**009198**	***Device Name***	**Oil Pipeline**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	6” PO-454-HC-D
Model		*Serial Number*	
Location Note			
Device Description	diameter: 6.0"		

4 Iron Sponge Vessels

Device ID #	**009429**	***Device Name***	**Iron Sponge Vessels**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-114, -115, -116
Model		*Serial Number*	
Location Note			
Device Description	Dia. (each): 6.0', height (each): 20.0'; device ID #s: V- 114 & V- 115 only (iron sponge (or equivalent)); V-116 only (Sulfa-check (or equivalent) system) - V-114 is currently OUT OF SERVICE - Reeval 7904 R8		

5 Oil Pig Receiver

Device ID #	**009200**	***Device Name***	**Oil Pig Receiver**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Interfacing Holly		

6 Crude Oil Transfer Pumps

Device ID #	**009201**	***Device Name***	**Crude Oil Transfer Pumps**
Rated Heat Input		*Physical Size*	25.00 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	P-217A and P-217B
Model		*Serial Number*	
Location Note			
Device Description	Two (2) dry crude oil/crude oil emulsion pumps powered by electric motor; horsepower rating (each) 25.0 hp OUT OF SERVICE - Reeval 7904 R8.		

7 Process Oil Heating System

7.1 Process Fluid Surge Tank

Device ID #	**009324**	***Device Name***	**Process Fluid Surge Tank**
Rated Heat Input		*Physical Size*	80.00 BBL
Manufacturer		*Operator ID*	V-213
Model		*Serial Number*	
Location Note			
Device Description	Tank dia. 6.0', height 16.0', volume 80.0 barrels. Connected to vapor recovery.		

7.2 Process Fluid Pumps

Device ID #	**009325**	***Device Name***	**Process Fluid Pumps**
Rated Heat Input		*Physical Size*	30.00 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	P-209A & P-209B
Model		*Serial Number*	
Location Note			
Device Description	Pumps, each powered by electric motor with rating (each) = 30.0 hp. Serves V-213.		

7.3 Process Heater

Device ID #	**000285**	***Device Name***	**Process Heater**
Rated Heat Input	25.000 MMBtu/Hour	*Physical Size*	25.00 MMBtu/Hour
Manufacturer	Uniflux	*Operator ID*	H-204
Model	25MM	*Serial Number*	4035
Location Note			
Device Description	Emission control equipment for flue gas recirculation, flue gas oxygen trim control, flue gas recirculation burners (when necessary). Primary fuels: PUC-quality natural gas & permeate waste gas, backup fuel: PUC-quality natural gas, use: heat Therminol (heat transfer media)		

7.4 Motor: Air Blower for H-204 unit

Device ID #	**009458**	***Device Name***	**Motor: Air Blower for H-204 unit**
Rated Heat Input		*Physical Size*	30.00 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	BL-730
Model		*Serial Number*	
Location Note			
Device Description			

7.5 Process Heater

Device ID #	**009326**	***Device Name***	**Process Heater**
Rated Heat Input		*Physical Size*	300.00 Kilowatts
Manufacturer		*Operator ID*	H-208
Model		*Serial Number*	
Location Note			
Device Description	Electric, 300 kW rating, acts as stand-by for Therminol Heater H-204		

7.6 Process Hydrocarbon Sump

Device ID #	**009327**	***Device Name***	**Process Hydrocarbon Sump**
Rated Heat Input		*Physical Size*	80.00 BBL
Manufacturer		*Operator ID*	S-202
Model		*Serial Number*	
Location Note			
Device Description	Tank dia. 6.5', height 14.0', volume 80 barrels. Used as accumulation point for process hydrocarbon drain system, connected to vapor recovery.		

7.7 Process Hydrocarbon Sump Pump

Device ID #	**009328**	***Device Name***	**Process Hydrocarbon Sump Pump**
Rated Heat Input		*Physical Size*	10.00 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	P-215
Model		*Serial Number*	
Location Note			
Device Description	Pump powered by 10 hp electric motor		

8 Chemical Injection System

8.1 Chemical Tank #1

Device ID #	**009203**	***Device Name***	**Chemical Tank #1**
Rated Heat Input		*Physical Size*	125.00 Gallons
Manufacturer		*Operator ID*	T-102A
Model		*Serial Number*	
Location Note			
Device Description	Dia. 31.0", height 49.0", volume 125 gallons. Chemical stored: Exxon Breaxit WC 7980 (water clarifier); Williams Pump (air). Replaceable tank provided by chemical supplier.		

8.2 Chemical tank #2

Device ID #	**009204**	***Device Name***	**Chemical tank #2**
Rated Heat Input		*Physical Size*	110.00 Gallons
Manufacturer		*Operator ID*	T-102B
Model		*Serial Number*	
Location Note			
Device Description	Dia. 33.0", height: 31.0", volume 110 gallons. Chemical stored: Exxon Corexit 4318 (corrosion inhibitor). Replaceable tank provided by chemical supplier.		

8.3 Chemical Tank #3

Device ID #	**009205**	***Device Name***	**Chemical Tank #3**
Rated Heat Input		*Physical Size*	200.00 Gallons
Manufacturer		*Operator ID*	T-102C
Model		*Serial Number*	
Location Note			
Device Description	Dia. 39.0", height 49.0", volume 200 gallons. Chemical stored: Exxon Surflo SI (Scale Inhibitor) 7620. Replaceable tank provided by chemical supplier.		

8.4 Motor: Chemical Tanks

Device ID #	**009192**	***Device Name***	**Motor: Chemical Tanks**
Rated Heat Input		*Physical Size*	0.33 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	T-103 and T-104
Model		*Serial Number*	
Location Note			
Device Description	Motor horsepower rating (each) 0.33.		

8.5 Chemical Injection Pump

Device ID #	**009195**	***Device Name***	**Chemical Injection Pump**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	P-102A
Model		*Serial Number*	
Location Note			
Device Description	ID # P-102 A; electric motor, 1/3 hp		

8.6 Meth. Tote Pump

Device ID #	**107339**	***Device Name***	**Meth. Tote Pump**
Rated Heat Input		*Physical Size*	0.50 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	P-103A
Model		*Serial Number*	
Location Note			
Device Description	electric motor, 1/2 hp		

9 Reject Oil Pump

Device ID #	**106027**	***Device Name***	**Reject Oil Pump**
Rated Heat Input		*Physical Size*	20.00 Brake Horsepower
Manufacturer		*Operator ID*	# P-202
Model		*Serial Number*	
Location Note			
Device Description	Pump equipped with a 20 hp motor		

10 Oil Injection Pump

Device ID #	**106029**	***Device Name***	**Oil Injection Pump**
Rated Heat Input		*Physical Size*	250.00 Brake Horsepower
Manufacturer		*Operator ID*	P-203
Model		*Serial Number*	
Location Note			
Device Description	Pump equipped with a 250 hp electric motor		

11 LACT System Unit 1

11.1 LACT Unit 1: Charge Pump

Device ID #	**009320**	***Device Name***	**LACT Unit 1: Charge Pump**
Rated Heat Input		*Physical Size*	60.00 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	P-222
Model		*Serial Number*	
Location Note			
Device Description	Pump equipped with a 60 hp electric motor		

12 H2S Strippers

Device ID #	**009194**	***Device Name***	**H2S Strippers**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-201 & V-202
Model		*Serial Number*	
Location Note			
Device Description	Two (2) strippers used for removing H2S from oil.		

13 LACT System Unit 2

13.1 LACT Unit # 2 Sample Pump

Device ID #	**009323**	***Device Name***	**LACT Unit # 2 Sample Pump**
Rated Heat Input		*Physical Size*	1.50 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	P-221
Model		*Serial Number*	
Location Note			
Device Description	Equipped with a 1.5 hp		

13.2 LACT Unit 2 Charge Pump

Device ID #	**009322**	***Device Name***	**LACT Unit 2 Charge Pump**
Rated Heat Input		*Physical Size*	30.00 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	P-220
Model		*Serial Number*	
Location Note			
Device Description	Equipped with an electric motor of 30 hp.		

14 Glycol Storage Tank

Device ID #	**009514**	***Device Name***	**Glycol Storage Tank**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-212
Model		*Serial Number*	
Location Note			
Device Description			

15 Crude Sump

Device ID #	**009330**	***Device Name***	**Crude Sump**
Rated Heat Input		*Physical Size*	95.00 BBL
Manufacturer		*Operator ID*	S-203
Model		*Serial Number*	
Location Note			
Device Description			

16 Crude Sump Pump

Device ID #	**009331**	***Device Name***	**Crude Sump Pump**
Rated Heat Input		*Physical Size*	10.00 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	P-244
Model		*Serial Number*	
Location Note			
Device Description	Equipped with an electric motor rated at 10 hp.		

17 Caustic Tank

Device ID #	**100917**	***Device Name***	**Caustic Tank**
Rated Heat Input		*Physical Size*	5000.00 Gallons
Manufacturer		*Operator ID*	TK-1905
Model		*Serial Number*	
Location Note			
Device Description	An equivalent system to C/D		

18 Exhaust Stack and Quick-release Connections

Device ID #	**100920**	***Device Name***	**Exhaust Stack and Quick-release Connections**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	An equivalent system to A/B		

19 Waste Gas Collection & Incineration

19.1 Thermal Oxidizer H-205

Device ID #	**000288**	***Device Name***	**Thermal Oxidizer H-205**
Rated Heat Input	140.000 MMBtu/Hour	*Physical Size*	
Manufacturer	Ship and Shore	*Operator ID*	H-205
Model		*Serial Number*	
Location Note			
Device Description	Use: continuous service, main unit. Rated at 140 MMBtu/hr, restricted to 34.06 MMBtu/hr planned continuous op.		

19.2 Thermal Oxidizer H-206

Device ID #	**000287**	***Device Name***	**Thermal Oxidizer H-206**
Rated Heat Input	220.000 MMBtu/Hour	*Physical Size*	
Manufacturer	Hirt	*Operator ID*	H-206
Model		*Serial Number*	
Location Note			
Device Description	Standby unit for H-205 unit, rated at 220 MMBtu/hr, restricted to 34.06 MMBtu/hr planned continuous op.		

19.3 Thermal Oxidizer H-207

Device ID #	**000286**	***Device Name***	**Thermal Oxidizer H-207**
Rated Heat Input	9.500 MMBtu/Hour	*Physical Size*	
Manufacturer	Hirt	*Operator ID*	H-207
Model		*Serial Number*	
Location Note			
Device Description	Standby Unit for H-205/H-206, 9.5 MMBtu/hr rating		

19.4 Relief Scrubber

Device ID #	**009412**	***Device Name***	**Relief Scrubber**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-221
Model		*Serial Number*	
Location Note			
Device Description	Type: horizontal, dia. 5.0', length 15.0 feet'		

19.5 LO-Cat Oxidizer Blower

Device ID #	**009414**	***Device Name***	**LO-Cat Oxidizer Blower**
Rated Heat Input		*Physical Size*	200.00 Horsepower (Electric Motor)
Manufacturer	Spencer	*Operator ID*	BL-1808
Model	C-55	*Serial Number*	
Location Note			
Device Description	Powered by a 200 hp electric motor, servicing thermal oxidizer H-205 unit		

19.6 Motor: Blower

Device ID #	**009416**	***Device Name***	**Motor: Blower**
Rated Heat Input		*Physical Size*	25.00 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	BL-201C
Model		*Serial Number*	
Location Note			
Device Description	Hybon, electric motor horsepower rating: 25.0.		

20 Fugitive Hydrocarbon Components - CLP Counts

20.1 Gas/Light Liq Service: Valves: Accessible

Device ID #	**000297**	***Device Name***	**Gas/Light Liq Service: Valves: Accessible**
Rated Heat Input		*Physical Size*	3607.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	3607 component leakpaths		

20.2 Gas/Light Liq Service: Connections: Accessible

Device ID #	**000300**	***Device Name***	**Gas/Light Liq Service: Connections: Accessible**
Rated Heat Input		*Physical Size*	19737.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	19737 component leakpaths		

20.3 Gas/Light Liq Service: Valves: Inaccessible

Device ID #	**000310**	***Device Name***	**Gas/Light Liq Service: Valves: Inaccessible**
Rated Heat Input		*Physical Size*	4.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	4 component leakpaths		

20.4 Gas/Light Liquid Service: Valves: Unsafe

Device ID #	**009118**	***Device Name***	**Gas/Light Liquid Service: Valves: Unsafe**
Rated Heat Input		*Physical Size*	7.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	7 component leakpaths		

20.5 Gas/Lt Liquid Service: Press Relief Valves: Accessible

Device ID #	**009122**	***Device Name***	**Gas/Lt Liquid Service: Press Relief Valves: Accessible**
Rated Heat Input		*Physical Size*	74.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	74 component leakpaths		

20.6 Gas/Lt Liquid Service: Pressure Relief Valves: Inaccessible

Device ID #	**009123**	***Device Name***	**Gas/Lt Liquid Service: Pressure Relief Valves: Inaccessible**
Rated Heat Input		*Physical Size*	2.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	2 component leakpaths		

20.7 Gas/Light Liq Service: Connections: Inaccessible

Device ID #	**000312**	***Device Name***	**Gas/Light Liq Service: Connections: Inaccessible**
Rated Heat Input		*Physical Size*	2327.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	2327 component leakpaths		

20.8 Gas/Light Liq Service: Connections: Unsafe

Device ID #	**009120**	***Device Name***	**Gas/Light Liq Service: Connections: Unsafe**
Rated Heat Input		*Physical Size*	78.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	78 component leakpaths		

20.9 Gas/Light Liq Service: Pump Seals

Device ID #	**009125**	***Device Name***	**Gas/Light Liq Service: Pump Seals**
Rated Heat Input		*Physical Size*	10.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	10 component leakpaths		

20.10 Gas/Light Liq Service: Compressor Seals

Device ID #	**009121**	***Device Name***	**Gas/Light Liq Service: Compressor Seals**
Rated Heat Input		*Physical Size*	20.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	20 component leakpaths		

20.11 Oil: Valves: Accessible

Device ID #	**000298**	***Device Name***	**Oil: Valves: Accessible**
Rated Heat Input		*Physical Size*	458.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	458 component leakpaths		

20.12 Oil: Pressure Relief Valves: Accessible

Device ID #	**009127**	***Device Name***	**Oil: Pressure Relief Valves: Accessible**
Rated Heat Input		*Physical Size*	0.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	0 component leakpaths		

20.13 Oil: Connections: Accessible

Device ID #	**000301**	***Device Name***	**Oil: Connections: Accessible**
Rated Heat Input		*Physical Size*	2428.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	2428 component leakpaths		

20.14 Oil: Pump Seals

Device ID #	**009128**	***Device Name***	**Oil: Pump Seals**
Rated Heat Input		*Physical Size*	7.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	7 component leakpaths		

20.15 Gas Light Liquid Service - Pressure relief Valves - Unsafe

Device ID #	**107363**	***Device Name***	**Gas Light Liquid Service - Pressure relief Valves - Unsafe**
Rated Heat Input		*Physical Size*	0.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description			

20.16 Oil Service - Connections - Unsafe

Device ID #	**107364**	***Device Name***	**Oil Service - Connections - Unsafe**
Rated Heat Input		*Physical Size*	0.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description			

21 Utility [Oil/Water Emulsion or Gas] Pipeline

Device ID #	**009199**	***Device Name***	**Utility [Oil/Water Emulsion or Gas] Pipeline**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	4” G-1000-HC-D
Model		*Serial Number*	
Location Note			
Device Description	Dia. : 4.0", from Platform Holly		

22 Wastewater Handling

22.1 Waste Water Tank

Device ID #	**106004**	***Device Name***	**Waste Water Tank**
Rated Heat Input		*Physical Size*	3000.00 BBL
Manufacturer		*Operator ID*	TK-201
Model		*Serial Number*	
Location Note			
Device Description	Wash tank type: 30' high by 24' diameter; volume = 3000 barrels, connected to VRU		

23 Storm Water Sump

Device ID #	**009485**	***Device Name***	**Storm Water Sump**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	S-201
Model		*Serial Number*	
Location Note			
Device Description	[No potential to emit criteria pollutants].		

24 Motor-Driven Firewater Pump

Device ID #	**106091**	***Device Name***	**Motor-Driven Firewater Pump**
Rated Heat Input		*Physical Size*	200.00 Horsepower
Manufacturer		*Operator ID*	# P-206A
Model		*Serial Number*	
Location Note			
Device Description	Used for pumping fire fighting water. Equipped with an electric motor rated at 200 hp.		

25 Liquefied Petroleum Gas/Natural Gas Liquids (LPG/NGL) Fac

25.1 LPG/NGL Stabilizer

Device ID #	**009401**	***Device Name***	**LPG/NGL Stabilizer**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-214
Model		*Serial Number*	
Location Note			

Device Description	

25.2 Motor: LPG/NGL Loading Pumps

Device ID #	**009402**	***Device Name***	**Motor: LPG/NGL Loading Pumps**
Rated Heat Input		*Physical Size*	20.00 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	P-212A, P-212B
Model		*Serial Number*	
Location Note			
Device Description	Each with a 20 hp motor.		

25.3 Loading Rack

Device ID #	**008003**	***Device Name***	**Loading Rack**
Rated Heat Input		*Physical Size*	10.00 100 Barrels Processed
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Grade level rack used to load liquefied petroleum gas into highway tanker trucks.		

25.4 NGL Storage Tank

Device ID #	**009459**	***Device Name***	**NGL Storage Tank**
Rated Heat Input		*Physical Size*	25000.00 Gallons
Manufacturer		*Operator ID*	V-227
Model		*Serial Number*	
Location Note			
Device Description			

25.5 LPG Storage Tank

Device ID #	**009460**	***Device Name***	**LPG Storage Tank**
Rated Heat Input		*Physical Size*	25000.00 Gallons
Manufacturer		*Operator ID*	V-228
Model		*Serial Number*	
Location Note			
Device Description	OUT OF SERVICE - Reeval 7904 R8		

26 Produced Gas Sweetening Unit (Lo-Cat Unit)

26.1 LO-Cat Gas/Filter Separators

Device ID #	**009345**	***Device Name***	**LO-Cat Gas/Filter Separators**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	F-2201, F-2202, F-2203
Model		*Serial Number*	
Location Note			
Device Description	Filter separator blow down line is connected to vapor recovery.		

26.2 LO-Cat Unit

26.2.1 LO-Cat Drum Separators

Device ID #	**009346**	***Device Name***	**LO-Cat Drum Separators**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-1201 & V-1202
Model		*Serial Number*	
Location Note			
Device Description	Two drums, each drum equipped with four (4) gas/ (LO-Cat)-solution eductors for gas sweetening		

26.2.2 Gas/Solution Eductors

Device ID #	**009347**	***Device Name***	**Gas/Solution Eductors**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	J-1101-1104, J-1105-1108
Model		*Serial Number*	
Location Note			
Device Description	Four for each drum V-1201 and V-1202; eductor device ID #s J-1101 through J-1104 & J-1105 through J-1108.		

26.2.3 LO-Cat Wash Drum

Device ID #	**009348**	***Device Name***	**LO-Cat Wash Drum**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-1203
Model		*Serial Number*	
Location Note			
Device Description			

26.2.4 LO-Cat Flash Drum

Device ID #	**009349**	***Device Name***	**LO-Cat Flash Drum**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-1206
Model		*Serial Number*	
Location Note			
Device Description	Design pressure: 10 - 17 psig.		

26.2.5 LO-Cat Knockout Drum

Device ID #	**009350**	***Device Name***	**LO-Cat Knockout Drum**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-1207
Model		*Serial Number*	
Location Note			
Device Description			

26.2.6 LO-Cat Reaction Tank

Device ID #	**009351**	***Device Name***	**LO-Cat Reaction Tank**
Rated Heat Input		*Physical Size*	3000.00 BBL
Manufacturer		*Operator ID*	T-1901
Model		*Serial Number*	
Location Note			
Device Description	This standby holding tank dia. 29'9", height: 22.3', volume 3000 barrels. Corrected from 2750 BBL - Reeval 7904 R8		

26.2.7 LO-Cat Oxidizer Tanks

Device ID #	**106025**	***Device Name***	**LO-Cat Oxidizer Tanks**
Rated Heat Input		*Physical Size*	3000.00 BBL
Manufacturer		*Operator ID*	TK-1902 & TK-1903
Model		*Serial Number*	
Location Note			
Device Description			

26.2.8 LO-Cat Hoffman Air Blowers

Device ID #	**009352**	***Device Name***	**LO-Cat Hoffman Air Blowers**
Rated Heat Input		*Physical Size*	300.00 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	BL-1801 & BL-1802.
Model		*Serial Number*	
Location Note			
Device Description	Electric motors serving each oxidizer air blower, electric motor horsepower rating (each): 300 hp		

26.2.9 Oxidizer Air Cooler

Device ID #	**009353**	***Device Name***	**Oxidizer Air Cooler**
Rated Heat Input		*Physical Size*	10.00 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	E-1302
Model		*Serial Number*	
Location Note			
Device Description	Air coolers service the oxidizers. The coolers are equipped with one 10 hp electric motor.		

26.2.10 LO-Cat Water Storage Tank

Device ID #	**009450**	***Device Name***	**LO-Cat Water Storage Tank**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-1210
Model		*Serial Number*	
Location Note			
Device Description	OUT OF SERVICE Reeval 7904 R8		

26.2.11 LO-Cat Makeup Tank Mixer

Device ID #	**009358**	***Device Name***	**LO-Cat Makeup Tank Mixer**
Rated Heat Input		*Physical Size*	0.50 Brake Horsepower
Manufacturer		*Operator ID*	M-2406
Model		*Serial Number*	
Location Note			
Device Description	Equipped with a 1/2 hp motor. OUT OF SERVICE Reeval 7904 R8		

26.3 LO-Cat Sulfur Unit

26.3.1 Sulfur Slurry Pits

Device ID #	**009354**	***Device Name***	**Sulfur Slurry Pits**
Rated Heat Input		*Physical Size*	1000.00 BBL
Manufacturer		*Operator ID*	TK-3102 & TK-3103
Model		*Serial Number*	
Location Note			
Device Description	Two pits of 1,000 bbl. each.		

26.3.2 Sulfur Slurry Pit Agitators

Device ID #	**009355**	***Device Name***	**Sulfur Slurry Pit Agitators**
Rated Heat Input		*Physical Size*	15.00 Brake Horsepower
Manufacturer		*Operator ID*	M-2404, M-2405, M-2407 &
Model		*Serial Number*	
Location Note			

Device Description	Each agitator equipped with a 15 hp motor.

26.3.3 Balance Tank

Device ID #	**009356**	***Device Name***	**Balance Tank**
Rated Heat Input		*Physical Size*	2000.00 BBL
Manufacturer		*Operator ID*	TK-3101
Model		*Serial Number*	
Location Note			
Device Description			

26.3.4 LO-Cat Sulfur Loading Tank

Device ID #	**009361**	***Device Name***	**LO-Cat Sulfur Loading Tank**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	TK-1908
Model		*Serial Number*	
Location Note			
Device Description	10’ dia. by 35’ height.		

26.3.5 Tank Mixers

Device ID #	**009362**	***Device Name***	**Tank Mixers**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	M-2402 & M-2403
Model		*Serial Number*	
Location Note			
Device Description	Serves TK-1903		

26.3.6 LO-Cat Sulfur Slurry Pumps

Device ID #	**009363**	***Device Name***	**LO-Cat Sulfur Slurry Pumps**
Rated Heat Input		*Physical Size*	15.00 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	P-1507 and P-1509
Model		*Serial Number*	
Location Note			

Device Description	Each pump equipped with 15.0 motor.

26.4 Chemical (Lo-Cat Liquor 310M) Storage Tank

Device ID #	**009359**	***Device Name***	**Chemical (Lo-Cat Liquor 310M) Storage Tank**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	TK-1907
Model		*Serial Number*	
Location Note			
Device Description	9’ dia. by 18’ height.		

26.5 Chemical Tank Pumps

Device ID #	**009360**	***Device Name***	**Chemical Tank Pumps**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	P-1905A/1906A/1907A
Model		*Serial Number*	
Location Note			
Device Description	Each pump equipped with 0.25 hp motor for chemicals pumping. P-1905A serves TK-3103 (caustic injection pump), P-1906A serves TK-3101 (iron chelate add pump), P-1907A serves TK-3103 (booster iron chelate add pump)		

26.6 LO-Cat Caustic Tank

Device ID #	**009364**	***Device Name***	**LO-Cat Caustic Tank**
Rated Heat Input		*Physical Size*	5000.00 Gallons
Manufacturer		*Operator ID*	TK-1905
Model		*Serial Number*	
Location Note			
Device Description			

26.7 LO-Cat Stretford Solution Circulation Pumps

Device ID #	**009365**	***Device Name***	**LO-Cat Stretford Solution Circulation Pumps**
Rated Heat Input		*Physical Size*	600.00 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	P-1505, P-1506
Model		*Serial Number*	
Location Note			
Device Description	Each pump equipped with 600 hp electric motor.		

26.8 Diesel Pump

Device ID #	**009462**	***Device Name***	**Diesel Pump**
Rated Heat Input		*Physical Size*	0.25 Brake Horsepower
Manufacturer		*Operator ID*	P-242
Model		*Serial Number*	
Location Note			
Device Description	Serves TK-1909		

26.9 LO-Cat Sump Pump

Device ID #	**009366**	***Device Name***	**LO-Cat Sump Pump**
Rated Heat Input		*Physical Size*	2.00 Brake Horsepower
Manufacturer		*Operator ID*	P-1513
Model		*Serial Number*	
Location Note			
Device Description	Used for drainage water collection. Pump equipped with 2 hp electric motor. Serves S-207.		

26.10 LO-Cat Chelate Chemical Tank

Device ID #	**009367**	***Device Name***	**LO-Cat Chelate Chemical Tank**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	TK-1906
Model		*Serial Number*	
Location Note			

Device Description	9' dia.' x 18' height.

26.11 LO-Cat Sump

Device ID #	**009445**	***Device Name***	**LO-Cat Sump**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	S-207
Model		*Serial Number*	
Location Note			
Device Description			

26.12 LO-Cat Reaction Tank Mixer

Device ID #	**106034**	***Device Name***	**LO-Cat Reaction Tank Mixer**
Rated Heat Input		*Physical Size*	20.00 Brake Horsepower
Manufacturer		*Operator ID*	# M-2401
Model		*Serial Number*	
Location Note			
Device Description	Equipped with a 20 hp motor. Serves TK-1901. OUT OF SERVICE - Reeval 7904 R8		

26.13 LO-Cat Drum Injection Blowers

Device ID #	**106035**	***Device Name***	**LO-Cat Drum Injection Blowers**
Rated Heat Input		*Physical Size*	100.00 Brake Horsepower
Manufacturer		*Operator ID*	#'s BL-1803 and BL-1804
Model		*Serial Number*	
Location Note			
Device Description	Equipped with electric motors 100 hp each. OUT OF SERVICE - Reeval 7904 R8		

27 Motor: Pump

Device ID #	**009477**	***Device Name***	**Motor: Pump**
Rated Heat Input		*Physical Size*	200.00 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	P-206A

Model		*Serial Number*	
Location Note			
Device Description	Use: pump fire fighting water.		

28 Grace Unit

28.1 Permeate Tubes - first stage skid - Bank B

Device ID #	**106099**	***Device Name***	**Permeate Tubes - first stage skid - Bank B**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Bank of four (4) tubes, each 10.75" diameter by 23' long		

28.2 Permeate Tubes - first stage skid - Bank A

Device ID #	**009399**	***Device Name***	**Permeate Tubes - first stage skid - Bank A**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Bank of four (4) tubes, each 10.75" diameter by 23' long		

28.3 Coalescing Filter

Device ID #	**009397**	***Device Name***	**Coalescing Filter**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	F-211
Model		*Serial Number*	
Location Note			
Device Description	8" diameter by 7' tall		

28.4 Guard Bed

Device ID #	**009398**	***Device Name***	**Guard Bed**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	F-210

Model		*Serial Number*	
Location Note			
Device Description	18" diameter by 7' tall		

28.5 Permeate Tubes - first stage skid - Bank C

Device ID #	**106340**	***Device Name***	**Permeate Tubes - first stage skid - Bank C**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Bank of four (4) tubes, each 10.75" diameter by 23' long		

29 Storm Water Sump Pump

Device ID #	**009486**	***Device Name***	**Storm Water Sump Pump**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	P-214
Model		*Serial Number*	
Location Note			
Device Description	[No potential to emit criteria pollutants].		

30 Gas Processing

30.1 Gas Pipeline

Device ID #	**009335**	***Device Name***	**Gas Pipeline**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	6”G-453-HC-B
Model		*Serial Number*	
Location Note			
Device Description	Dia. 6.0”, used to transport gas from Platform Holly to landfall.		

30.2 Seep Pipeline

Device ID #	**009336**	***Device Name***	**Seep Pipeline**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	6”-G-848-B
Model		*Serial Number*	

Location Note	
Device Description	Dia. 6.0”, used to transport gas from Seep Containment Device to landfall.

30.3 Gas Pig Receivers

Device ID #	**009337**	***Device Name***	**Gas Pig Receivers**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	One used for utility pipeline, pig launcher for seep (1) connected to the VRU via the process hydrocarbon drain system; device ID # -- NONE.		

30.4 Inlet Gas Scrubber

Device ID #	**009338**	***Device Name***	**Inlet Gas Scrubber**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-203
Model		*Serial Number*	
Location Note			
Device Description	Dia. 6.0', length 8.0'.		

30.5 "Buy-back" Gas Handling System

Device ID #	**009342**	***Device Name***	**"Buy-back" Gas Handling System**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Used to internally route gas to fuel EOF plant combustion equipment; no device ID.		

30.6 Sales Gas Handling System

Device ID #	**009343**	***Device Name***	**Sales Gas Handling System**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	

Location Note	
Device Description	Used to route gas to utility company odorant and metering facilities, equipped with a 6” diameter pipeline; no device ID.

31 Sweet Gas Compressor Operations

31.1 Sales Gas Compressors

Device ID #	**009372**	***Device Name***	**Sales Gas Compressors**
Rated Heat Input		*Physical Size*	600.00 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	K-205 [CFB], K-206 [HHE]
Model		*Serial Number*	
Location Note			
Device Description	Each three-stage compressor powered by electric motor horsepower rating (each): 600.0.		

31.2 Motor: Oil Pumps

Device ID #	**009434**	***Device Name***	**Motor: Oil Pumps**
Rated Heat Input		*Physical Size*	1.00 Brake Horsepower
Manufacturer		*Operator ID*	P-241A, P-241B
Model		*Serial Number*	
Location Note			
Device Description	Two pumps, each pump driven by electric motors, 1 hp each. P-241A is the Oil Sump Pump for TK-100, P-241B is the Lube Oil Booster Pump for TK-100.		

31.3 Lube Oil Pump

Device ID #	**009442**	***Device Name***	**Lube Oil Pump**
Rated Heat Input		*Physical Size*	3.00 Brake Horsepower
Manufacturer		*Operator ID*	P-236
Model		*Serial Number*	
Location Note			
Device Description	Pump equipped with electric motor, 3 hp rated. Serves K-201.		

31.4 Trabon Lube Pump

Device ID #	**009446**	***Device Name***	**Trabon Lube Pump**
Rated Heat Input		*Physical Size*	3.00 Brake Horsepower
Manufacturer		*Operator ID*	P-257
Model		*Serial Number*	
Location Note			
Device Description	Electric motor, 3 hp. Serves K-205.		

31.5 First Stage Suction Scrubber

Device ID #	**009451**	***Device Name***	**First Stage Suction Scrubber**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-229
Model		*Serial Number*	
Location Note			
Device Description	Serves K-205 and K-206.		

31.6 Lube Oil Pump

Device ID #	**009443**	***Device Name***	**Lube Oil Pump**
Rated Heat Input		*Physical Size*	5.00 Brake Horsepower
Manufacturer		*Operator ID*	P-225
Model		*Serial Number*	
Location Note			
Device Description	Electric motor, 5 hp. Serves K-206.		

31.7 Suction Scrubbers

Device ID #	**009370**	***Device Name***	**Suction Scrubbers**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-205, V-206, V-208
Model		*Serial Number*	
Location Note			
Device Description	V-205 (first stage), V-206 (second stage) and V-208 (third stage). Serve K-201.		

31.8 Lube Oil Pump

Device ID #	**009444**	***Device Name***	**Lube Oil Pump**
Rated Heat Input		*Physical Size*	5.00 Brake Horsepower
Manufacturer		*Operator ID*	P-231
Model		*Serial Number*	
Location Note			
Device Description	Electric motor, 5 hp. Serves K-206.		

31.9 Second Stage Scrubbers

Device ID #	**009373**	***Device Name***	**Second Stage Scrubbers**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-230, V-231
Model		*Serial Number*	
Location Note			
Device Description	V-230 (second stage suction) & V-231 (second stage discharge). Serve K-205 and K-206.		

31.10 Second Stage Discharge Scrubber

Device ID #	**009371**	***Device Name***	**Second Stage Discharge Scrubber**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-207
Model		*Serial Number*	
Location Note			
Device Description	Second stage unit. Serves K-201.		

31.11 Third Stage Discharge Scrubber

Device ID #	**009374**	***Device Name***	**Third Stage Discharge Scrubber**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-232
Model		*Serial Number*	
Location Note			

Device Description	Third stage. Serves K-205 and K-206.

31.12 Sales Gas Compressor

Device ID #	**009369**	***Device Name***	**Sales Gas Compressor**
Rated Heat Input		*Physical Size*	4500.00 Horsepower (Electric Motor)
Manufacturer	De Laval	*Operator ID*	K-201
Model		*Serial Number*	
Location Note			
Device Description	Equipped with a 4500 hp electric motor		

31.13 Jacket Water Surge Tank

Device ID #	**009380**	***Device Name***	**Jacket Water Surge Tank**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	TK-240
Model		*Serial Number*	
Location Note			
Device Description	2’ dia.. by 12’ height		

31.14 Jacket Water Pumps

Device ID #	**009376**	***Device Name***	**Jacket Water Pumps**
Rated Heat Input		*Physical Size*	2.00 Brake Horsepower
Manufacturer		*Operator ID*	P-219, P-226, P-229
Model		*Serial Number*	
Location Note			
Device Description	Each powered by 2 hp electric motor. P-219 Serves K-201. P-226 Serves K-205. P-229 Serves K-206.		

31.15 Chemicals Tank

Device ID #	**009381**	***Device Name***	**Chemicals Tank**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	TK-240A
Model		*Serial Number*	
Location Note			

Device Description	2’ dia. by 4.5’ height

31.16 Lube Oil Tank Pump

Device ID #	**009377**	***Device Name***	**Lube Oil Tank Pump**
Rated Heat Input		*Physical Size*	0.33 Brake Horsepower
Manufacturer		*Operator ID*	P-218
Model		*Serial Number*	
Location Note			
Device Description	Powered by 0.33 hp electric motor.		

31.17 Discharge Cooler Exchangers

Device ID #	**009375**	***Device Name***	**Discharge Cooler Exchangers**
Rated Heat Input		*Physical Size*	10.00 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	E-218A, E-218B, E-218C, E
Model		*Serial Number*	
Location Note			
Device Description	Each exchanger fan powered by 10 hp electric motor. E-218A is OUT OF SERVICE. Serve K-205 and K-206.		

31.18 Separators

Device ID #	**009378**	***Device Name***	**Separators**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-118, V-119
Model		*Serial Number*	
Location Note			
Device Description	Each connected to vapor recovery. V-118 is NGL Discharge Separator; V-119 is NGL Inlet Separator.		

31.19 Hybon Scrubber

Device ID #	**009379**	***Device Name***	**Hybon Scrubber**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-224
Model		*Serial Number*	

Location Note	
Device Description	Dia. 20.0'', length: 8.0'

32 Surface Coating Operations

32.1 Paint-coating and use of solvent as thinners

Device ID #	**009521**	***Device Name***	**Paint-coating and use of solvent as thinners**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Use: activities for surface coating operations, not included in scheduled maintenance and repair activities.		

32.2 Solvent use for degreasing and cleaning

Device ID #	**106341**	***Device Name***	**Solvent use for degreasing and cleaning**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Activity is part of regular operations, and not included as part of regular maintenance and repair		

33 Glycol Unit

33.1 Glycol Separator

Device ID #	**009389**	***Device Name***	**Glycol Separator**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-209
Model		*Serial Number*	
Location Note			
Device Description			

33.2 Glycol Regenerator

Device ID #	**009390**	***Device Name***	**Glycol Regenerator**

Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-210.
Model		*Serial Number*	
Location Note			
Device Description			

33.3 Glycol Flash Vessel

Device ID #	**009391**	***Device Name***	**Glycol Flash Vessel**
Rated Heat Input		*Physical Size*	2.50 BBL
Manufacturer		*Operator ID*	V-211
Model		*Serial Number*	
Location Note			
Device Description	Tank dia. 20.0", height: 6.0 feet, volume: 2.5 barrels, connected to vapor recovery.		

33.4 Glycol Pumps

Device ID #	**009392**	***Device Name***	**Glycol Pumps**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	P-207A/B/C
Model		*Serial Number*	
Location Note			
Device Description	Three Pumps: Each pump driven by a pneumatic motor powered by pressurized air; device ID #s P-207A [rich glycol], P-207B [lean glycol], P-207C		

33.5 Vapor Glycol Filter

Device ID #	**009393**	***Device Name***	**Vapor Glycol Filter**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	F-206
Model		*Serial Number*	
Location Note			
Device Description	6" dia. x 3' height.		

33.6 Glycol Charcoal Filters

Device ID #	**009394**	***Device Name***	**Glycol Charcoal Filters**
Rated Heat Input		*Physical Size*	

Manufacturer		*Operator ID*	F-207 & F-208
Model		*Serial Number*	
Location Note			
Device Description	10" dia. x 5'. F-208 is a glycol sock filter.		

33.7 Glycol Drip Tank

Device ID #	**009395**	***Device Name***	**Glycol Drip Tank**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-210A
Model		*Serial Number*	
Location Note			
Device Description	2' x 3".		

33.8 Glycol Pump

Device ID #	**009463**	***Device Name***	**Glycol Pump**
Rated Heat Input		*Physical Size*	0.25 Brake Horsepower
Manufacturer		*Operator ID*	P-208
Model		*Serial Number*	
Location Note			
Device Description	Electric motor, 0.25 hp		

34 Piston IC Engine

34.1 IC Engine: Emergency Fire Water Pump

Device ID #	**008006**	***Device Name***	**IC Engine: Emergency Fire Water Pump**
Rated Heat Input		*Physical Size*	2.04 MMBtu/Hour
Manufacturer	Detroit Diesel	*Operator ID*	P-206B
Model	7084-7010	*Serial Number*	8VA366877
Location Note			
Device Description	Type: 2 cycle - 8 cylinder, use: prime mover for Equipment Item 12, maximum brake-horsepower rating @ 1800 rpm = 292.0: fuel: diesel oil number 2.		

34.2 IC Engine: Backup Emergency Generator

Device ID #	394946	*Maximum Rated BHP*	315.00
Device Name	IC Engine: Backup Emergency Generator	*Serial Number*	PE6068N015381
Engine Use	Electrical Power	*EPA Engine Family Name*	LJDXL13.5103
Manufacturer	John Deere	*Operator ID*	
Model Year	2020	*Fuel Type*	CARB Diesel - ULSD
Model	6068HFG85A		
DRP/ISC?	No	*Healthcare Facility?*	No
Daily Hours	2.00	*Annual Hours*	50
Location Note	Ellwood Onshore Facility		
Device Description	John Deere 6068HFG85A 315 bhp Tier 3, turbocharged and aftercooled		

35 Refrigeration Unit (York Skid)

35.1 York Refrigeration Compressor

Device ID #	**009383**	***Device Name***	**York Refrigeration Compressor**
Rated Heat Input		*Physical Size*	1750.00 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	K-202
Model		*Serial Number*	
Location Note			
Device Description	Powered by electric motor		

35.2 Float Chamber Vessel

Device ID #	**009384**	***Device Name***	**Float Chamber Vessel**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-246
Model		*Serial Number*	
Location Note			
Device Description	18" diameter by 4' height. Serves E-210.		

35.3 York Jacket Water Pumps

Device ID #	**009385**	***Device Name***	**York Jacket Water Pumps**
Rated Heat Input		*Physical Size*	10.00 Brake Horsepower
Manufacturer		*Operator ID*	P-248A, 248B
Model		*Serial Number*	
Location Note			
Device Description	Each powered by a 10 hp electric motor. Serve K-202.		

35.4 Jacket Water Exchanger Fans

Device ID #	**009386**	***Device Name***	**Jacket Water Exchanger Fans**
Rated Heat Input		*Physical Size*	10.00 Brake Horsepower
Manufacturer		*Operator ID*	E-217A, E-217B
Model		*Serial Number*	
Location Note			
Device Description	Each powered by a 10 hp electric motor. Serve K-202.		

35.5 York Shutdown Liquid Off Receiver

Device ID #	**009457**	***Device Name***	**York Shutdown Liquid Off Receiver**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-244 A.
Model		*Serial Number*	
Location Note			
Device Description	8.625" diameter by 6' height. Serves K-202.		

35.6 York Unit Oil Recovery Scrubber

Device ID #	**106041**	***Device Name***	**York Unit Oil Recovery Scrubber**
Rated Heat Input		*Physical Size*	1.00

Manufacturer		*Operator ID*	V- 244
Model		*Serial Number*	
Location Note			
Device Description	Serves K-202		

36 Utility Pig Receiver

Device ID #	**111633**	***Device Name***	**Utility Pig Receiver**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Interfacing Holly		

37 Gas Pig Receiver

Device ID #	**111634**	***Device Name***	**Gas Pig Receiver**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Interfacing Holly		

38 Vapor Recovery Unit

38.1 First Stage Suction Scrubber

Device ID #	**009404**	***Device Name***	**First Stage Suction Scrubber**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-235
Model		*Serial Number*	
Location Note			
Device Description	dia. 2.0', length 4.0'. Serves K-VRU-1 and K-VRU-3		

38.2 Second Stage Suction Scrubber

Device ID #	**009405**	***Device Name***	**Second Stage Suction Scrubber**

Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-236
Model		*Serial Number*	
Location Note			
Device Description	Dia. 3.0', length 6.0'. Serves K-VRU-2 and K-VRU-4.		

38.3 VRU Water Jacket Pumps

Device ID #	**009406**	***Device Name***	**VRU Water Jacket Pumps**
Rated Heat Input		*Physical Size*	10.00 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	P-249A, P-249B
Model		*Serial Number*	
Location Note			
Device Description	Two Pumps, each with a 10 hp motor.		

38.4 First Stage VRS Compressors

Device ID #	**009408**	***Device Name***	**First Stage VRS Compressors**
Rated Heat Input		*Physical Size*	75.00 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	K-VRU-1, K-VRU-3
Model		*Serial Number*	
Location Note			
Device Description	Two compressors, each with electric motor horsepower rating (each) 75 hp		

38.5 Second Stage VRS Compressors

Device ID #	**009409**	***Device Name***	**Second Stage VRS Compressors**
Rated Heat Input		*Physical Size*	200.00 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	K-VRU-2 & K-VRU-4
Model		*Serial Number*	
Location Note			
Device Description	Each equipped with electric motors horsepower rating (each) 200 hp.		

38.6 Blanket Gas System

Device ID #	**009410**	***Device Name***	**Blanket Gas System**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Used to supply blanket produced gas to the facility.		

39 Vacuum Truck Exhaust Scrubbing

39.1 Trailer

Device ID #	**100918**	***Device Name***	**Trailer**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Exhaust stack, valves, and quick-release connections. An equivalent system to C/D		

39.2 Carbon canister

Device ID #	**106017**	***Device Name***	**Carbon canister**
Rated Heat Input		*Physical Size*	250.00 Pounds
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	55-gallon drum: capacity 250 lbs., carbon canister with granulated, activated carbon content		

40 Methanol Injection Unit

40.1 Methanol Storage Tanks

Device ID #	**009420**	***Device Name***	**Methanol Storage Tanks**

Rated Heat Input		*Physical Size*	550.00 Gallons
Manufacturer		*Operator ID*	T-101 A/B/C/D
Model		*Serial Number*	
Location Note			
Device Description	Four (4) tanks, capacity 550 gallons each. Provides methanol for the VRU chiller.		

40.2 Methanol Injection Pumps

Device ID #	**009421**	***Device Name***	**Methanol Injection Pumps**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	P-101 A/B
Model		*Serial Number*	
Location Note			
Device Description	Each powered by 0.25 hp motor		

41 Hydrocarbon Laboratory

41.1 Fume Hood

Device ID #	**009424**	***Device Name***	**Fume Hood**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Powered by electric motor horsepower rating: 0.33		

42 Stand-by Equipment

42.1 Sump Pit

Device ID #	**009430**	***Device Name***	**Sump Pit**
Rated Heat Input		*Physical Size*	145.00 BBL
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Dia. 8.0', height 35.3'. Use: accumulation point for scrubbing medium from the iron sponge vessels.		

42.2 Chemical Transfer Pump

Device ID #	**009447**	***Device Name***	**Chemical Transfer Pump**
Rated Heat Input		*Physical Size*	3.00 Brake Horsepower

Manufacturer		*Operator ID*	P-103
Model		*Serial Number*	
Location Note			
Device Description	Electric motor, 3 hp. Serves TK-101. OUT OF SERVICE - Reeval 7904 R8		

B EXEMPT EQUIPMENT

1 LPG Storage Tanks

Device ID #	**009466**	***Device Name***	**LPG Storage Tanks**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-218, V-219
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.V.4 Storage Of Org Lqds Except Gasoline <=1500 Gal	
Location Note			
Device Description	V-219 is OUT OF SERVICE - Reeval 7904 R8		

2 Instrument Air Compressors

Device ID #	**009472**	***Device Name***	**Instrument Air Compressors**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	K-204 A/B/C
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.L.2 Air Cond/Vent Systm W/No Air Contaminant Removal	
Location Note			
Device Description	Device ID #s: K-204 A/B/C; supply pressurized air for use in EOF control systems, electric motor horsepower rating (each): 25.0.; D-205 A/B; Air compressor dryers (2), dry air; V-237 air compressor receiver, 30' by 50"		

3 Water Tanks

Device ID #	**009475**	***Device Name***	**Water Tanks**
Rated Heat Input		*Physical Size*	3000.00 BBL
Manufacturer		*Operator ID*	TK-205 & TK-206
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.L.4 Water Cooling Towers/Ponds	
Location Note			
Device Description	Volume (each): 3000 barrels, use: store fresh water for fire fighting. [No potential to emit criteria pollutants]		

4 Fresh Water Surge Vessel

Device ID #	**009483**	***Device Name***	**Fresh Water Surge Vessel**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-242
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.L.13 H2O Well/Filtration Sys/Reverse Osmosis	
Location Note			
Device Description			

5 Waste Water Charge Pump

Device ID #	**009489**	***Device Name***	**Waste Water Charge Pump**
Rated Heat Input		*Physical Size*	20.00 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	P-201C
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.L.13 H2O Well/Filtration Sys/Reverse Osmosis	
Location Note			
Device Description	Use: pump produced water, electric motor horsepower rating: 20.0. OUT OF SERVICE - Reeval 7904 R8		

6 Compressor Lube Oil Tank

Device ID #	**009497**	***Device Name***	**Compressor Lube Oil Tank**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	TK-218
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.V.3 Storage Of Lubricating Oils	
Location Note			
Device Description	[Rule 202.V.3] OUT OF SERVICE - Reeval 7904 R8		

7 Gas Chillers

Device ID #	**009508**	***Device Name***	**Gas Chillers**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	E-207/208
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.L.1 Heat Exchangers	
Location Note			
Device Description	[Rule 202.L.1]		

8 Crude/Crude Exchangers

Device ID #	**009519**	***Device Name***	**Crude/Crude Exchangers**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	E-201 A/B/C/D
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.L.1 Heat Exchangers	
Location Note			
Device Description			

9 Air Filters

Device ID #	**107263**	***Device Name***	**Air Filters**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	F-237 A/B/C
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.L.2 Air Cond/Vent Systm W/No Air Contaminant Removal	
Location Note			
Device Description	F-237D removed during reeval 7904 R8		

10 De-Butanizer Condenser

Device ID #	**009468**	***Device Name***	**De-Butanizer Condenser**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	E-214
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.L.1 Heat Exchangers	
Location Note			
Device Description	OUT OF SERVICE - Reeval 7904 R8		

11 LO-Cat Diesel Injection Tank

Device ID #	**107264**	***Device Name***	**LO-Cat Diesel Injection Tank**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	TK-1909
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.V.2 Storage Of Refined Fuel Oil W/Grav <=40 Api	
Location Note			
Device Description			

12 Air Dryer Filters

Device ID #	**009473**	***Device Name***	**Air Dryer Filters**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	F-205A and F-205B
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.L.2 Air Cond/Vent Systm W/No Air Contaminant Removal	
Location Note			
Device Description			

13 Water Supply Pumps

Device ID #	**009482**	***Device Name***	**Water Supply Pumps**
Rated Heat Input		*Physical Size*	15.00 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	P-205A, P-205B
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.L.4 Water Cooling Towers/Ponds	
Location Note			
Device Description	Each powered by electric motor horsepower rating: 15 hp (each)		

14 Fresh Water Surge Vessel Pump

Device ID #	**009484**	***Device Name***	**Fresh Water Surge Vessel Pump**
Rated Heat Input		*Physical Size*	15.00 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	P-243-B
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.L.13 H2O Well/Filtration Sys/Reverse Osmosis	
Location Note			
Device Description	Equipped with 15 hp electric motor. Serves V-242		

15 Water Irrigation Pump

Device ID #	**107259**	***Device Name***	**Water Irrigation Pump**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	P-237
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:*	202.L.13 H2O Well/Filtration Sys/Reverse Osmosis
Location Note			
Device Description			

16 30-wt Oil Storage Tank

Device ID #	**009498**	***Device Name***	**30-wt Oil Storage Tank**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	T-100
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:*	202.V.2 Storage Of Refined Fuel Oil W/Grav <=40 Api
Location Note			
Device Description	[Rule 202.V.3] being replaced w/small tank		

17 Storm Water Sump Pump

Device ID #	**009487**	***Device Name***	**Storm Water Sump Pump**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	P-230
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:*	202.L.4 Water Cooling Towers/Ponds
Location Note			
Device Description	Equipped with a 10 hp electric motor		

18 Motor: Pump

Device ID #	**009490**	***Device Name***	**Motor: Pump**
Rated Heat Input		*Physical Size*	75.00 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	P-201A/B
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.L.13 H2O Well/Filtration Sys/Reverse Osmosis	
Location Note			
Device Description	device ID #s: P-201A & P-201B, use: pump brine/produced water, electric motor horsepower rating (each): 75.0.		

19 Intercooler Receiver

Device ID #	**009509**	***Device Name***	**Intercooler Receiver**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-245
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.L.1 Heat Exchangers	
Location Note			
Device Description	[Rule 202.L.1] Serves K-202		

20 De-Butanizer Bottom Cooler

Device ID #	**009469**	***Device Name***	**De-Butanizer Bottom Cooler**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	E-215
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.L.1 Heat Exchangers	
Location Note			
Device Description	OUT OF SERVICE - Reeval 7904 R8		

21 Diesel Storage Tank

Device ID #	**009478**	***Device Name***	**Diesel Storage Tank**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	TK-220
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.V.2 Storage Of Refined Fuel Oil W/Grav <=40 Api	
Location Note			
Device Description	Use: Emergency firewater pump fuel supply.		

22 Fan Air Coolers

Device ID #	**009499**	***Device Name***	**Fan Air Coolers**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	E-203/204/205
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.L.1 Heat Exchangers	
Location Note			
Device Description	[Rule 202.L.1] ; device was originally E-203/A-D		

23 Refrigeration Unit Fan Exchangers

Device ID #	**009510**	***Device Name***	**Refrigeration Unit Fan Exchangers**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	E-210 A/B/C/D
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.L.1 Heat Exchangers	
Location Note			
Device Description	[Rule 202.L.1]		

24 Water Injection/Disposal Well

Device ID #	**009493**	***Device Name***	**Water Injection/Disposal Well**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.L.13 H2O Well/Filtration Sys/Reverse Osmosis	
Location Note			
Device Description			

25 Air Fin Coolers

Device ID #	**009501**	***Device Name***	**Air Fin Coolers**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	E-220A, E220-B
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.L.1 Heat Exchangers	
Location Note			
Device Description	[Rule 202.L.1]		

26 Glycol Fin Fan Exchanger

Device ID #	**009503**	***Device Name***	**Glycol Fin Fan Exchanger**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	E-200
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.L.1 Heat Exchangers	
Location Note			
Device Description	[Rule 202.L.1]		

27 Rinse Water Storage Tank

Device ID #	**009495**	***Device Name***	**Rinse Water Storage Tank**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-226
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.L.13 H2O Well/Filtration Sys/Reverse Osmosis	
Location Note			
Device Description	Use: storage of fresh water. [No potential to emit criteria pollutants] Currently OUT OF SERVICE.		

28 Refrigeration Unit Gas Fin Cooler

Device ID #	**009511**	***Device Name***	**Refrigeration Unit Gas Fin Cooler**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	E-206
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.L.1 Heat Exchangers	
Location Note			
Device Description	[Rule 202.L.1] Serves K-202		

29 Fin Tube Jacket Water Exchanger

Device ID #	**009504**	***Device Name***	**Fin Tube Jacket Water Exchanger**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	E-226
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.L.1 Heat Exchangers	
Location Note			
Device Description	[Rule 202.L.1]		

30 Therminol Exchanger

Device ID #	**009518**	***Device Name***	**Therminol Exchanger**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	E-102
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:*	202.L.1 Heat Exchangers
Location Note			
Device Description			

E DE-PERMITTED EQUIPMENT

1 Heater Treater # 1

Device ID #	**000290**	***Device Name***	**Heater Treater # 1**
Rated Heat Input	4.390 MMBtu/Hour	*Physical Size*	
Manufacturer	Natco	*Operator ID*	H-201
Model	10' x 50'	*Serial Number*	T-1794301-01
Depermitted		*Facility Transfer*	
Device Description	Maximum heat input rating = 4.399 MMBtu/hr; fuel = "in-plant fuel" gas		

2 Heater Treater # 2

Device ID #	**000289**	***Device Name***	**Heater Treater # 2**
Rated Heat Input	2.460 MMBtu/Hour	*Physical Size*	
Manufacturer	Natco	*Operator ID*	H-202
Model	8'x40'	*Serial Number*	
Depermitted		*Facility Transfer*	
Device Description	Maximum heat input rating = 2.464 MMBtu/hr; fuel = "in-plant fuel" gas		

3 Heater Treater #3

Device ID #	**000291**	***Device Name***	**Heater Treater #3**
Rated Heat Input	4.390 MMBtu/Hour	*Physical Size*	
Manufacturer	Natco	*Operator ID*	H-203
Model	10' x 50'	*Serial Number*	T-6024701-01
Depermitted		*Facility Transfer*	
Device Description	Maximum heat input rating = 4.399 MMBtu/hr; fuel = "in-plant fuel" gas		

4 IC Engine: Backup Emergency Generator

Device ID #	**009010**	***Device Name***	**IC Engine: Backup Emergency Generator**
Rated Heat Input	3.380 MMBtu/Hour	*Physical Size*	520.00 Horsepower
Manufacturer	Detroit Diesel	*Operator ID*	GEN-SB
Model	16V-71	*Serial Number*	7163-7000
Depermitted		*Facility Transfer*	
Device Description	520 hp unit powers the vapor recovery system compressors,		