air pollution control district
SANTA BARBARA COUNTY

PERMIT TO OPERATE 8092-R10

AND

PART 70 OPERATING PERMIT 8092

EXXONMOBIL – SYU PROJECT
POPCO GAS PLANT

12000 CALLE REAL, GOLETA
SANTA BARBARA COUNTY, CA

<u>OPERATOR</u>

EXXONMOBIL PRODUCTION COMPANY (EXXONMOBIL)

<u>OWNERSHIP</u>

PACIFIC OFFSHORE PIPELINE COMPANY (POPCO)

SANTA BARBARA COUNTY
AIR POLLUTION CONTROL DISTRICT

FEBRUARY 2023

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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
BARCT	Best Available Retrofit Control Technology
bpd	barrels per day (1 barrel = 42 gallons)
Btu	British thermal unit
CAM	compliance assurance monitoring
CEMS	continuous emissions monitoring
DCS	Distributed Control System
District	Santa Barbara County Air Pollution Control District
dscf	dry standard cubic foot
E100	emitters less than 100 ppmv
E500	emitters less than 500 ppmv
EQ	equipment
ESE	entire source emissions
EU	emission unit
°F	degree Fahrenheit
FID	facility identification
gal	gallon
GHG	Greenhouse Gas
gr	grain
HAP	hazardous air pollutant (as defined by CAAA, Section 112(b))
H_2S	hydrogen sulfide
I&M	Inspection & Maintenance
ISO	International Standards Organization
k	kilo (thousand)
l	liter
lb	pound
lbs/day	pounds per day
lbs/hr	pounds per hour
LACT	Lease Automatic Custody Transfer
LFC	Las Flores Canyon
LPG	liquid petroleum gas
LRGO	Linear relief gas oxidizer (part of ZTOF)
M	mega (million)
MACT	Maximum Achievable Control Technology
MM	million
MW	molecular weight
NAR	Nonattainment Review
NGL	natural gas liquids
NG	natural gas
NH_3	ammonia
NSPS	New Source Performance Standards
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NSCR	non-selective catalytic reduction
O_2	oxygen
OCS	outer continental shelf
OTP	Oil Treating Plant
PI	Process Information System
PM	particulate matter
PM_{10}	particulate matter less than 10 µm in size

$PM_{2.5}$	particulate matter less than 2.5 μm in size
POPCO	Pacific Offshore Pipeline Company
ppm (vd or w)	parts per million (volume dry or weight)
psia	pounds per square inch absolute
psig	pounds per square inch gauge
PRD/PSV	pressure relief device
PTO	Permit to Operate
RACT	Reasonably Available Control Technology
ROC	reactive organic compounds, same as "VOC" as used in this permit
RVP	Reid vapor pressure
scf	standard cubic foot
scfd (or scfm)	standard cubic feet per day (or per minute)
SCR	Selective Catalytic Reduction
SIP	State Implementation Plan
SGTP	Stripping Gas Treating Plant
SOV	Stabilizer Overhead Vapor
SSID	stationary source identification
STP	standard temperature (60°F) and pressure (29.92 inches of mercury)
SYU	Santa Ynez Unit
TEG	Tri-ethylene glycol
THC, TOC	total hydrocarbons, total organic compounds
TGCU	Tail Gas Cleanup Unit
tpq, TPQ	tons per quarter
tpy, TPY	tons per year
TT	Transportation Terminal
TVP	true vapor pressure
USEPA	United States Environmental Protection Agency
VE	visible emissions
VRS	vapor recovery system
WGI	Waste Gas Incinerator
w.c.	water column
ZTOF	John Zink Company thermal oxidation flare

1.0 Introduction

1.1. Purpose

<u>General</u>. 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 is a combined permitting action that covers both the Federal Part 70 permit (*Part 70 Operating Permit No. 8092*) as well as the State Operating Permit (*Permit to Operate No. 8092*).

Santa Barbara County is designated as an ozone non-attainment area for the state ambient air quality standards. The County is also designated a non-attainment area for the state PM_{10} ambient air quality standard.

<u>Part 70 Permitting</u>. The initial Part 70 permit for the POPCO Gas Plant was issued September 5, 2000 in accordance with the requirements of the District's Part 70 operating permit program. This permit is the fifth renewal of the Part 70 permit, and may include additional applicable requirements. The District triennial permit reevaluation has been combined with this Part 70 Permit renewal. This permit incorporates previous Part 70 revision permits (ATC/PTOs, PTOs, PTO Modifications, and Administrative Modifications) that have been issued since April 1, 2018. These permits are listed in Section 1.2.2 of this permit. The POPCO Gas Plant is a part of the *ExxonMobil-Santa Ynez Unit (SYU) Project* stationary source (SSID = 1482), which is a major source for VOC [a], NO_X, CO, SO_X and PM_{10}. Conditions listed in this permit are based on federal, state or local rules and requirements. Sections 9.A, 9.B and 9.C of this permit are enforceable by the District, the USEPA and the public since these sections are federally enforceable under Part 70. Where any reference contained in Sections 9.A, 9.B or 9.C refers to any other part of this permit, that part of the permit referred to is federally enforceable. Conditions listed in Section 9.D are "District -only" enforceable.

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

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

[a] 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.

The facility's potential to emit has been estimated, however the greenhouse gas PTE is not a new source review 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.

1.2. Stationary Source/Facility Overview

1.2.1 Stationary Source/Facility Overview: The POPCO Gas Plant is part of the *ExxonMobil – SYU Project* stationary source. Pacific Offshore Pipeline Company (POPCO), a subsidiary of Exxon Mobil Corporation, owns the facility. ExxonMobil Production Company (ExxonMobil), an unincorporated division of Exxon Mobil Corporation, operates the facility.

The POPCO facility processes raw sour gas produced from the ExxonMobil owned and operated Santa Ynez Unit oil and gas field located in the Outer Continental Shelf off the western Santa Barbara Channel. The Project is comprised of the following facilities:

- Platform Hondo to POPCO Gas Plant Pipeline. The sour gas produced from the ExxonMobil Santa Ynez Unit is delivered to the POPCO gas processing plant located in Las Flores Canyon, Santa Barbara County, via an underwater and onshore 12-inch diameter pipeline. The pipeline originates at ExxonMobil's OCS Platform Hondo located 5 miles offshore. The pipeline is sized to handle up to 90 MMSCFD of sour gas. Up to 80 MMSCFD can be delivered to the POPCO plant and up to 15 MMSCFD can be delivered to the ExxonMobil Las Flores Canyon gas plant for processing by ExxonMobil into fuel that is used in their facility's combustion and energy producing equipment (primarily a 49 MW gas turbine-powered electric/steam cogeneration unit).

- The POPCO Gas Plant. The POPCO facility was the first to operate in the consolidated Las Flores Canyon oil and gas processing area. POPCO began routine operations starting in July 1984. Once the raw sour gas is delivered to the POPCO Gas Plant facility via the pipeline from Platform Hondo, this gas is treated first to remove condensate (consisting of natural gas hydrocarbon liquids and water), then to remove hydrogen sulfide using regenerable amine solutions, and finally compression to natural gas transmission line pressures (approximately 1000 to 1100 psig). In addition, the plant contains a Sulfur Removal Unit (SRU) process to convert the extracted hydrogen sulfide into elemental sulfur; the capacity of the SRU is 60 LTD of elemental sulfur. The elemental sulfur is sold and trucked out of the facility as a by-product chemical. The plant also contains ancillary processes which generate emissions, consisting of: two 41.000 MMBtu/hr steam boilers used primarily to supply process heat for amine regeneration and natural gas liquids processing, but also used to incinerate SRU tail gas produced from the SRU Stretford Unit which contains approximately 143 ppmvd total reduced sulfur (of which 21 ppmvd as H_2S); two tri-ethylene glycol (TEG) reboilers burning natural gas; an electrically-driven propane-refrigerant gas treatment system; and, a thermal oxidation unit (called a "ZTOF") utilized to safely handle and dispose waste hydrocarbon and SRU gases generated during facility start-ups, shutdowns, and process upsets.

  The *ExxonMobil – SYU Project* stationary source consists of the following 5 facilities:

  - Platform Harmony (FID= 8018)
  - Platform Heritage (FID= 8019)
  - Platform Hondo (FID= 8009)
  - Las Flores Canyon Oil and Gas Plant (FID= 1482)
  - POPCO Gas Plant (FID= 3170)

1.2.2 Facility Permitting History: The following permit actions have taken place since July 30, 1980:

PERMIT	FINAL ISSUED	PERMIT DESCRIPTION
ATC 4078	07/30/1980	The scope of the ATC was a two-phase project. The first phase to be built was a 30 MMSCFD gas processing capacity facility; and the second phase to be built was to be a 60 MMSCFD processing plant. The second phase was never built consistent with the ATC permit. Consistent with the New Source Review rule in effect on that date ATC 4078 was issued, the ATC triggered the requirement to apply BACT to the B-801 A/B NO_x emissions and BACT for the SRU SO_x emissions. An Air Quality Impact Analysis (AQIA) and emission offsets for any project criteria pollutant were not triggered by this ATC. With the fugitive emission calculations documented by ATC 4078, however, there is one significant aspect of the original NEI calculations that merits additional discussion. This is that POPCO's ATC 4078 application stated that an estimated quantity of 608 valves would be installed to build the Phase I facility rated at processing up to 30 MMSCFD of gas. The fugitive emissions attributed to the Phase I facility as specified and permitted under ATC 4078, were thus the 608 valves times the fugitive emission factor of that permit, for a total of 3.37 tons/year of fugitive ROC emissions (8.86 tons/year of total hydrocarbon emissions as stated in the ATC 4078 application). However, the installed valve count in the existing facility was actually 3,956 valves. The District has addressed this inconsistency with POPCO. The District contended that a correct ATC 4078 application would have identified a valve component count that should have been much closer to the 3,956 valves that were actually installed. However, in recognition of the significant time-span between the Phase I facility which was originally permitted and constructed in the early 1980's, and the fact that attention to and procedures for counting fugitive emission sources has become more sophisticated over time, the District has permitted, through ATC 9047, the entire existing facility's installed valve count of 3,956 valves.
PTO 4078	12/16/1983	The PTO was issued with an analysis similar to that of the ATC, including emission factors and BACT analyses. POPCO initially began operations under this PTO in late December 1983. During this early operating period, the facility was found to have delivered sales gas with a higher than allowed by PUC standard hydrogen sulfide content to the main PUC gas distribution line. The facility was required by several agencies to cease operations until the source of this problem was identified and corrected. Subsequent to implementing several corrective actions, the facility began routine operations under this PTO in July 1984.
PTO 8092	06/15/1990	This PTO was issued as part of the required triennial permit reevaluation process performed pursuant to the California Health and Safety Code, Section 42301(e). The primary purpose of a reevaluation is to update the existing PTO to reflect the requirements of any new rules and regulations. PTO 8092

PERMIT	FINAL ISSUED	PERMIT DESCRIPTION
		incorporated equipment specific emission limits for each permitted and exempt emission unit associated with the existing 30 MMSCFD facility built per the original ATC 4078. The previous PTO 4078 only specified overall facility emission limits. In addition, a revised fugitive emissions limit for all the installed valves and fittings in hydrocarbon service was specified in this permit, consistent with EPA/Radian Six Gas Plant Study (published circa 1983) derived emission factors adopted by the District at that date. These revised and updated fugitive emission factors form the basis of this facility's PTE emission calculations.
PTO 9215	09/27/1996	This PTO was issued as a follow-up to ATC 9215-01 and ATC 9215-02 issued by the District for installation of low-NO_x burners in the process boilers B-801A/B pursuant to the requirements of District Rule 342. The PTO documents the emission limits, control equipment, process controls, source testing and recordkeeping requirements for this equipment consistent with District Rule 342 and the New Source Review Rule 205.C.
ATC/PTO 9471	04/16/1991	This ATC documents the installation of a vapor recovery system for the facility's pressure drain system to comply with District Rule 359 - *Flares and Thermal Oxidizers*. The vapor recovery system is designed to fully recover up to 10 SCFM of sour gas released to this system back into the facility's gas processing equipment. Previous to this system's installation, these sour vapors were released to the facility's thermal oxidizer. Subsequent to June 1994, and the adoption of District Rule 359, such planned releases or sour gas (in excess of 239 ppmv total sulfur) were prohibited.
ATC 9471-01	03/06/1997	This permit allowed for the a tie-in to the Pressure Drain System vapor recovery system to effect the full control of pig receiver pressure blowdowns. Because of the high sulfur content of this gas, the full capture of the pig receiver blowdown eliminates 1.18 lb/hr, and 0.07 tons/year of facility SO_x emissions.
ATC 9487	04/16/1996	ATC authorizes the installation of a Flare Volume Metering System to measure the volumetric flow rate and total volumes of gas/vapor release to the facility's thermal oxidizer. The equipment specified in this ATC is required to meet the requirements of District Rule 359 (*Flare Minimization Plan*).
ATC 9047	02/04/1997	This ATC authorized a significant expansion of the existing facility's gas processing capacity from 30 MMSCFD to 60 MMSCFD of raw sour gas containing up to 2.67 percent hydrogen sulfide (H_2S). To accomplish this, the facility was modified to: 1) add new pressure vessels to debottleneck certain existing gas processing equipment; 2) add additional components which emit fugitive hydrocarbon emissions; 3) significantly modify the existing Sulfur Removal Unit (SRU) to debottleneck its acid gas processing capacity and authorize an increase from it of permitted oxides of sulfur (SO_X) mass emissions; and 4) restrict peak hourly and daily volumes of gas sent to the existing facility's John Zink Thermal Oxidation Flare (or "ZTOF") during planned activities such as equipment maintenance and facility startup.

PERMIT	FINAL ISSUED	PERMIT DESCRIPTION
		In addition: The Project resulted in a reduction of fugitive hydrocarbon emissions as compared to the prior facility's permitted emissions. This occurred as a result of POPCO retrofitting existing facility fugitive emitting valves and fittings with Best Available Retrofit Control (BARCT) technology, and implementation of Best Available Control Technology (BACT) into any new fugitive emitting component; The Project implemented BACT for the control of SO_x emissions from: A) the modified SRU unit and its increased capacity; B) potential SRU failures and flaring of acid gas; and C) processes which combust natural gas fuel; The modified project description and operational restrictions specified in the permit that apply to planned uses of the ZTOF during equipment maintenance and facility startup activities will result in reduced hourly flaring combustion emissions, such that no violation of the ambient air quality standard for NO_2, CO, SO_x, PM_{10} and TSP will result.
ATC 9047-01	02/04/1997	ATC mod application to limit hourly Startup Flaring rate. This reduced rate ensures compliance with AAQS for 1-hour NO_2 standard; the ZTOF operational restrictions applied for in the ATC 9047-01 application were directly incorporated into ATC's 9047 final decision document (FDD). As such, the issuance of the modified ATC 9047-01 permit was considered a part of ATC 9047.
ATC 9675	02/28/1997	Installation of a Natural Gas Liquids (NGL) transfer system between the POPCO and ExxonMobil processing facilities.
ATC 9693	04/04/1997	Low-NO_x burner modifications to the two Utility Boilers.
ATC 9047-02	07/22/1997	This ATC authorized POPCO to install additional components in fugitive hydrocarbon service associated with the gas plant expansion permitted under ATC 9047, to incorporate some minor administrative amendments to the descriptions, evaluations and conditions contained in ATC 9047, as well as to incorporate some minor component count revisions for the NGL Interconnect Project of ATC 9675. ROC emissions increased by 9.51 lb/day and 1.74 tpy.
PTO 8092-02	02/08/1999	Eliminated DAS and odor monitoring conditions from this permit. The conditions were moved to ATC 9047.
ATC 9047-03	02/09/1999	This ATC modified permit conditions 37 (Ambient Air Quality and Odor Monitoring Program) and 41 (Central Data Acquisition System) and added permit Condition 41.a (Data Acquisition System Operation and Maintenance Fee).
Trn O/O 8092-01	04/13/1999	Application to transfer operator from POPCO to ExxonMobil Company USA.
ATC 9047-05	10/22/1999	his ATC authorized the expansion of the gas plant to process an annual average inlet (raw) gas rate of 75 MMSCFD and a daily maximum of 75 MMSCFD inlet (raw) gas on any given day. Permit condition 15 (*Facility Use Limitations*) was revised.
ATC 9047-04	12/22/1999	This ATC permit addressed all remaining SCDP issues from the issuance of ATC 9047. Included were: (a) an increase in the fugitive hydrocarbon component count, (b) ROC emissions from the Stretford Oxidizer Tank, (c) solvent use, (d) planned flaring and (e) vacuum truck use. In addition, the facility emission tables in Section 5 were all revised and emission offset tables in Section 7 were added.

PERMIT	FINAL ISSUED	PERMIT DESCRIPTION
PTO Part 70 8092	09/05/2000	This permit consolidated the ATC and PTO's issued since PTO 8092 was first issued on 6/15/90. Federal Part 70 requirements were also incorporated into the permit at this time.
ATC/PTO Part 70 10767	08/20/2002	This permit allows POPCO to increase the daily inlet sour gas throughput from 75 MMSCFD to a maximum of 80 MMSCFD for gas containing a maximum of 7,000 ppmv H_2S. This permit did not allow an increase in POPCO's potential to emit; the rate increase was accomplished within the emission limits specified in POPCO's previous established in PTO/Pt 70 8092, issued September 5, 2000.
ATC/PTO Part 70 10932	12/27/2002	This permit allows POPCO to inject steam into the flame zone of Utility Boiler B-801A to comply with the emission limits of Part 70/PTO 8092. Injection of 50 psig steam shall be limited to no more than 650 lb/hr, as verified by an equivalent steam delivery pressure to the Utility Boiler burner steam injection wand of no more than 10 psig. POPCO shall implement the District - approved Steam Injection Operating and Monitoring Plan for the life of the project. This permit does not allow an increase in POPCO's potential to emit.
ATC/PTO Part 70 11001	05/19/2003	This permit allowed ExxonMobil to decrease their stationary source de minimis ROC emissions total by adding a portion to the stationary source NEI ROC total. The additional ROC NEI was offset by four ERC's generated due to various facility shutdowns.
ATC/PTO Part 70 11130	04/2/2004	This permit reduces the fugitive hydrocarbon leak threshold for valves and flanges/connections in gas/vapor service to 100 ppmv. Four hundred thirty four (434) standard valves – subject to BARCT will be reclassified as "Category C" valves, and one thousand three hundred two (1,302) standard flanges/connections will be reclassified as "Category C" flanges/connections.
PTO Part 70 8092-03	07/30/2004	This permit changes the monitoring requirement from wastewater sampling to ROC emissions source testing for ongoing justification of the Rule 325.B.3 exemption for wastewater tanks T-807 and T-601. It also defers the demonstration of the Rule 325 exemption (via source test) for tank T-807 until the tank is put back in service.
DOI 0034	10/13/2004	This ERC application is for the creation of ROC ERCs by decreasing the minor leak detection threshold to 100 ppmv for 919 valves and 2,757 flange/connection components in hydrocarbon service at the POPCO and Las Flores Canyon facilities.
PTO 11598	10/17/2005	This permit was issued due to the March 17, 2005 revision to District Rule 202 {*Exemptions to Rule 201*} that resulted in the removal of the compression-ignited engine (e.g., diesel) permit exemption for units 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 permit covers in-use firewater pumps, with annual maintenance and testing operation limited by NFPA 25.
PTO 11599	09/22/2005	This permit was issued due to the March 17, 2005 revision to District Rule 202 {*Exemptions to Rule 201*} that resulted in the removal of the compression-ignited engine (e.g., diesel) permit exemption for units rated over 50 brake horsepower (bhp). That

PERMIT	FINAL ISSUED	PERMIT DESCRIPTION
		exemption was removed to allow the District to implement the State's Airborne Toxic Control Measure for Stationary Compression Ignition Engines (DICE ATCM). This permit covers In-Use emergency standby (E/S) generators with annual maintenance and testing operation limited to 20 hours or less.
ATC/PTO 12020	08/15/2006	This permit was issued to divert reaction furnace combustion gases from the boiler to the thermal oxidizer during cold startups. Unplanned flaring was added to permitted emissions.
PTO 12680	09/25/2008	This permit was issued for an existing 2.100 MMBtu/hr process heater which became subject to permit due to the 1/17/2008 revision to Rule 202. This permit enforces the requirements of Rule 361.
PT-70/Reeval 8092 - R7	06/12/2009	Triennial reevaluation of Part 70 PTO 8092 and consolidation of active permits.
PTO 13163	07/23/2010	This permit was issued for a dual carbon canister system to control ROC emissions from tank T-601. This permit enforces the requirements of Rule 325.
PT-70 ADM 13743	08/25/2011	This administrative amendment changed the responsible official from Frank Betts to Troy Tranquada and corrected the spelling of James D. Siegfried's name.
ATC/PTO 13488	02/01/2012	This permit incorporated fugitive hydrocarbon components that were previously recorded as de minimis into the permit. The additional ROC emissions are considered NEI and offsets were provided.
PT-70/Reeval 8092 - R8	03/01/2013	Triennial reevaluation of Part 70 PTO 8092 and consolidation of active permits.
PT-70 ADM 14389	04/25/2014	Change alternate responsible official from Mr. John Doerner to Mr. Keith Chiasson.
ATC 14567	01/13/2015	Temporary tie-in of the LFC vacuum flash overhead gas and condensate stabilizer overhead gas to the POPCO gas plant.
PT-70 ADM 14636	05/12/2015	Change designated responsible official from Troy Tranquada to Kartik Garg.
Exempt 14643	05/15/2015	Temporary use of one 10 MMBtu/hr burner to be used to dry out the reaction furnace (EA-412).
Exempt 14669	06/19/2015	Temporary use of two 2,500 gallon poly tanks for temporary (less than 60 days) storage of triethylene glycol.
PTO Mod 8092 04	07/30/2015	1) Revise the source testing requirements for the Stretford Oxidizer Tanks, 2) Incorporate the equipment leak standards of the Oil and Natural Gas Production MACT (40 CFR 63 Subpart HH), and 3) Identify ancillary equipment, compressors, and the GPU glycol dehydration unit at the facility as subject to Subpart HH.
Exempt 14726	09/29/2015	Temporary use of one 10 MMBtu/hr burner to dry out the interior of the reaction furnace.
Exempt 14760	12/24/2015	Temporary use of two 21,000 gallon tanks for storage of lean sulfinol amine.
Exempt 14798	02/18/2016	Temporary use of 500 gallon tote tanks for methanol transfer.
PT-70 ADM 14850	06/14/2016	Change alternate responsible official to Ken Dowd.
Exempt 14859	06/21/2016	Temporary loading and storage of twelve 500 gallon totes for up to 60 days.
PT-70 ADM 14916	09/16/2016	Change designated responsible official from Kartik Garg to Jing Wan.
ATC 14951	03/10/2017	One 2016 Isuzu 95 bhp emergency diesel generator.

PERMIT	FINAL ISSUED	PERMIT DESCRIPTION
ATC 14967	04/14/2017	Installation of a vapor scrubber system to be used in case of vessel depressurization during temporary preservation period.
PT-70 ADM 15082	08/01/2017	Change designated alternate responsible official from Ken Dowd to Bryan Wesley.
PTO 14967	01/04/2018	Installation of a vapor scrubber system to be used in case of vessel depressurization during temporary preservation period.
PTO 14951	04/25/2018	One 2016 Isuzu 113 bhp emergency diesel generator.
PT-70/Reeval 8092 - R9	04/26/2018	Triennial reevaluation of Part 70 PTO 8092 and consolidation of active permits.
PTO Mod 8092 05	07/10/2019	Corrected listed actual rated heat input capacity of device #002352.
PT-70 ADM 15423	09/06/2019	Change of designated alternate official from Bryan Wesley to Michael Vanderlinden and change the legal name of ExxonMobil Production Company to ExxonMobil Upstream Oil & Gas Company.
PTO Mod 8092 06	09/26/2019	Add permit conditions to address pipeline shutdown compliance issues.
PT-70 ADM 15563	07/22/2020	Change of responsible official from Jing Wan to Bryan S. Anderson.
PT-70 ADM 15698	TBD**	Change of designated alternate responsible official from Michael Vanderlinden to Jeff Patterson.

** Final permit issued at issuance of this permit

1.3. Emission Sources

The emissions from the POPCO Gas Plant come from two utility boilers, a sulfur plant, fugitive components, one methanol storage tank, two wastewater storage tanks, a thermal oxidizer, five IC engines, and solvent use. Section 4 of this permit provides the District 's engineering analyses of these emission sources. Section 5 of this permit describes the allowable emissions from each permitted emissions unit and also lists the potential emissions from non-permitted emission units.

1.4. Emission Control Overview

Air pollution emission controls are utilized at the POPCO Gas Plant. The emission controls employed at the facility include:

- An Inspection & Maintenance program for detecting and repairing leaks of hydrocarbons from piping components and compressors to reduce ROC emissions by approximately 80 percent, consistent with the requirements of NSPS KKK and Rule 331.
- Implementation of BACT and BARCT levels of control for fugitive hydrocarbon emissions from piping components as required by ATC 9047.
- Use of low-NO_X burners on the two utility boilers.
- Use of a thermal oxidizer for the combustion of waste gases.
- Use of low sulfur plant natural gas as fuel gas for the utility boilers.
- Use of two sulfur recovery processes; first a "Claus" type process, and further H_2S reduction by processing the Claus effluent gases through a Beavon and Stretford Tail Gas Unit.
- Use of a vapor recovery systems to collect hydrocarbon vapors from various tanks and vessels.

- Use of carbon canisters on wastewater tank vents to control ROC emissions and eliminate odors.
- An Enhanced Inspection & Maintenance program for detecting and repairing leaks of hydrocarbons from standard valves and flanges/connection at a lower threshold of 100 ppmv to create emission reduction credits.

1.5. *Offsets/Emission Reduction Credit Overview*

1.5.1 Offsets: The emissions from ExxonMobil-Santa Ynez Unit (SYU) Project stationary source must be offset pursuant to District Rule 802, *New Source Review*, as updated on August 25, 2016. For projects permitted after August 25, 2016, offsets are required for ROC, NO_X, SO_X, PM_{10}, and $PM_{2.5}$ as the stationary source exceeds the 25 tons/year threshold for each of these pollutants.

1.5.2 ERCs: Per DOI 0034 POPCO generated 0.263 TPQ ROC (1.052 TPY) due to implementation of an enhanced fugitive inspection and maintenance program as permitted under ATC/PTO 11130.

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 permits (and conditions therein) issued pursuant to the OCS Air Regulation are federally enforceable. All these requirements are enforceable by the public under CAAA. (*see Section 3 for a list of the federally enforceable requirements)*.

1.6.2 Insignificant Emissions Units: Insignificant emission units are defined under District Rule 1301 as any regulated air pollutant emitted from the unit, excluding HAPs, that are less than 2 tons per year based on the unit's potential to emit and any HAP regulated under section 112(g) of the Clean Air Act that does not exceed 0.5 ton per year based on the unit's potential to emit. Insignificant activities must be listed in the Part 70 application with supporting calculations. Applicable requirements may apply to insignificant units. See Attachment 10.3 for a list of Part 70 insignificant units.

1.6.3 Federal Potential to Emit: The federal potential to emit (PTE) of a stationary source does not include fugitive emissions of any pollutant, unless the source is: (1) subject to a federal NSPS/NESHAP requirement which was in effect as of August 7, 1980, or (2) included in the 29-category source list specified in 40 CFR 51.166 or 52.21. The federal PTE does include all emissions from any insignificant emissions units. (*See Section 5.4 for the federal PTE for this source)*

1.6.4 Permit Shield: The operator of a major source may be granted a shield: (a) specifically stipulating any federally enforceable conditions that are no longer applicable to the source and (b) stating the reasons for such non-applicability. The permit shield must be based on a request from the source and its detailed review by the District. Permit shields cannot be indiscriminately granted with respect to all federal requirements. A request for a permit shield was not made.

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. POPCO made no request for permitted alternative operating scenarios.

1.6.6 Compliance Certification: Part 70 permit holders must certify compliance with all applicable federally enforceable requirements including permit conditions. Such certification must accompany each Part 70 permit application; and, be re-submitted annually on or before March 1st or on a more frequent schedule specified in the permit. A “responsible official” of the owner/operator company whose name and address is listed prominently in the Part 70 permit signs each certification. (*see Section 1.6.9 below)*

1.6.7 Permit Reopening: Part 70 permits are re-opened and revised if the source becomes subject to a new rule or new permit conditions are necessary to ensure compliance with existing rules. The permits are also re-opened if they contain a material mistake or the emission limitations or other conditions are based on inaccurate permit application data. This permit is expected to be re-opened in the future to address new monitoring rules, if the permit is revised significantly prior to its first expiration date. *(see Section 4.11.3, CAM).*

1.6.8 Hazardous Air Pollutants (HAPs): The requirements of Part 70 permits also regulate emission of HAPs from major sources through the imposition of maximum achievable control technology (MACT), where applicable. The federal PTE for HAP emissions from a source is computed to determine MACT or any other rule applicability. (*see Sections 4.14 and 5.5)*.

1.6.9 Responsible Official: The designated responsible official and their mailing addresses are:

Mr. Bryan Anderson (California Operations Asset Manager.)
ExxonMobil Production Company
(a division of Exxon Mobil Corporation)
12000 Calle Real
Goleta, CA 93117
Telephone: (805) 961-4078

and

Mr. Jeff S. Patterson (Senior Superintendent)
ExxonMobil Production Company
(a division of Exxon Mobil Corporation)
12000 Calle Real
Goleta, CA 93117
Telephone: (805) 961-4080

Figure 1.1 Location Map Santa Ynez Unit Project - Onshore

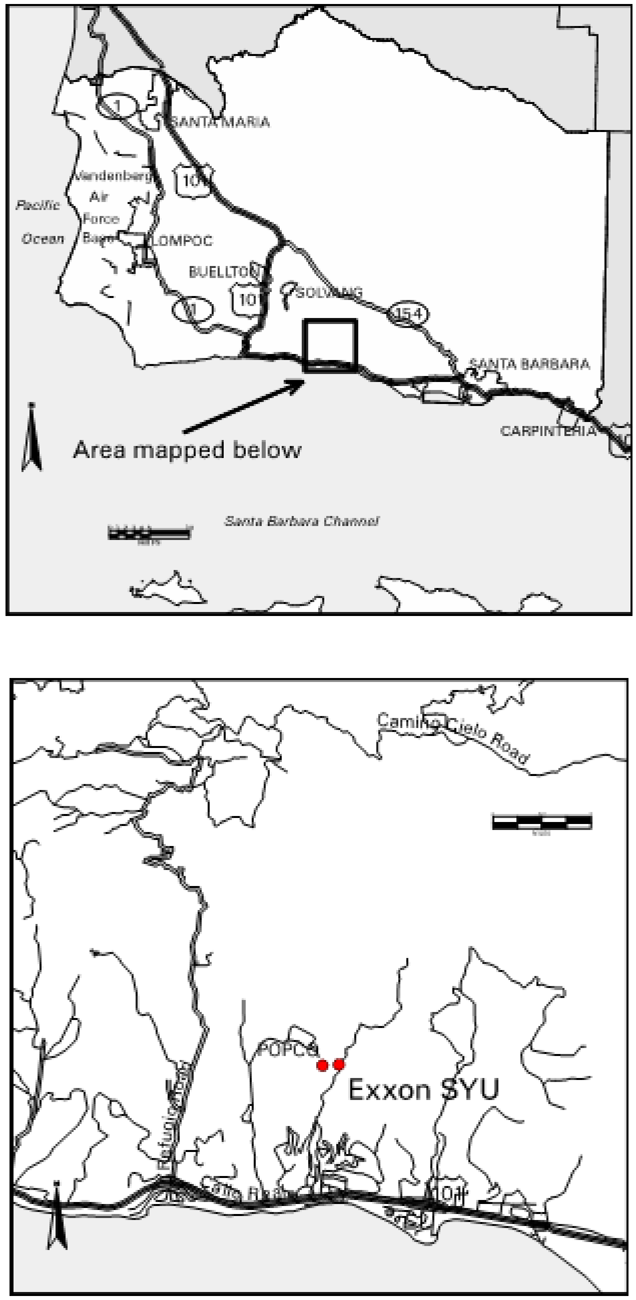
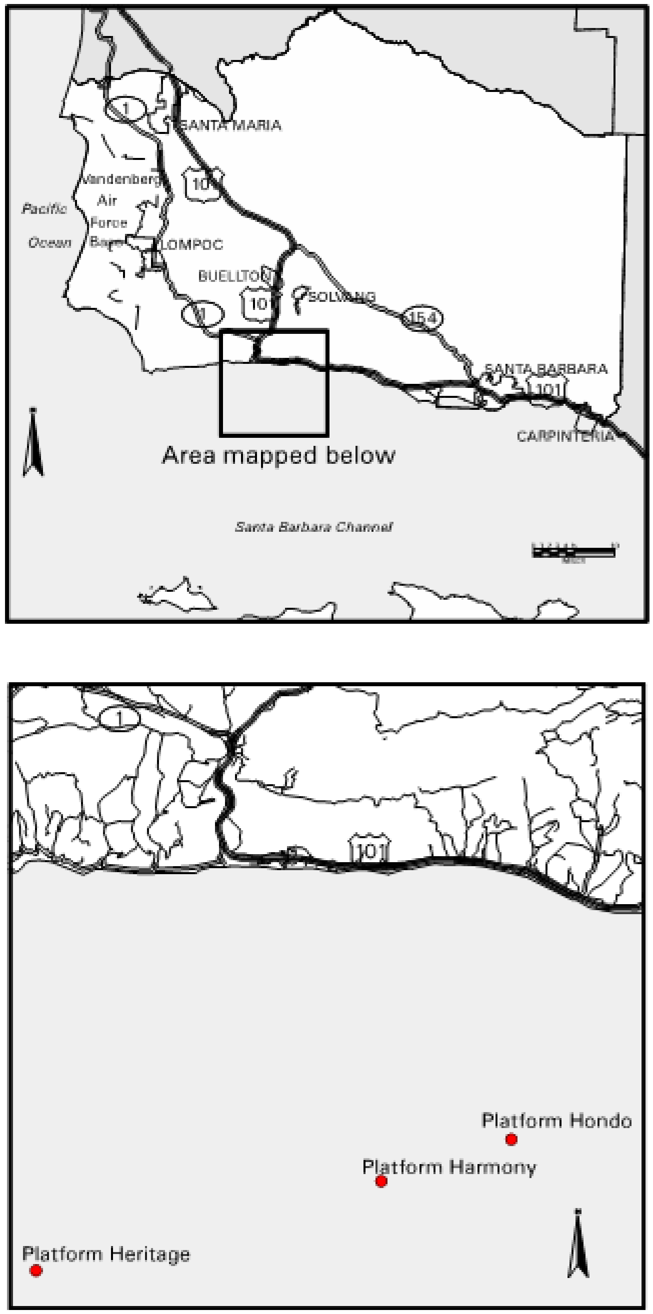


Figure 1.2 Location Map Santa Ynez Unit Project - Offshore



2.0 Description of Proposed Project and Process Description

2.1. Project and Process Description

2.1.1 Project Ownership: Pacific Offshore Pipeline Company (POPCO), an unincorporated division of Exxon Mobil Corporation, owns the Gas Plant. ExxonMobil Production Company (ExxonMobil), an unincorporated division of Exxon Mobil Corporation, operates the Gas Plant. ExxonMobil is the major owner and operator of the remaining Santa Ynez Unit facilities, including OCS Platforms Hondo, Harmony, and Heritage.

2.1.2 Geographic Location: The onshore facilities are located in Las Flores Canyon (LFC) approximately 20 miles west of Santa Barbara, California in the southwestern part of Santa Barbara County. The property consists of a pie-shaped piece of property, approximately 1500 acres, starting on the north side of Highway 101 and continuing to the north. Of this area, approximately 110 acres have been cleared with 34 acres containing facilities and the remainder left as open space. A paved road about 1.5 miles long from Calle Real, the frontage road off Highway 101, provides access to the facility.

Within the property, approximately 17 acres is leased to POPCO to operate a natural gas treating facility. Small areas of the property provide space for utility connections by Southern California Gas Company, Southern California Edison Company as well as a pump station by the All American Pipeline Company for crude transportation. The remaining part of the property is used to operate ExxonMobil’s LFC oil and gas plant.

The property is located within the western part of the Transverse Ranges physiographic province of Southern California. This region is characterized by predominately east west oriented topographic and structural elements. The canyons area is predominately rural in character, with some agricultural and industrial uses present.

2.1.3 Facility Description: The SYU Project develops production from three platforms (Platforms Hondo, Harmony and Heritage) located offshore California in the Santa Barbara Channel. The production is transported to shore through a subsea pipeline and treated in production facilities located in Las Flores Canyon. The POPCO Gas Plant processes the majority of the natural gas produced by the SYU Project. Overall recovery from the development totals approximately 500 million barrels of crude oil and almost one trillion cubic feet of natural gas.

The POPCO Gas Plant receives the raw natural gas from the offshore platforms via the 12-inch produced gas pipeline. The Gas Plant produces PUC quality natural gas, propane, butane and sulfur products for sale. The recovered produced water is treated to acceptable standards and returned to Platform Harmony for release to the ocean in accordance with NPDES permit No. CA0110842.

2.1.4 Gas Dehydration, Sweetening and Fractionating: The gas plant is designed to process a total of 80 MMSCFD of sour gas from the pipeline, and if the sour gas approaches the design limit of 2.67 percent hydrogen sulfide content only 60 MMSCFD of gas can be processed. The lower gas processing throughput limit as a function of higher hydrogen sulfide content is due to SRU throughput limitations. The gas plant separates the hydrogen sulfide (H_2S), propane, butane, and heavier hydrocarbons (C_5+) from the sour gas. The treated natural gas, comprised primarily of methane and ethane, is then sold to the public utility company (Southern California Gas Company). The H_2S is converted to elemental liquid sulfur and is trucked offsite. Propane, butane and heavier hydrocarbons are fractionated from the gas condensate in the plant's Stabilizer tower, and sent to NGL storage vessels. The Stabilizer overhead gases are further processed in the plant's gas processing system to become sales gas.

2.1.5 Sales Gas Shipping: Sales gas is sold directly to the Southern California Gas Company through a local Odorant and Metering station, where it is metered, odorized and the pressure is regulated.

2.1.6 Natural Gas Liquids Storage and Shipping: Natural gas liquids (NGL) are produced from fractionation of the gas condensates that are collected in the plant gas processing equipment, in the facility Stabilizer tower. The NGL is comprised of propane and heavier molecular weight hydrocarbons. NGL is stored in three pressurized "bullet" tanks.

Most of the NGL is sent via a pipeline to the adjacent ExxonMobil facility for further fractionation into propane, butane, and a residual natural gas liquid intermediate product. Some of the propane product (some butane also) will be trucked offsite from the ExxonMobil facilities. The NGL and butane fractions will be blended back into Exxon's treated crude to the maximum extent feasible consistent with that project's county land use permit requirements.

2.1.7 Sulfur Recovery Unit: Acid gas from the amine unit is processed in the SRU in three stages. The first stage is a "Claus" reaction process, where H_2S is catalytically converted to elemental sulfur. The elemental sulfur from this part of the SRU is trucked out of the facility for use as a fertilizer and other industrial and commercial uses.

The second stage is a "Beavon" unit, where the Claus tailgas residual SO_2 content is converted back into H_2S. This is done with a catalytically induced hydrogenation reaction process.

The third stage of the SRU is processing of the H_2S enriched Beavon tailgas through a Stretford process. The Stretford process utilizes an aqueous-based vanadium catalyzed oxidation-reduction system to selectively absorb H_2S from the Beavon tailgas in a two-stage contactor system. The H_2S, once absorbed, is converted to elemental sulfur. This sulfur is skimmed from the Stretford solution and sent to a filter press to remove residual Stretford solution prior to truck shipment from the plant as a hazardous waste product (State of California designation). The Stretford solution is both skimmed of sulfur in the oxidizer tanks and is also regenerated in these tanks. Regenerated Stretford solution is then recycled back into the contactors to remove additional H_2S from the Beavon tailgas.

In 1997, SRU modifications included a new burner system, incorporation of a pure oxygen feed system, and other process controls to accept up to 60 LTD of H_2S for processing (up from the prior 30 LTD capability). The additional SRU throughput capability is gained through substituting pure oxygen for ambient air to combust the SRU acid gas feed. The use of pure oxygen (delivered from the LOX storage tank and vaporizer system) in effect backs out the inert nitrogen that is passed through the SRU when ambient air is used. Removing nitrogen, thus allowed the existing SRU to be hydraulically de-bottlenecked to handle the anticipated additional acid gas flows generated by the 60 to 80 MMSCFD of sour gas processing capacity.

This process employs what is considered Best Available Control Technology that is designed to remove at least 99.9 percent of the mass H_2S from the acid gas, or reduce the residual H_2S concentration in the SRU tailgas exiting the final Stretford Tailgas Unit treatment process to no more than 100 ppmv (dry basis), whichever is the more stringent requirement. The SRU process, however, is not nearly so effective at removing other reduced sulfur species such as mercaptans, carbon disulfide, and carbonyl sulfide either entering in the acid gas feed, or generated as a byproduct through the processing of the SRU inlet acid gas. These other reduced sulfur compounds also contribute to this processes total SO_x emissions. Two additional performance standards control the total SO_x emissions emitted by the SRU process; these standards are the 40 CFR, Subpart LLL requirements, and the total SO_x mass emissions cap of the process. POPCO has proposed a total sulfur reduction efficiency performance of this process which at and below 20 LTD achieves 98.0 %, and above 20 to 60 LTD achieves 99.9% total sulfur reduction, as well as no more than 5.44 lb/hr of SO_2 emissions from incineration of the SRU tailgas in the Utility Boilers.

2.1.8 Waste Gas and Emergency Flaring: The gas plant is equipped with closed vent systems (hydrocarbon and acid gas manifolds) to collect all planned and unplanned releases of vented gases for incineration in the flare system (ZTOF & LRGO). Venting of process gases to the flare is expected due to routine planned equipment commissioning and purging of vessels for maintenance. In addition, unplanned, emergency equipment failures and other process upsets may also vent gases to the LRGO equipment.

In ATC 9047, two significant ZTOF/LRGO operating scenarios were evaluated pursuant to Air Quality Impact Analyses (AQIAs). One scenario was the impact associated with an "uncontrolled" emergency shutdown failure of the modified SRU. This uncontrolled event has the potential to generate a localized exceedance of the state and federal primary ambient air quality standards for SO_2. Pursuant to that ATC and land-use permit condition E-5, POPCO identified a SRU failure mitigation system that eliminates excess flaring associated with SRU failures, and thus prevents the air quality standard violation, if operated consistent with the conditions of this permit.

The other flaring scenario evaluated by an AQIA was facility startup flaring. This AQIA indicated that to prevent localized exceedance of the NO_2 primary standard (1 hour), the startup flaring rate as previously permitted in PTO 8092 must be reduced by 50 percent. Pursuant to a modified ATC 9047-01 application submitted by POPCO, a 50 percent reduced planned hourly flaring rate was specified, with a duration increase from 12 to 24 hours as a new limit pursuant to the conditions of ATC 9047. No ZTOF or plant equipment modifications were required to comply with these revised planned flaring limits; these limits represent reduced hourly capacity utilization of the ZTOF.

Refer to the AQIA discussion section of ATC 9047 for a more detailed discussion of these two AQIAs.

2.1.9 Vapor Recovery System: There are two vapor recovery systems in this facility. One is for the NGL loading rack operations; in this system vapors from pressurized tank trucks are returned to the facility NGL tanks via a vapor balance line. As this system is comprised of valves, fittings, and hard-piping, the ROC emissions generated from these vapor recovery system components are calculated as part of the facility fugitive emissions inventory.

The other vapor recovery system is that attached to the facility Drain Systems (Pressure Drain System, TEG Drain System and Sulfinol Drain Systems) and the pig receiver. Because this system is comprised of valves, fittings, and hard-piping systems with no possible direct to atmosphere vent path, the ROC emissions generated from these vapor recovery system components are calculated as part of the facility fugitive emissions inventory.

2.1.10 Wastewater Treatment: Wastewater is generated by the existing facility's gas processing equipment. The existing system is comprised of a closed piping system, a Sour Water Stripper (SWS), and two (2) wastewater holding tanks (T-807 and T-601) which are used in an interchangeable manner. The Sour Water Stripper handles water produced from systems that handle sour and hydrocarbon gases. All produced water from the sour and hydrocarbon gas systems is first sent to the SWS, where the water is heated to drive off most of any dissolved hydrocarbons and sulfides (primarily H_2S). The gases driven out of the water by the SWS are commingled with the SRU's acid gas feed stream and processed in the SRU where the H_2S is converted to elemental sulfur, and the hydrocarbons are oxidized to CO_2.

The SWS-system cleaned water is then sent either to tank T-807 or T-601. T-807 has a capacity of 8,812 gallons and usually serves as a short-term storage and flow surge system for the cleaned water from the SWS. The tank vent is equipped with a carbon adsorption device to control any residual odorous emissions from the cleaned water. After a short-term in T-807 the cleaned sour water is then usually delivered to tank T-601 prior to being pumped through a pipeline to the LFC Produced Water Treating System. T-601 has a capacity of 91,400 gallons, and it usually receives water from the SWS treatment system described above, as well as water from the boiler blowdown and boiler feed water systems. The majority of throughput into tank T-601 is from boiler blowdowns. Boiler blowdown water is non-hazardous and does not contain any appreciable hydrocarbons or sulfides, but it does have a relatively high solids content due to solids concentration from its use to make steam. The tank T-601 vent is also equipped with a dual carbon canister control system to control ROC emissions and any odors from this system.

2.1.11 Utility Boilers: The two 41.000 MMBtu/hr Babcock and Wilcox steam boilers (B-801A and B-801B) are fired on plant natural gas and provide process steam for the POPCO Gas Plant. The boilers are also used to combust residual Stretford tailgases from the tail gas cleanup unit.

2.2. Support Systems

2.2.1 Pipeline and Pipeline Pigging Activities: The POPCO Gas Plant receives produced sour gas and water/gas condensates via a 12 inch undersea and underground pipeline from ExxonMobil’s Platform Hondo. The capacity of this line is 90 MMSCFD, with up to 80 MMSCFD to POPCO and through a branch of this line, up to 15 MMSCFD to ExxonMobil’s LFC oil and gas plant. The offshore-to-onshore part of the pipeline into the POPCO facility is typically pigged once or twice per day to remove condensate and water build up in the line. About once per week the pig receiver is taken out of service, and de-pressured, to remove the accumulated pigs.

Produced gas is shipped from the plant via pipeline directly to the public utility company (Southern California Gas Company). The Gas Company maintains an Odorant and Metering Station and a Pressure Limiting Station directly adjacent to the gas plant.

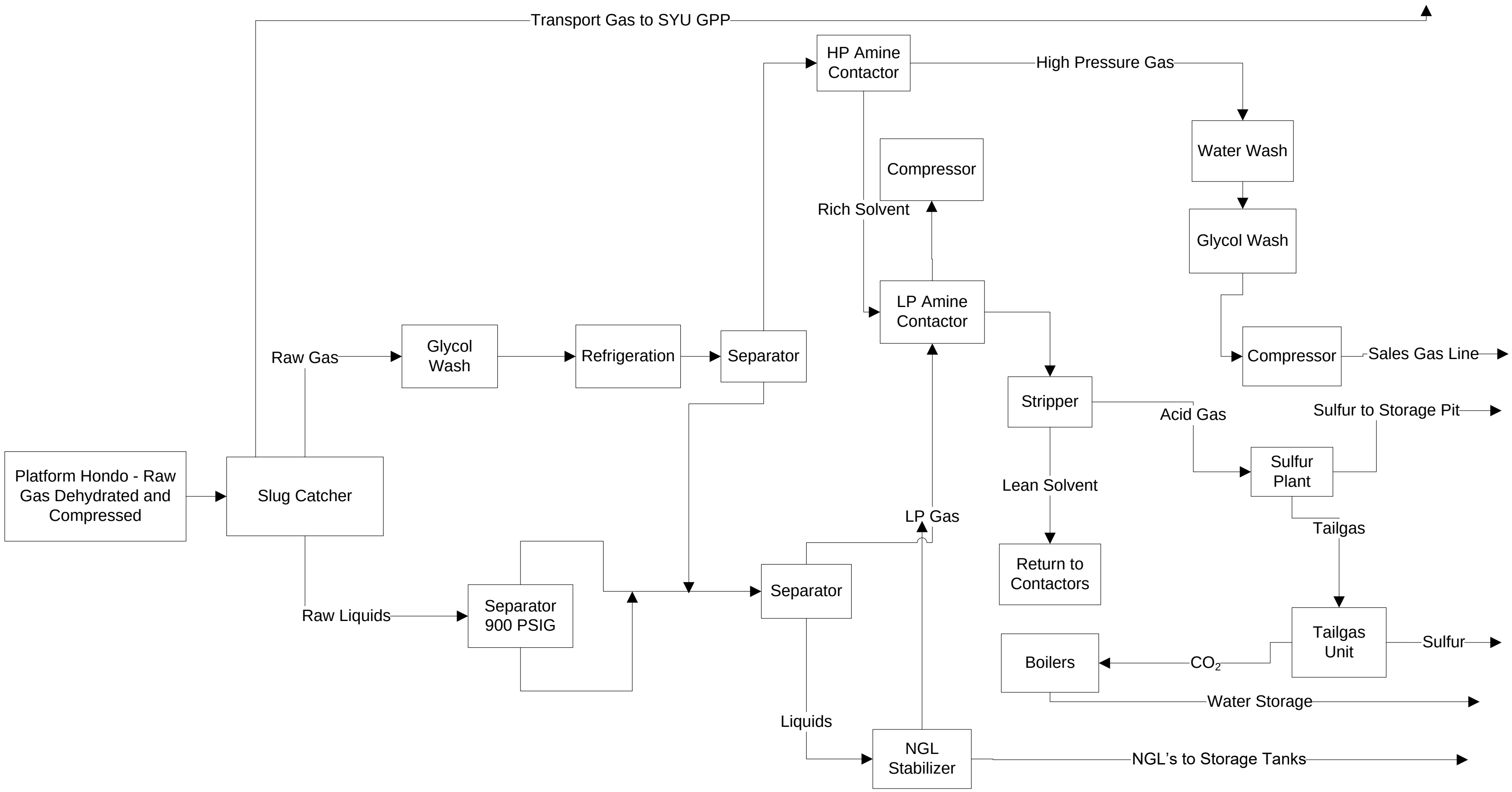
2.2.2 Maintenance Activities: POPCO performs a variety of maintenance activities, including welding and painting. Equipment use includes gas-powered generators, welders, forklifts and man-lifts.

2.2.3 Planned Process Turnarounds: It is anticipated that partial or complete shutdown of the gas plant for maintenance purposes may occur one or more times each year. These shutdowns are anticipated to result in some venting of gases to the flare system. Refer to Section 4 for a description of flare emission controls and Sections 5 for additional information on shutdown emissions.

2.3. Detailed Process Equipment Listing

A detailed listing of permitted and exempt equipment authorized under this permit is included in Attachment 10.3.

Figure 2.1 POPCO Gas Processing Plant Block Flow Diagram



3.0 Regulatory Review

3.1. *Rule Exemptions Claimed*

⇒ District Rule 202 (*Exemptions to Rule 201*): POPCO qualifies for a number of exemptions under this rule. An exemption from permit, however, does not grant relief from any applicable prohibitory rule unless specifically exempted by that prohibitory rule. The following exemptions are approved by the District:

- As of August 21, 2017, the *de minimis* increases (per Section D.6) are:

	ROC (lb/day)
POPCO	0.3999
LFC	0.0050
Platform Harmony	2.1734
Platform Heritage	5.7401
Platform Hondo	1.0476
Entire Source:	**9.3660**

- Section D.8 for routine surface coating maintenance activities.
- Section G.1.a for TEG Reboiler E-121 (process heater) fired exclusively with PUC quality natural gas (i.e., 4 ppmv H_2S and 80 ppmv total sulfur), rated at 1.200 MMBtu/hr.
- Section G.1.a for TEG Reboiler E-251 (process heater) fired exclusively with PUC quality natural gas (i.e., 4 ppmv H_2S and 80 ppmv total sulfur), rated at 1.400 MMBtu/hr.
- Section H.3 for all portable abrasive blasting equipment (excluding IC engines that are subject to Section F of Rule 202).
- Section L.6 for a 50,000 Btu/hr natural gas fired forced air furnace.
- Section Q.1 for a 5-gallon batch tank and associated metering pump.
- Section U.2.a for parts degreasers using unheated solvent with a surface area of less than 1 square foot.
- Section V.2 for the diesel storage tanks.
- Section V.3 for the lube oil storage tanks.
- Section V.8 for the Refrigerant make-up tank (T-151), propane 10,000-gallon capacity.

⇒ District Rule 311 (*Sulfur Content of Fuels*): Based on the exemption in Section A.1 for the manufacturing of sulfur or sulfur compounds, the sulfur recovery unit is exempt from the standards in this rule.

⇒ District Rule 321 (*Solvent Cleaning Operations*): Pursuant to Section B.2, the Safety-Kleen cold solvent degreaser is exempt from all provisions of this rule, except for Section G.2.

⇒ <u>District Rule 325 (*Crude Oil Production and Separation*)</u>: T-807 is currently out of service, and the permit requires ROC testing within 60-days of the date it returns to service. POPCO does not believe that T-807 can meet the 5 milligram per liter exemption criterion of section B.3. POPCO has proposed to demonstrate compliance with the 0.25 tons ROC per year threshold of section B.3. Failure to demonstrate T-807 is exempt would result in a violation of Rule 325, and require POPCO to comply with the control requirements in D.1 and D.2 of the Rule.

⇒ <u>District Rule 326 (*Storage of Reactive Organic Compound Liquids*)</u>: Per Section B.1.b, the following emission units are exempt from all provisions of the rule:

- Compressor Lube Tanks

⇒ <u>District Rule 331 (*Fugitive Emissions Inspection and Maintenance*)</u>: The following components are exempt from certain/all provisions of the rule:

- Components buried below ground (exempt from all requirements)
- One half inch and smaller stainless steel tube fittings that have been determined to be leak free by the Control Officer (exempt from all requirements)
- Components totally contained or enclosed such that there are no ROC emissions into the atmosphere are exempt from Sections F.1, F.2, F.3 and F.7.
- Components exclusively in heavy liquid service are exempt from Sections F.1, F.2, F.3 and F.7.
- 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 are exempt from Sections F.1, F.2 and F.7.

⇒ <u>District Rule 333 (*Control of Emissions from Reciprocating Internal Combustion Engines*)</u>: Per section B.1.d, the emergency standby IC engines are exempt from this rule.

⇒ <u>District Rule 346 (*Loading of Organic Liquids*)</u>: Per Section B.4, the transfer of liquefied natural gas, propane, butane or liquefied petroleum gases.

⇒ <u>District Rule 359 (*Flares and Thermal Oxidizers*)</u>: Per Section B.2, the acid gas flare header is exempt from all requirements, except Section D.2.

3.2. Compliance with Applicable Federal Rules and Regulations

3.2.1 <u>40 CFR Parts 51/52{*New Source Review (Nonattainment Area Review and Prevention of Significant Deterioration*)}</u>: The POPCO Gas Plant was permitted in 1980 under District Rule 205. The facility was subsequently modified in 1997 under District Rule 205.C. That rule was superseded by District Regulation VIII (*New Source Review*) in April of 1997. Compliance with PTO 8092 requirements and Regulation VIII ensures that the POPCO facility will comply with the federal NSR requirements.

3.2.2 <u>40 CFR Part 60 {*New Source Performance Standards*</u>: The following NSPS apply at the POPCO facility:

- Subpart A - General Provisions

- Subpart KKK - Standards of Performance for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants
- Subpart LLL - Standards of Performance for Onshore Natural Gas Processing; SO_2 Emissions
- Subpart OOOO – The POPCO gas processing plant operates the following equipment potentially subject to the requirements of this subpart:
    - Compressors (60.5365(b) and (c).
    - Storage vessels with a potential for VOC emissions greater than 6 tons/year (60.5365(3)).
    - Sweetening unit (60.5365(g))

  Equipment becomes subject to this subpart upon construction, modification, or reconstruction commenced after August 23, 2011.

3.2.3 40 CFR Part 61 {*NESHAP*}: This facility is not currently subject to the provisions of this Subpart.

3.2.4 40 CFR Part 63 Maximum Achievable Control Technology (MACT) Standards:
On July 30, 2015 the District issued PTO Mod 8092–04 to bring equipment into compliance with MACT requirements. These included: 1) Revised the source testing requirements for the Stretford Oxidizer Tanks, 2) Incorporated the equipment leak standards of the Oil and Natural Gas Production MACT (40 CFR 63 Subpart HH), and 3) Identified ancillary equipment, compressors, and the GPU glycol dehydration unit at the facility as subject to Subpart HH.

3.2.4.1 40 CFR Part 63 Maximum Achievable Control Technology (MACT) Standards Subpart HH:
On June 17, 1999, EPA promulgated a National Emission Standards for Hazardous Air Pollutants (NESHAP) for Oil and Natural Gas Production and Natural Gas Transmission and Storage (Subpart HH). POPCO submitted an *Initial Notification of Applicability* by June 17, 1999. On August 16, 2012 the EPA finalized revisions to the Oil and Gas MACT (40 CFR 63 Subpart HH). This revision removed the previous exemption for ancillary equipment and compressors in VHAP service from Subpart HH because of compliance with 40 CFR 60 Subpart KKK. In addition, the GPU glycol dehydration unit is no longer exempt under 40 CFR 63.764(e)(ii) and is classified as a "small glycol dehydration unit". Based on the *Initial Notification of Applicability* submittal and several subsequent letters from POPCO (02/15/02 and 05/14/02), as well as recent revisions to the Oil and Gas MACT, the District determined that the following equipment is subject to Subpart HH:

1. The Sulfinol Glycol Regeneration System
2. The NGL storage vessels (40 CFR 63.776 (b) (2)).
3. The GPU glycol dehydration unit (40 CFR 63.765(b)(1)(iii)
4. Ancillary Equipment and Compressors in VHAP service (40 CFR 63.769)

The District determined that the pressure storage vessels located at POPCO do not qualify as closed-vent systems per the definition in MACT. Therefore, section 63.773 Inspection and Monitoring requirements do not apply to these units. General MACT requirements applicable to this facility are contained in Condition 9.B.18.

3.2.4.2 *40 CFR Part 63 Maximum Achievable Control Technology (MACT) Standards Subpart EEEE* - On August 25, 2003, EPA promulgated a National Emission Standards for Hazardous Air Pollutants (NESHAP) for Organic Liquid Distribution (Non-Gasoline) Activities (Subpart EEEE). This MACT does not apply to oil and natural gas facilities as defined in 40 CFR 63.2334(c)(1).

3.2.4.3 *40 CFR Part 63 Maximum Achievable Control Technology (MACT) Standards Subpart ZZZZ* - The revised National Emission Standard for Hazardous Air Pollutants (NESHAP) for reciprocating internal combustion engines (RICE) was published in the Federal Register on January 18, 2008. An affected source under the NESHAP is any existing, new, or reconstructed stationary RICE located at a major source or area source.

Notifications are not required for existing stationary emergency RICE.

Existing emergency standby compression ignition RICE must comply with the following operating 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.

For any engine subject to oil change requirements, the owner or operator has the option of utilizing an oil analysis program in order to extend the specified oil change interval.

3.2.4.4 *40 CFR Part 63 Maximum Achievable Control Technology (MACT) Standards Subpart DDDDD* - On February 26, 2004, EPA promulgated a National Emission Standards for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial, and Institutional Boilers and Process Heaters (Subpart DDDDD). Boilers B-801 A and B were required to complete an initial tune-up and a one-time energy assessment by January 31, 2016 as described in Table 3 of Subpart DDDDD. After the initial tune-up, an annual tune-up is required. (Ref; 63.7495(b) and 63.7540)

3.2.5 40 CFR Part 64 {*Compliance Assurance Monitoring*}: This rule became effective on April 22, 1998. The following units at POPCO were either not subject to CAM or were found exempt from CAM requirements based on the section of the CAM defined in the table below:

District DeviceNo	Device Name	CAM Criteria not Met	CAM Exemption Claimed
2350	Boiler: B-801A	64.2.a.2	
2351	Boiler: B-801B	64.2.a.2	
2352	Sulfinol Teg Reboiler (B-251)	64.2.a.3	
2353	GPU Teg Reboiler (B-121)	64.2.a.3	
105204	Stretford Tailgas Incinerator		64.2.b.1.vi
7065	Thermal Oxidizer (ZTOF)		64.2.b.1.vi

3.2.6 40 CFR Part 68 {*Chemical Accident Prevention Provisions*}. POPCO is required to comply with the requirements of this regulation. Their initial Section 112r Risk Management Plan (RMP) was submitted to the EPA in June of 1999. The annual compliance certification must include a statement regarding compliance with this part, including the registration and submission of the RMP.

3.2.7 40 CFR Part 70 {*Operating Permits*}: This Subpart is applicable to the POPCO facility. Table 3.1 lists the federally enforceable District promulgated rules that are "generic" and apply to the facility. Table 3.2 lists the federally enforceable District promulgated rules that are "unit-specific". These tables are based on data available from the District 's administrative files and from POPCO's Part 70 Operating Permit application. Table 3.4 includes the adoption dates of these rules.

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

3.3. Compliance with Applicable State Rules and Regulations

3.3.1 Division 26. Air Resources {California Health & Safety Code}: The administrative provisions of the Health & Safety Code apply to this facility.

3.3.2 California Administrative Code Title 17: These sections specify the standards by which abrasive blasting activities are governed throughout the State. All abrasive blasting activities at the Las Flores Canyon facility are required to conform to these standards. Compliance is typically assessed through onsite inspections. 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 Administrative Code Title 17 {Sections 93115}: This section specifies emission, operational, monitoring, and recordkeeping requirements for stationary diesel-fired compression ignition engines rated over 50 bhp. The firewater pumps and emergency generators are required to conform to these standards. Compliance will be assessed through onsite inspections. These standards are not federally enforceable onshore.

3.3.4 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 crude oil, condensate, and produced water separation and storage facilities. This facility is subject to the provisions of this regulation. There are no tanks or separators at this facility. This facility does not utilize circulation tanks for well stimulation treatments, centrifugal natural gas compressors, natural gas powered pneumatic devices or pumps, natural gas only wells, or well casing vents, and is therefore not subject to the CARB regulation standards and requirements for these equipment and processes. The reciprocating natural gas compressors at this facility satisfy the requirements of the CARB regulation through connection of the vent stacks serving the compressor seals/rod packing to the vapor recovery system. The facility is subject to the LDAR requirements of District Rule 331 and is therefore exempt from LDAR under the CARB regulation per Section 95669(b)(1).

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 facility. Table 3.3 lists the non-federally-enforceable District rules that apply to the facility.

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

The following is a rule-by-rule evaluation of compliance for the POPCO 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 which may cause the issuance of air contaminants. The equipment included in this permit is listed in Attachment 10.4. 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 Rule 201.G: District permits are reevaluated every three years. This includes the re-issuance of the underlying permit to operate. Fees for this facility are recovered under the cost reimbursement provisions of this rule.

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

Rule 302 - Visible Emissions: This rule prohibits the discharge from any single source any air contaminants for 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 oxidizer, the utility boilers, the TEG reboilers, and all diesel-fired piston internal combustion engines, regardless of exemption status. Improperly maintained diesel engines and the thermal oxidizer have the potential to violate this rule. Compliance will be assured through Visible Emissions Monitoring per condition 9.B.2 by ExxonMobil staff and requiring all engines to be maintained according to manufacturer maintenance schedules per the District-approved *IC Engine Particulate Matter Operation and Maintenance Plan*.

Rule 303 - Nuisance: This rule prohibits POPCO from causing a public nuisance due to the discharge of air contaminants. There are no recent nuisance complaints that can be attributable to operation of the POPCO facility. All nuisance complaints are investigated by the District and follow the guidelines outlined in Policy & Procedure I.G.2 (*Compliance Investigations*). This rule is included in the SIP.

Rule 305 - Particulate Matter, Southern Zone: The POPCO facility 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 oxidizer, the utility boilers, the TEG reboilers, and all diesel-fired piston internal combustion engines, regardless of exemption status. 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 per the District -approved *IC Engine Particulate Matter Operation and Maintenance Plan*. Rule 359 addresses the need for the thermal oxidizer to operate in a smokeless fashion.

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 0.1 gr/scf (at 12% CO_2) respectively. Sulfur emissions due to planned flaring events will comply with the SO_2 limit. Flaring of acid gas may not comply with the SO_2 limit, however, and POPCO will need to obtain breakdown and/or variance relief in such cases. 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. An odor monitoring station is located at the entrance (fence line) to the Las Flores Canyon which includes the POPCO and Las Flores Canyon facilities. Data collected from the DAS system has demonstrated compliance with the limits of this rule.

Rule 311 - Sulfur Content of Fuels: This rule limits the sulfur content of fuels combusted at the POPCO facility to 0.5 percent (by weight) for liquids fuels and 15 gr/100 scf (calculated as H_2S) {or 239 ppmvd} for gaseous fuels. ExxonMobil uses CARB diesel fuel, which contains only 0.0015% sulfur. All fuel gas is required to have a sulfur content not exceeding 24 ppmv (as S). Further, the exempt TEG process heaters and the forced air furnace are required to use natural gas meeting PUC Quality standards in order to maintain their permit exemption. Compliance with this requirement is achieved through use of an inline H_2S analyzer, daily Draeger tube readings and fuel sampling. The flare relief system is not subject to this rule (see discussion under Rule 359).

Rule 317 - Organic Solvents: This rule sets specific prohibitions against the usage of both photochemically and non- photochemically reactive organic solvents (40 lb/day and 3,000 lb/day respectively). Solvents may be used at the POPCO facility 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. POPCO is required to maintain records to ensure compliance with this rule.

Rule 318 - Vacuum Producing Devices or Systems – Southern Zone: This rule prohibits the discharge of more than 3 pounds per hour of organic materials from any vacuum producing device or system, unless the organic material emissions have been reduced by at least 90 percent. POPCO states that there are no emission units subject to this rule.

Rule 321 - Solvent Cleaning Operations: This rule sets equipment and operational standards for degreasers using organic solvents. Small-unheated solvent cleaners that are less than 1 gallon in capacity or having an evaporative surface area of less than 1 square foot (aggregate cap of 10 square feet) are exempt from all rule provisions, except Section G.2. Compliance is determined via facility inspections.

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. POPCO is 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 into the atmosphere. POPCO is required to maintain records to ensure compliance with this rule.

District Rule 325 - Crude Oil Production and Separation: This rule, adopted January 25, 1994, applies to equipment used in the production, gathering, storage, processing and separation of crude oil and gas prior to custody transfer. The primary requirements of this rule are contained in 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 sumps. Section E requires that all produced gas be controlled at all times, except for wells undergoing routine maintenance. All pressure vessels are connected to gas gathering systems and all relief valves are connected to the flare relief system. POPCO has installed vapor recovery on all equipment subject to this rule, except for Tank T-601. Tank T-601 is equipped with a dual carbon canister control system to comply with Section D. Compliance with Section E is met by directing all produced gas to a sales compressor, injection well or to the flare relief system.

Rule 326 - Storage of Reactive Organic Compound Liquids: This rule applies to equipment used to store reactive organic compound liquids with a vapor pressure greater than 0.5 psia. The methanol tank is subject to this rule. Compliance will be assessed via District inspections.

Rule 327 - Organic Liquid Cargo Tank Vessel Loading: There is no organic liquid cargo tank vessel loading operations associated with this facility.

Rule 328 - Continuous Emissions Monitoring: This rule details the applicability and standards for the use of continuous emission monitoring systems (CEMS). Process monitoring systems (e.g., fuel use meters) are used to track emissions. CEMS are required for the facility as outlined in Section 4.11.1 and Tables 4.9 through 4.12. A number of process variables are also continuously monitored to assess compliance with permitted mass emission limits. POPCO operates the CEMS and process monitors consistent with the District approved CEMS Plan.

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. This rule only applies to metal parts and products that are not currently installed as appurtenances to the existing stationary structures. It is not anticipated that POPCO will trigger the requirements of this rule. Compliance shall be based on site inspections.

Rule 331 - Fugitive Emissions Inspection and Maintenance: This rule applies to components in liquid and gaseous hydrocarbon service at oil and gas processing plants. POPCO will comply with this rule through implementation of the District approved I&M Plan. Ongoing compliance with the many provisions of this rule will be assessed via facility inspection by District personnel using an organic vapor analyzer and through analysis of operator records.

Rule 333 - Control of Emissions from Reciprocating Internal Combustion Engines: This rule applies to all engines with a rated brake horsepower of 50 or greater that are fueled by liquid or gaseous fuels. The IC engines at the facility include two emergency firewater pump engines and two emergency electrical generators that are exempt from the requirements of this rule per Section B.1.d.

Rule 342 - Boilers, Steam Generators, and Process Heaters (5MMBtu/hr and greater): This rules sets emission standards for external combustion units with a rated heat input greater than 5.000 MMBtu/hr. Utility Boilers B-801A and B-801B are subject to this rule. These boilers were retrofit with low-NO_X burners in order to comply with the rule's emission standards. Compliance is assessed through the monitoring, recordkeeping and reporting requirements listed in Section 9.C of this permit. Prior to 2002 compliance with the exhaust concentration limits of Rule 342 was based on source testing. In 2002 compliance with the NO_x and CO limits was determined based on source testing and on CEMS data. PTO reevaluation 8092 R7 removed CEMS as a method of determining compliance with the NO_x and CO exhaust concentration limits. In lieu of CEMS, semiannual source testing will be required to demonstrate compliance with the NO_x and CO exhaust concentration limits, given the potential for emissions variability from the combustion of offgas in the boilers. The CEMS will continue to be used for ongoing compliance with NO_x and CO lb/hr limits.

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. This rule does not apply to any equipment at the POPCO facility.

Rule 344 - Petroleum Sumps Pits and Well Cellars: This rule applies to sumps, pits and well cellars at facilities where petroleum is produced, gathered, separated, processed or stored. There are no units at this facility subject to this rule.

Rule 346 - Loading of Organic Liquids: This rule applies to the transfer of organic liquids into an organic liquid cargo vessel. For this rule only, an organic liquid cargo vessel is defined as a truck, trailer or railroad car. POPCO is exempt from this rule per Section B.4. Further, the vacuum trucks are exempt from the provisions of Sections D, E and F pursuant to Section B.5.

Rule 352 - Natural Gas-Fired Fan-Type Central Furnaces and Small Water Heaters: This rule applies to new water heaters rated less than 75,000 Btu/hr and new fan-type central furnaces. It requires the certification of newly installed units.

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.

Rule 359 - Flares and Thermal Oxidizers: This rule applies to flares for both planned and unplanned flaring events. Compliance with this rule has been documented. POPCO uses a thermal oxidizer to combust waste gases, as well as the utility boilers to incinerate Stretford Unit tailgas. The utility boilers are exempt from the provisions of this Rule pursuant to Section B.1. A detailed review of compliance issues is as follows:

§ 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.

§ D.2 - Technology Based Standard: Requires all thermal oxidizers to be smokeless and sets pilot flame requirements. POPCO's thermal oxidizer is in compliance with the smokeless requirement as determined through District inspections and POPCO observations of the visible emissions using staff certified in visual emissions evaluations. POPCO has not demonstrated compliance with the flame pilot requirements, as each pilot is not continuously monitored for the presence of a flame.

§ D.3 - Flare Minimization Plan: This section requires sources to implement flare minimization procedures so as to reduce SO_x emissions. The Planned Flaring volume is 18.2 million standard cubic feet per month. POPCO has fully implemented their *Flare Minimization Plan*.

Rule 360 - Boilers, Water Heaters, and Process Heaters (0.075 – 2 MMBtu/hr): This rule applies to any water heater, boiler, steam generator, or process heater rated from 75,000 Btu/hour to 2.000 MMBtu/hr. Any unit manufactured after October 17, 2003 must be certified to meet the NO_x emission limits of the rule. The 1.200 MMBtu/hr and 1.400 MMBtu/hr TEG reboilers (E-121 and E-251 respectively) are existing units so they are not subject to this rule. If POPCO installs a new unit it must comply with this rule.

Rule 361 - Boilers, Steam Generators, and Process Heaters (Between 2 – 5 MMBtu/hr): This rule applies to any boiler, steam generator, or process heater with a heat input rating greater than 2.000 MMBtu/hr and less than 5.000 MMBtu/hr. The TEG Reboiler (E-251) was previously misidentified as a 2.100 MMBtu/hr process heater due to confusion between the reboiler's rated duty and the actual capacity of the burner. The actual heat input of the equipment was determined to be 1.400 MMBtu/hr based on engineering calculations and the rebored orifice diameter. The equipment's heat input was corrected under PTO-Mod 8092-05, therefore the equipment is not subject to Rule 361.

Rule 505 - Breakdown Conditions: This rule describes the procedures that POPCO must follow when a breakdown condition occurs to any emissions unit associated with the POPCO facility. A breakdown condition is defined as an unforeseeable failure or malfunction of (1) any air pollution control equipment or related operating equipment which causes a violation of an emission limitation or restriction prescribed in the District Rules and Regulations, or by State law, or (2) any in-stack continuous monitoring equipment, provided such failure or malfunction:

a. Is not the result of neglect or disregard of any air pollution control law or rule or regulation;

b. Is not the result of an intentional or negligent act or omission on the part of the owner or operator;

c. Is not the result of improper maintenance;

d. Does not constitute a nuisance as defined in Section 41700 of the Health and Safety Code;

e. Is not a recurrent breakdown of the same equipment.

Rule 603 - Emergency Episode Plans: Section "A" of this rule requires the submittal of *Stationary Source Curtailment Plan* for all stationary sources that can be expected to emit more than 100 tons per year of hydrocarbons, nitrogen oxides, carbon monoxide or particulate matter. POPCO will comply with this rule through implementation of the District approved *Emergency Episode Plan*.

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

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 Variances: ExxonMobil has sought the following variance relief per Regulation V since PTO/Part70 8092-R9 was issued on April 26, 2018:

Case Number	Date Issued	Subject
2018-06-R	06/06/2018	AAPL Related-Odor Monitoring Station. Effective July 1,2018 thhrough June 30, 2020 or the initial operations of the Thermal Oxidizer, whichever occurs first. Compliance achieved on issuance of PTO Mod 8092-06 on 09/26/2019

Violations: The following compliance actions have been documented since PTO/Part70 8032-R9 was issued on April 26, 2018:

VIOLATION TYPE	NUMBER	ISSUE DATE	DESCRIPTION OF VIOLATION
NOV	11015	09/02/2016	Flaring gas in excess of the 239 ppmv permit limit.

3.5.3 Significant Historical Hearing Board Actions: There have been no significant *historical* Hearing Board actions since the initial Part 70 permit was issued.

Table 3.1 Generic Federally Enforceable District Rules

Generic Requirements	Affected Emission Units	Basis for Applicability	Adoption Date
RULE 101: Compliance by Existing Installations	All emission units	Emission of pollutants	June 1981
RULE 102: Definitions	All emission units	Emission of pollutants	August 25, 2016
RULE 103: Severability	All emission units	Emission of pollutants	October 23, 1978
RULE 201: Permits Required	All emission units	Emission of pollutants	June 19, 2008
RULE 202: Exemptions to Rule 201	Applicable emission units	Insignificant activities/emissions, per size/rating/function	August 25, 2016
RULE 203: Transfer	All emission units	Change of ownership	April 17, 1997
RULE 204: Applications	All emission units	Addition of new equipment of modification to existing equipment.	April 17, 1997
RULE 205: Standards for Granting Permits	All emission units	Emission of pollutants	April 17, 1997
RULE 206: Conditional Approval of Authority to Construct or Permit to Operate	All emission units	Applicability of relevant Rules	October 15, 1991
RULE 208: Action on Applications – Time Limits	All emission units. Not applicable to Part 70 permit applications.	Addition of new equipment of modification to existing equipment.	April 17, 1997

Generic Requirements	Affected Emission Units	Basis for Applicability	Adoption Date
RULE 212: Emission Statements	All emission units	Administrative	October 20, 1992
RULE 301: Circumvention	All emission units	Any pollutant emission	October 23, 1978
RULE 302: Visible Emissions	All emission units	Particulate matter emissions	June 1981
RULE 303: Nuisance	All emission units	Emissions that can injure, damage or offend.	October 23, 1978
RULE 305: PM Concentration – South Zone	Each PM source	Emission of PM in effluent gas	October 23, 1978
RULE 309: Specific Contaminants	All emission units	Combustion contaminants	October 23, 1978
RULE 311: Sulfur Content of Fuel	All combustion units	Use of fuel containing sulfur	October 23, 1978
RULE 317: Organic Solvents	Emission units using solvents	Solvent used in process operations.	October 23, 1978
RULE 318: Vacuum Producing Devices – Southern Zone	All systems working under vacuum	Operating pressure	October 23, 1978
RULE 321: Solvent Cleaning Operations	Emission units using solvents	Solvent used in process operations.	June 21, 2012
RULE 322: Metal Surface Coating Thinner and Reducer	Emission units using solvents	Solvent used in process operations.	October 23, 1978
RULE 323.1: Architectural Coatings	Paints used in maintenance and surface coating activities	Application of architectural coatings.	June 19, 2014
RULE 324: Disposal and Evaporation of Solvents	Emission units using solvents	Solvent used in process operations.	October 23, 1978
RULE 353: Adhesives and Sealants	Emission units using adhesives and sealants	Adhesives and sealants use.	June 21, 2012
RULE 505: Breakdown Conditions	All emission units	Breakdowns where permit limits are exceeded or rule requirements are not complied with.	October 23, 1978
RULE 603: Emergency Episode Plans	Stationary sources with PTE greater than 100 tpy	ExxonMobil SYU Project PTE is greater than 100 tpy.	June 15, 1981
REGULATION VIII: New Source Review	All emission units	Addition of new equipment of modification to existing equipment. Applications to generate ERC Certificates.	August 25, 2016
RULE 810: Federal Prevention of Significant Deterioration	New or modified emission units	Major modifications	June 20, 2013

Generic Requirements	Affected Emission Units	Basis for Applicability	Adoption Date
RULE 1301: General Information	All emission units		August 25, 2016
RULE 1302: Permit Application	All emission units		November 9, 1993
RULE 1303: Permits	All emission units		November 9, 1993
RULE 1304: Issuance, Renewal, Modification and Reopening	All emission units		November 9, 1993
RULE 1305: Enforcement	All emission units		November 9, 1993

Table 3.2 Unit-Specific Federally Enforceable District Rules

Unit-Specific Requirements	District Device No	Basis for Applicability	Adoption Date
RULE 325: Crude Oil Production and Separation	103104, 103103, 102620	All pre-custody production and processing emission units	July 19, 2001
RULE 326: Storage of Reactive Organic Compounds	102620	Stores ROCs with vapor pressure greater than 0.5 psia	July 18, 2001
RULE 328: Continuous Emission Monitors	2350, 2351, 105162, 105183, 150204	Section C and NSPS	October 23, 1978
RULE 331: Fugitive Emissions Inspection & Maintenance	102618	Components emit fugitive ROCs.	December 10, 1991
RULE 342: Control of Oxides of Nitrogen from Boilers, Steam Generators and Process Heaters	2350, 2351	Rated greater than 5.000 MMBtu/hr	April 17, 1997
RULE 359: Flares and Thermal Oxidizers	102614, 102615, 102616, 102617	Used in petroleum service	June 28, 1994
RULE 360: Boilers, Water Heaters, and Process Heaters (0.075 – 2 MMBtu/hr)	2353, 2352	Rated between 75,000 and 2,000,000 Btu/hr	March 15, 2018
RULE 361: Boilers, Steam Generators, and Process Heaters (Between 2 - 5 MMBtu/hr)		Rated between 2.000 and 5.000 MMBtu/hr	June 20, 2019
RULE 901: New Source Performance Standards (NSPS)		Subpart A, KKK, and LLL	September 20, 2010

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	All emission units	Odorous sulfide emissions
RULE 352: Natural Gas-Fired Fan-Type Central Furnaces and Small Water Heaters	New water heaters and furnaces	Upon installation
RULES 501-504: Variance Rules	All emission units	Administrative
RULES 506-519: Variance Rules	All emission units	Administrative

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)
- Emission source testing, sampling, CEMS
- Process monitors needed to ensure compliance.

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

4.2. Stationary Combustion Sources

4.2.1 General: The stationary combustion sources associated with the Gas Plant consist of two 41.000 MMBtu/hr natural gas utility boilers (B-801A/B), two triethylene glycol (TEG) reboilers (E-121 rated at 1.200 MMBtu/hr and E-251 rated at 1.400 MMBtu/hr), and five diesel-fired emergency IC engines (two firewater pumps each rated at 420 bhp and three emergency electrical generators rated at 268 bhp, 95 bhp and 111 bhp, respectively). Electrical power at the POPCO Gas Plant is utility-grid supplied. During utility grid power losses, normal gas plant processing of sour gas ceases until power is restored.

Each boiler is capable of accepting Tail Gas Unit tailgas (TGU tailgas) produced from the Stretford Unit part of the facility's Sulfur Recovery Unit (SRU). The TGU tailgas contains up to 100 ppmv total reduced sulfur (TRS) compounds (e.g., H_2S, COS, CS_2), which is incinerated in the boilers to oxidize the TRS compounds to oxides of sulfur (SO_x). The TGU tailgas also contains small amounts of hydrogen and hydrocarbons, as well as inert gases such as CO_2 and N_2. The hydrogen and hydrocarbons can contribute an additional 5.620 MMBtu/hr of heat release within a boiler or be split between both boilers. Each stack is equipped with a CEM system that measures the concentration and mass emissions of NO_x and SO_X.

4.2.2 Emission Factors:

BOILERS - The emission factors for the two 41.000 MMBtu/hr Babcock-Wilcox utility boilers, shown in Table 5.2, are based on POPCO's permit application for the COEN QLN Low-NO_x burners in use. The NO_x emission factor is based on Rule 342 requirements (30 ppmv at 3% O_2) while the CO emission factor is based on the manufacturer guarantee of 100 ppmv at 3% O_2. The PM emission factor was derived from the PM_{10} factor by using a PM/PM_{10} ratio of 0.95. The SO_X emission factor is based on mass balance using a total sulfur content of 24 ppmv.

IC ENGINES – Emission factors for the IC engines are based on USEPA Tier Standards for Tier certified engines, and Table 3.3-1 of USEPA AP-42 for non-Tier certified engines. The SO_x emission factor is based on mass balance. Mass emission estimates are based on the maximum allowed hours 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)

The emission factors (EF) were chosen from USEPA AP-42 based on each engine's rating and age. Daily hours are assumed to be 2 hours per day (re: ATCM FAQ Ver 1.5 #32). The firewater pump engines identified in this permit 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.

TEG REBOILERS – Emission factors for the TEG reboilers are based on Tables 1.4-1 and 1.4-2 of USEPA AP-42. The SO_X emission factor is based on mass balance using PUC quality natural gas meeting the specifications of General Order – 58a.

4.2.3 Emission Controls: The emission controls for the two utility boilers include use of COEN QLN Low-NO_x burners. The burners on B-801A and B-801B are also equipped for steam injection (50 psig and up to 650 lb/hr) to reduce NO_x emissions. These controls were installed in 1996 (ATC 9215) in order to comply with the requirements of District Rule 342. The steam injection system has been implemented in both boilers B-801A and B-801B per District ATC/PTO 10932. There are no controls used for the IC engines or the TEG reboilers.

4.2.4 GHG Emissions: 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 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 CH4) = 0.046 lb CO_2e/MMBtu

(0.0001 kg N_2O/MMBtu) (2.2046 lb/kg)(310 lb CO_2e/lb N_2O) = 0.068 lb CO_2e/MMBtu

Total CO2e/MMBtu = 116.89 + 0.046 + 0.068 = 117.00 lb CO_2e/MMBtu

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 CH4) = 0.139 lb CO_2e/MMBtu

(0.0006 kg N_2O/MMBtu) (2.2046 lb/kg)(310 lb CO_2e/lb N_2O) = 0.410 lb CO_2e/MMBtu

Total CO2e/MMBtu = 163.05 + 0.139 + 0.410 = 163.60 lb CO_2e/MMBtu

Converted to g/hp-hr:

(163.60 lb/MMBtu)(453.6 g/lb)(7500 Btu/hp-hr)/1,000,000 = 556.58 g/hp-hr as CO_2

4.3. Fugitive Hydrocarbon Sources

4.3.1 General: Fugitive hydrocarbon emissions occur from leaks in process components such as valves, connections, pumps, compressors and pressure relief devices. Each of these component types may be comprised of several potential "leak paths" at the facility. 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.

4.3.2 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 service. The component-leakpath was counted consistent with P&P 6100.061. This leakpath count is not the same as the "component" count required by District Rule 331. No oil service components are present at this facility.

The operator determined the number of emission leakpaths and District staff verified these data by checking a representative number of P&IDs and by site checks. 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-leakpath (clp)
	CE =	control efficiency
	HPP =	operating hours per time period (hrs/period)

4.3.3 Emission Controls: A fugitive emissions control program is used to minimize potential leaks from the process components. Emission reductions are expected as a result of POPCO's implementation of the District approved Inspection and Maintenance (I&M) Manual and component installation that is considered BACT and BARCT. 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 vapor recovery system, use of dual mechanical seals on pumps in light liquid service, venting of pressure relief devices to the flare 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. Inspections are performed with an Organic Vapor Analyzer or other EPA Method 21 approved analyzer. Components are required to be repaired between 1 to 14 days, depending on the severity of the leak. POPCO's I&M program is consistent with the most stringent requirements of District Rule 331 and EPA New Source Performance Standards, Subpart KKK. POPCO's 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. Table 4.1 summarizes the requirements for the I&M Program. Tables 4.2 and 4.3 define the BACT requirements for the fugitive hydrocarbon sources.

Differing emission control efficiencies are credited to all 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 (See Table 4.3-1 in Attachment A). The control efficiencies vary based on component design, monitoring frequency, and leak detection threshold. This facility operates bellows seal valves (100% control), Category B valves and flanges/connections (85% control), Category C valves and flanges/connections (87% control), Category F valves and flanges/connections (90% control), Category J valves (90% control), and 80% for the remaining safe-to-monitor components. Unsafe to monitor components are not eligible for I&M control credit. (See Permit Guideline Document 15 – *Fugitive Emissions from Valves, Fittings, Flanges, Pressure Relief Devices, Seals, and Other Components – Component-Leakpath Method* for a detailed discussion of the various categories defined for valves and flanges/connections). Ongoing compliance is determined in the field by inspection with an organic vapor analyzer and verification of operator records.

POPCO has classified a large number of components as “emitters less than 500 ppmv” (Category B) and “emitters less than 100 ppmv” (Category C). The component-leakpaths monitored at 500 ppmv or 100 ppmv are assigned a mass emission control efficiency depending on the monitoring frequency. Category B component-leakpaths are maintained at or below 500 ppmv as methane, and Category C component-leakpaths are maintained at or below 100 ppmv as methane, monitored per EPA Reference Method 21. For such Category B component-leakpaths, screening values above 500 ppmv trigger the Rule 331 repair process per the minor leak schedule. Screening values above 100 ppmv trigger the Rule 331 repair process per the minor leak schedule for Category C component-leakpaths.

BACT standards apply for Rule 331 components subject to NSR BACT provisions of that rule. Table 4.2 (*Rule 331 BACT Component Requirements*) lists the specific BACT requirements for these components.

4.4. Sulfur Recovery/Tailgas Unit

4.4.1 General: POPCO's Sulfur Recovery Unit (SRU) is comprised of three separate stages: a Claus-type catalytic converter stage; a Beavon converter stage; and a Stretford tailgas unit stage. The Claus-type unit operates to convert the H_2S in the raw acid gas produced from the Sulfinol system regenerator (acid gas also contains CO_2, but CO_2 passes through the entire SRU as an inert species). The H_2S is converted to elemental sulfur. The Beavon converter is used to convert the residual quantities of byproduct SO_2 in the Claus tailgas back into H_2S, whereby in the next stage of the SRU process, the Stretford tailgas unit, most all of the residual H_2S in the Beavon tailgas is removed and converted into wet elemental sulfur.

The system used by POPCO incorporates BACT to remove H_2S from the acid gas feed to the SRU. The BACT standard that applies to this process is considered a different "class" of process than the standard that has been applied to date for "refinery-based" SRUs. Refinery-based SRUs typically do not contain much else in their acid gas except H_2S, because all the hydrocarbons and other reduced sulfur species were converted to H_2S in catalytic-desulfurization processes (for the gasoline, kerosene, and diesel products produced by refineries) upstream of their SRUs. Because gas plants used to produce utility-grade fuel gas directly from production wells, such as POPCO (and the adjacent ExxonMobil SYU gas plant), they handle acid gas streams which are much "leaner" (i.e., lower in concentration) in H_2S, and also contain significantly higher proportions of other reduced sulfur species than refinery-based SRU acid gases.

As a result, all of POPCO's three SRU stages basically operate most effectively to remove H_2S from the acid gas stream sent to the SRU from the POPCO gas processing equipment's amine-based gas sweetening system. The SRU systems are only partially effective at removing and converting other reduced sulfur species such as carbonyl sulfide, carbon disulfide, and mercaptans to the elemental sulfur product. Because of this limitation, this SRU's BACT standard is limited to specifying the minimum allowed H_2S reduction efficiency. This SRU's performance is also specified for minimum total sulfur reductions to ensure compliance with the applicable federal NSPS (40 CFR, Subpart LLL).

4.4.2 Emission Factors/Controls: Emission calculations for the SRU's H_2S and total sulfur recovery efficiency are based upon the minimum required reduction in these species across the SRU (see Tables 4.5 and 4.6). The monitoring systems in place and the formulae used to track compliance with these specifications are shown in Figures 4.1 and Table 4.9.

The minimum H_2S and TRS recovery efficiency specifications will be met by limiting the maximum capacity of the SRU's contribution to the POPCO facility SO_2 emissions to no more than 5.44 lb/hr. This equates to a calculated H_2S mass reduction efficiency of 99.9484 percent at a 60 LTD feed rate to the SRU. It is important to note, though, this permit only specifies the H_2S and TRS mass reduction efficiencies to three significant figures (e.g., 99.9 percent for H_2S). This is because of the intrinsic (but allowed by CFR standards) instrument accuracy limitations used to monitor these efficiencies; for example, with both the inlet H_2S and Stretford tailgas H_2S, and even the boiler stack SO_2 CEM, all capable of accuracy to approximately ± 3.5%, no more than three significant figures of mass reduction efficiency can be specified. However, using the Stretford H_2S tailgas, and the boiler stack SO_2 CEMS mass emission monitors, ensures that at least the applicable three-significant-figure-based BACT and NSPS standards are achieved or even exceeded (on a calculated basis), and that total SO_2 mass emissions impact from the SRU is minimized.

In addition to SO_2 from the SRU, the Stretford tailgas also contains some residual combustible species such as hydrogen (H_2) and low molecular weight hydrocarbons that are carried through or generated by the SRU process. These combustible species are estimated to contribute up to 5.620 MMBtu/hr of additional heat release in the B-801A/B boilers during incineration of about 225,000 SCF/hr of tailgas. The residual heating value of the Stretford tailgas has been estimated at 25.0 Btu/scf. In general, the SRU incineration emissions can be calculated using formulae similar to standard combustion processes as follows:

$$ER = EF \times FR \times HVC$$

where:

- ER = emission rate (lb/period)
- EF = pollutant specific emission factor (lb/MMBtu of incinerated gas)
- FR = Stretford tailgas flow rate (SCF/period)
- HVC= average high heating value from combustion of Stretford tailgas (Btu/scf).

Emissions from this waste stream are calculated separately from the main fuel gas emission calculations in two line items in Tables 5.3 and 5.4. The first line item addresses the non-SO_x criteria emissions and uses the same emission factors as used for the utility boilers. The second item addresses the SO_x emissions that are specific to the tailgas stream characteristics. As permitted under ATC 9047, the SO_x emission factor is 5.44 lb/hr. Also included in the second item are emissions of ROC from the Stretford Oxidizer Tanks. The POPCO proposed emission factor of 0.10 lb/hr is used. The pollutant specific emission factors and other data required for these calculations are documented in Section 5 of this permit.

4.5. Thermal Oxidizer

4.5.1 General: Emissions associated with a variety of flaring events are anticipated from the POPCO facility. Flaring emissions associated with the controlled start-up and shut-down of the Gas Plant for maintenance and inspection were supplied by the applicant as part of the Rule 359 *Flare Minimization Plan* activities and the POPCO *1983 Flaring Analysis*. Anticipated failure rate frequencies and emissions levels were projected in the project SEIR based on past operating records from similar facilities.

The POPCO flare relief system consists of hydrocarbon and low-pressure acid gas headers. Each of these headers connects the various PRDs and manual pressure relief/vent paths to a common enclosed ground flare (the ZTOF). No hydrocarbon service pressure relief devices are equipped with relief valves vented directly to the atmosphere. The flare itself is manufactured by John Zink and is rated at about 72,159 lbs of hydrocarbons an hour for the three ZTOF stages, and an additional 269,000 lb/hr for the LRGO stage.

4.5.2 Operating Modes: This permit categorizes all flaring activities into one of the following four categories:

- *Purge and Pilot* - Up to 2000 scfh of plant gas and 200 scfh of sales gas (PUC quality) are used to maintain pilot flames and to purge the thermal oxidizer respectively. Per District P&P 6100.004, this category is included in all emission scenarios (i.e., hourly, daily, quarterly and annual).

- *Planned Continuous* - This category includes all continuous flaring events. This includes compressor seal leakage to the acid gas header and "baseline" system leakage to both the hydrocarbon and acid gas headers. Each compressor is equipped with a totalizing flow meter. The baseline system leakage is a calculated value for each flare header based on the principle of taking the total volume metered at each flare header and subtracting out all known metered volumes (e.g., purge gas, compressor seal leakage, flaring events).

- The compressor seal leakage rate of 311 scfh is greater than one-half the minimum detection limit of the acid gas flare header flow meter (245 scfh) and as such an additional emissions line item is not required. Further, since the hydrocarbon flare header flow meter minimum detection limit is very low (45 scfh), it is assumed that the purge gas flow rate through the hydrocarbon flare header is greater than one-half the minimum detection limit of the flow meter (22.5 scfh), and as such an additional emissions line item is not required. Per District P&P 6100.004, this category is included in all emission scenarios.

- *Planned Other* - This category includes planned infrequent flaring events and is only comprised of plant startups and shutdowns, plant startups after unplanned shutdowns, maintenance, and incineration of treated tail gas during events such as boiler startups and shutdowns. Other planned flaring events may only occur via a variance per Regulation V. This category includes operations occurring a maximum of four times per year. Per District P&P 6100.004, emissions from this category are included only in the quarterly and annual emission scenarios. POPCO may incinerate tail gas in the thermal oxidizer for reasons other than those cited here, as long as the operational limitations defined in Table 5.1 are met.

- *Unplanned Other* - This category includes unplanned flaring that occurs unexpectedly, which is not a part of the normal operation of the thermal oxidizer. Past causes for unplanned flaring at POPCO include maintenance, pressure control valve relief, pressure safety valve relief, compressor shutdowns and startups, or plant shutdowns. In addition, POPCO is limited to a single failure of the Sulfur Recovery Unit (SRU) as defined in Condition 9.C.2. Other unplanned flaring events not meeting the limits specified in Condition 9.C.2 and Table 5.1 may only occur via a variance per Regulation V. Per District P&P 6100.004, emissions from this category are included only in the quarterly and annual emission scenarios.

4.5.3 Emission Factors: The emission factors are based on prior permitting actions. The basis for selection of the emission factors is not known. The SO_x emission factor is determined using the equation: (0.169)(ppmv S)/(HHV) [b]. The calculation methodology for the flare emissions is:

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

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

To meet the requirements of Rule 359, POPCO uses purge and pilot gas that complies with the rule limit of 239 ppmv. POPCO's fuel gas for the pilot cannot exceed a total sulfur content of 24 ppmv and the fuel gas for the purge cannot exceed a total sulfur content of 80 ppmv and a hydrogen sulfide content of 4 ppmv. With the exception of the SRU Failure, POPCO has requested a limit of 239 ppmv for unplanned other flaring.

4.5.4 Meters: The Flare Volume Metering system is divided into three parts: (1) a hydrocarbon metering system; (2) an acid gas metering system, and (3) a TO pilot fuel gas metering system.

HYDROCARBON METERING SYSTEM - The "hydrocarbon" metering system is comprised of three overlapping stages of flow metering, such that the low and very high flows in this manifold can be accurately measured. The minimum detectable flow measured by this system is 45 scfh. A "zero" reading from this metering system is assumed to be a flow of one-half the minimum detectable flow (i.e., 22.5 scfh). Specifically:

- *Low Flow Metering System*: Installed into 3-inch flare first stage piping downstream of HC Flare K.O. Drum, V-802. Measures flow as low as 45 scf/hr and up to 0.036 MMSCF/hr. Make: Fluid Components International (FCI); Model No: GF90; this meter's flow readings are inherently pressure and temperature compensated.

- *Intermediate Flow Metering System*: Installed into 16-inch flare main header piping upstream of HC Flare K.O. Drum, V-802. Measures flow rates as low as 1,125 scf/hr up to 1.14 MMSCF/hr (equivalent to 27.5 MMSCF/day). Make: Fluid Components International (FCI); Model No: GF90; this meter's flow readings are inherently pressure and temperature compensated.

[b] Reference: *SOx Emission Factors for Gaseous Fuels*, District, January 31, 1997

- *High Flow Metering System*: Installed into 16-inch flare main header piping upstream of HC Flare K.O. Drum, V-802. Measures flow rates as low as 0.729 MMSCF/hr up to 9.58 MMSCF/hr (equivalent to 17.5 to 230 MMSCF/day). Make: Dietrich Standard; Model No: Diamond II annubar; this meter's flow readings are temperature and pressure compensated.

- *Temperature and Pressure Transducers*: As shown on POPCO P&ID No. D-972-28K, Rev. 11 (1/11/96) labeled as PT/PI #898; and TT/TI #898 for pressure and temperature respectively. These transducers are used to correct hydrocarbon flare flows measured by the annubar high flow meter system.

ACID GAS METERING SYSTEM - The other part of the system measures acid gas releases from the facility Sulfur Removal Unit (SRU) process into the "Acid Gas" manifold; it is comprised of one "thermal dispersion" type flow meter. The minimum detectable flow measured by this system is 490 scfh. A "zero" reading from this meter is assumed to be a flow of one-half the minimum detectable flow (i.e., 245 scfh). This is slightly less than the permitted compressor seal leakage rate of 311 scfh that enters the acid gas flare header.

THERMAL OXIDIZER PILOT FUEL GAS METERING SYSTEM – The electronic Rosemount Model 3035 Multivariable Mass Flow Transmitter with a Daniels senior orifice meter is installed on the inlet fuel gas line to the Thermal Oxidizer. The transmitter is connected to POPCO's distributed control system (DCS) in which the pilot fuel gas flow rate will be transmitted in units of "scfh". The continuous metering equipment monitoring the pilot fuel gas flow is designed to measure flow rates and volumes up to 2000 scfh.

4.5.5 Mitigation of SRU Failures and Acid Gas Releases to the ZTOF: As previously analyzed in POPCO's *1983 Flaring Analysis*, two SRUs were originally intended to be operating, and only one was deemed likely to fail at a time. Such a failure produces a significant spike in SO_2 emissions, but one that in the 1983 analysis was predicted to not create a localized violation of a state or federal ambient air quality standard for SO_2 in effect at that time. However, the current single-SRU design doubles the potential SO_2 emissions associated with this failure scenario, as the entire acid gas rate associated with a 60 LTD SRU acid gas capacity could go to the ZTOF. As a result, ATC 9047 performed an Air Quality Impact Analysis (AQIA) of this scenario, and a POPCO proposed mitigation of its impact, in accordance with District rules and Santa Barbara County FDP land use condition E-5. This analysis has shown that POPCO's proposed SRU failure mitigation system is anticipated to prevent a localized, short-term violation of any state and federal SO_2 ambient air quality standard.

4.5.6 Mitigation of Planned ZTOF Operations during Maintenance and Startup Activities: The ZTOF is also used to safely flare gases in a planned manner. Planned flaring is defined (pursuant to District Rule 359) as *"...a flaring operation that constitutes a designed and planned process at a source, and which would have been reasonably foreseen ahead of its actual occurrence, or is scheduled to occur*". As such, planned uses of the ZTOF are considered to be clearly within the control of POPCO in regards to schedule, duration, and rate of flaring. It should also be noted that the ZTOF is not operating in these planned activities as a "safety" device; it is however disposing of the flared gases in a safe manner (such that no fire or explosive atmospheres result). During evaluation of ATC 9047, it became apparent that an AQIA was required for the reasonable "worst-case" use of the ZTOF during planned activities; this worst-case activity is that of facility "Start-up" in which off-specification and equipment purge gases are safely vented to the ZTOF. This unavoidable activity is needed to safely bring the facility's gas processing equipment into operations. To minimize the time required to accomplish this activity, POPCO has desired as high an allowed volumetric flow rate limit as is permissible. However, an AQIA analysis was performed and it discovered that the permitted limit for planned activities of 1.5 MMSCF/hr for 12 hours in duration contained in PTO 8092 was predicted to create a violation of the 1-hour primary ambient air quality standard for NO_2. The analysis also indicated that at one-half the flow rate, and twice the duration (to 24 hours), the NO_2 standard and any other standard would not be exceeded. As a result, ATC 9047 was conditioned to restrict ZTOF operations during any planned use to no more than 0.75 MMSCF/hr and up to a continuous 24 hours in duration. This restriction does not reduce the total quantity of emissions from this activity; it does however reduce its peak hourly emissions impact.

4.6. Tanks/Sumps/Separators

4.6.1 General:

TANKS: There are three types of atmospheric storage tank systems operating at this facility that contain process fluids that have contacted hydrocarbons. These are the Stretford Oxidizer tanks, the wastewater tanks and the methanol tank. The source tests completed for wastewater tank T-601 confirmed that tank T-601 has the potential to emit ROC compounds in addition to odorous sulfur compounds. For the Stretford Oxidizer tanks, testing during the SCDP of ATC 9047 confirmed that ROC emissions occur from the atmospheric venting of Stretford oxidation air. The ROCs are emitted because the Stretford solution has come into direct contact with a stream that contains low concentrations of hydrocarbons.

VESSELS*:* All pressure vessel PRDs in this facility are either connected to the plant's hydrocarbon or acid gas flare manifolds. Permitted emissions of ROCs from pressure vessels are therefore only due to fugitive hydrocarbon leaks from valves and connections.

4.6.2 Emission Factors: Emissions from the Stretford oxidizer tanks are based on an emission factor of 0.10 lb/hr that was provided by POPCO. Emissions from the methanol tank are based on the ideal gas law and vapor displacement during tank fillings. Emissions from the methanol tank are based on the ideal gas law and one tank loading operation per year. Emission factors for the wastewater tanks are based on the ARB/KVB Method for determining fugitive hydrocarbon emissions. The wastewater tanks are assumed to operate in secondary, light-oil service.

4.6.3 Emission Controls: Carbon canister emission controls are used on wastewater tank T-807 to minimize any potential odorous compounds. Wastewater tank T-601 is equipped with a dual carbon canister system to control both ROCs and odorous compounds. There are no controls on the Oxidizer Tanks. The methanol tank is equipped with a submerged fill pipe and a pressure-vacuum relief valve per Rule 326.D.1.a and D.2.a, respectively.

4.7. Vapor Recovery Systems

4.7.1 Drain Systems: A gas eductor system (J-203) creates a vacuum to remove vapors emitted into the plant's Pressure Drain System (PDS), TEG Drain System (TDS), and Sulfinol Drain Systems (SDS). In addition, this system serves the pipeline pig receiver. This gas eductor system prevents the release to the plant Acid Gas flare system of routine, intermittent sour-vapor releases through the PDS, TDS and SDS equipment from blowdowns of level-control gages and sight glasses. Without this vapor recovery system, these blowdowns would emit vapors to the PDS, TDS, and SDS equipment that sometimes exceed the sulfur limits authorized by District Rule 359 (i.e., 239 ppmv) for planned flaring activities. The recovered vapor will be returned by the eductor system for processing by the plant's existing fuel gas contacting system (V-211 and V-203). This system is comprised of valves, fittings, and hard piping. ROC emissions generated from these vapor recovery system components are calculated as part of the facility fugitive emissions inventory.

4.7.2 NGL Loading Rack: The NGL loading rack is equipped with a hard piped vapor recovery line. With this system, vapors from pressurized tank trucks are returned to the facility NGL tanks via a vapor balance line. This system is comprised of valves, fittings, and hard piping. ROC emissions generated from this vapor recovery system components are calculated as part of the facility fugitive emissions inventory.

4.8. Other Emission Sources

4.8.1 Pigging: Pipeline pigging operations occur at the Gas Plant. The pig receiver is de-pressured to the Pressure Drain System vapor recovery system. The receiver is purged with nitrogen prior to opening the unit to the atmosphere, as such there is no potential to vent hydrocarbons due to this process besides those associated with fugitive emissions from valves and fittings.

4.8.2 General Solvent Cleaning/Degreasing: Solvent usage (not used as thinners for surface coating) occurring at the POPCO facility as part of normal daily operations includes cold solvent degreasing and wipe cleaning. Mass balance emission calculations are used assuming that all the solvent used evaporates to the atmosphere unless a District-approved Solvent reclamation is used.

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

4.8.4 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 91 pound PM per 1000 pound of abrasive and 13 pound PM_{10} per pound abrasive is used (USEPA, 5th Edition, Supplement D, Table 13.26-1, 9/97) to estimate emissions of PM, PM_{10}, and $PM_{2.5}$.

4.9. BACT/NSPS/MACT

4.9.1 BACT: Best Available Control Technology is required for certain emission units and processes for ROC and SO_X. The applicable BACT control technologies and the corresponding BACT performance standards are listed in Table 4.5 through 4.8. Table 4.1 lists the BACT requirements for the District approved Rule 331 Fugitive Hydrocarbon I&M Plan. Figure 4.1 identifies the location of analyzers used in determining compliance with BACT requirements for the SRU.

Pursuant to District Policy and Procedure 6100.064, once an emission unit is subject to BACT requirements, then any subsequent modifications to that emissions unit or process is subject to BACT. This applies to both *de minimis* changes and equivalent replacements, regardless of whether or not such changes or replacements require a permit.

4.9.2 Rule 331 BACT Determinations: Pursuant to Sections D.4 and E.1.b of Rule 331, components are required to be replaced with BACT in accordance with the District's NSR rule. These BACT determinations are based on a case-by-case basis following the District's guidance document for determining BACT due to Rule 331. Rule 331 BACT determinations are documented in Table 4.2 through Table 4.4.

4.9.3 NSPS: Discussion of applicability and compliance with New Source Performance Standards is presented in Table 4.6. An engineering analysis for the affected equipment is found in the sections above.

4.9.4 NESHAP: In 2013 the emergency standby IC engines became subject to the operational requirements of the National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. On July 30, 2015 the District issued PTO Mod 8092–04 to: 1) Revise the source testing requirements for the Stretford Oxidizer Tanks, 2) Incorporate the equipment leak standards of the Oil and Natural Gas Production MACT (40 CFR 63 Subpart HH), and 3) Identify ancillary equipment, compressors, and the GPU glycol dehydration unit at the facility as subject to Subpart HH.

4.9.5 MACT: On June 17, 1999, EPA promulgated Subpart HH, a National Emission Standards for Hazardous Air Pollutants (NESHAP) for Oil and Natural Gas Production and Natural Gas Transmission and Storage. POPCO submitted an *Initial Notification of Applicability* by June 17, 1999. Based on that submittal, and several subsequent correspondences from POPCO (2/15/02 and 5/14/02), the District determined that the NGL storage vessels were subject to MACT standards (40 CFR 63.776 (b) (2)). Revisions to 40 CFR 63 Subpart HH on August 16, 2012 by the EPA removed the exemption to 40 CFR 63.769 Equipment Leak Standards for ancillary equipment and compressors in VHAP service that were being inspected under 40 CFR 60 Subpart KKK and changed the definition and requirements for glycol dehydration units operated at major sources. The NGL storage vessels, sulfanol glycol regeneration system, ancillary equipment and compressors in VHAP service and the GPU glycol dehydration unit are subject to 40 CFR 63 Subpart HH MACT standards.

NGL storage vessels

(i) POPCO achieves compliance with 40 CFR 63.776 (b) (2) Storage Vessel Standards by operating the NGL storage vessel as a closed system with no detectable emissions.

Sulfinol Glycol Regeneration System

(i) The unit is subject to MACT control requirements. Compliance with these standards is achieved by routing the vapors to the Sulfanol Reboiler heater. Since these vapors are introduced with the primary fuel, no monitoring or testing requirements apply (40 CFR 63.772.e.1.iii and 40 CFR 63.773.d.2.i).

Ancillary Equipment and Compressors in VHAP Service

(i) Ancillary equipment and compressors in VHAP service for 300 hours a year or more at POPCO previously exempt from 40 CFR 63 Subpart HH requirements on the basis that the equipment was being inspected and maintained in accordance with 40 CFR 60 Subpart KKK, are now subject to compliance with inspection, maintenance, recordkeeping and reporting requirements of the Equipment Leak Standards under subpart HH (40 CFR 63.769).

GPU Glycol Dehydration Unit

(i) The requirements under 63.765(b)(1)(iii) state that process vent associated with the small glycol dehydration unit be connected to a control device through a closed vent system. POPCO complies with the control requirements by routing exhaust from the GPU reboiler heater (E-121) to the fuel gas system, which is specifically excluded from the definition of a closed vent system, or to the flare.

General MACT requirements applicable to this facility are contained in Condition 9.B.18.

4.10. Best Available Retrofit Control Technology (Fugitive Emissions)

During the processing of ATC 9047, an analysis of what constituted Best Available Retrofit Control Technology (BARCT) was jointly performed by the District and POPCO to identify a suitable fugitive emissions mitigation approach short of obtaining ROC emission offsets. BARCT should identify an emission limitation that, according to the California Health and Safety Code, Section 40406: *"...is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts of the class or category of source"*. The District and POPCO also agreed that if application of BARCT resulted in the facility's ROC emissions dropping below the 25.0 tpy ROC offset threshold in effect at that time no ROC offsets would be required.

To reconcile the fact that full BARCT is cost-effective, yet not fully achievable in the short construction window, the District and POPCO also developed a "deferred" retrofit BARCT program that applies to the remaining existing valves left in-service after construction is completed.

The BARCT analysis performed by the District and POPCO as part of ATC 9047 identified equipment and techniques to reduce fugitive emissions from the existing facility valves and connections. The basic requirements of the BARCT plan resulted in the retrofit of the existing facility components during the expansion construction of sealless valves in unsafe to monitor locations; replacement of standard valves with low emission packing (LEP) design valves; a modified LDAR threshold for all remaining in-service standard valves (BARCT retrofit or not) and threaded static connection leak-paths; and a reduction of the "minor" leak LDAR threshold for all existing valves (constituting the "deferred" BARCT retrofit program). The specific details of the total BARCT program are specified in a permit condition in Section 9.C.

These elements of BARCT taken together were anticipated to immediately reduce the facility's current emissions by 35.32 tons/year, and to be accomplished at a cost effectiveness of $6,642/ton ROC reduced. Further, a requirement that BARCT retrofit technology be applied to any standard valve which cannot be repaired to below 500 ppmv during the quarterly LDAR activities, are estimated to generate additional, but unquantified emission reductions over the remaining life of the facility after the expansion was completed.

4.11. CEMS/Process Monitoring/CAM/Meter Calibration

4.11.1 <u>CEMS</u>: In 1983, and pursuant to PTO 4078, the District determined the emission sources and operating parameters that need continuous monitoring to ensure permit compliance. Tables 4.9 through 4.12 identify the current set of emission sources and operating parameters that require continuous monitoring pursuant to this permit. In order for the District to assess facility operational status and to ensure major emission sources are operating properly, selected monitored data are connected to and telemetered to the Data Acquisition System (DAS) at the District's office on a real-time basis; these parameters are also listed and specified in Tables 4.9 through 4.12.

The monitoring devices described herein must meet the applicable requirements set forth in District Rule 328 and in 40 CFR Part 51 and Part 60. Process parameter monitors shall be maintained and calibrated consistent with applicable CFR or District regulations and manufacturer's specifications. POPCO's current District-approved CEM Plan specifies the analyzer types, operating procedures, computer software and hardware, emission calculations, maintenance and calibration, and recordkeeping and reporting requirements.

The monitors must meet the requirements set forth in District Rule 328 and the Code of Federal Regulations (CFR), 40 CFR Parts 51, 52 and 60. These must be installed in accordance with manufacturer's specifications, and EPA requirements as specified in the CFR.

POPCO must obtain the District's approval of any modifications/updates to the current CEMS Plan. POPCO is required to follow the District *Continuous Emission Monitoring Protocol Manual*.

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

- B-801A/B Fuel Flows
- B-801A/B Incineration Zone Temperature Indicator(s)
- B-801A/B SO_x and NO_x mass emission CEM systems
- Stretford Unit Tailgas H_2S concentration analyzer
- Stretford Unit Tailgas Flow to B-801A/B
- Acid Gas to SRU Inlet flow meter
- Plant inlet sour gas flow rate, and H_2S concentration analyzer
- Plant outlet sales gas flow rate and H_2S concentration analyzer
- Flare header flow meters (acid gas and hydrocarbon manifolds)
- Compressor seal leakage to flare header flow meters (meter required for each compressor)
- Hour meters (emergency generator, emergency generator for the instrument air compressor and firewater pumps)
- Production meters (NGL shipped via truck, elemental molten and Stretford sulfur products, produced water via truck)
- TEG Reboiler fuel meters
- SRU Steam Generator fuel meter

As necessary to ensure compliance with this permit and applicable rule and regulations, the District may require POPCO, by written notice, to install additional process monitors and/or to expand the list of existing plant process monitors detailed in the list above.

4.11.3 CAM: *ExxonMobil – SYU Project* is a major source that is subject to the USEPA's Compliance Assurance Monitoring (CAM) rule (40 CFR 64). Any emissions unit at the facility with uncontrolled emissions potential exceeding major source emission thresholds for any pollutant is subject to CAM provisions. Currently no units at POPCO require a CAM plan.

4.11.4 Meter Calibration: To ensure that appropriate calibration and maintenance procedures are applied to the metering specified above, a *Process Monitor Calibration and Maintenance Plan* is required from POPCO. This Plan shall take into consideration manufacturer recommended maintenance and calibration schedules, as well as the following supplemental requirements:

- The sour gas flow meter and inlet H_2S analyzer shall follow the requirements in the District's CEM Protocol document.
- The Stretford H_2S analyzer and tailgas flow meter shall follow the CEM Protocol document.
- The Utility Boiler NO_x and SO_x CEMS system shall follow the CEM Protocol document.
- Where manufacturer guidance is not available, the recommendations of comparable equipment manufacturers and good engineering judgment shall be utilized.

4.12. Source Testing/Sampling

4.12.1 Source Testing: Source testing and sampling are required in order to ensure compliance with permitted emission limits, BACT, NSPS, prohibitory rules, control measures and the assumptions that form the basis of this operating permit. Tables 4.13 through 4.15 detail the emission units, pollutants and parameters, methods and frequency of required testing. POPCO is required to follow the District *Source Test Procedures Manual* (May 24, 1990 and all updates).

The parameters to be source tested annually (unless otherwise specified). The District may require additional source testing if problems develop or if unique circumstances occur that warrant special testing. The following emission points and control/monitoring systems are required to be source tested:

- Sulfur Recovery Unit/Stretford Tailgas Plant (percent mass H_2S and TRS reduction)
- Boilers B-801A/B (NO_X , SO_X, ROC and CO)
- Functional testing of the SRU Failure shutdown system to ensure excess SRU acid gas will not be flared subsequent to any unplanned SRU failure.
- SRU's Stretford Unit Oxidizer Tanks (ROC) testing performed upon District request, using District approved test methods.
- Wastewater Tank T-601 (ROC and H_2S)
- Wastewater Tank T-807 - ROC testing performed biennially, if in operation, using District approved test methods.

4.12.2 Sampling: Duplicate samples of the process streams below are required to be sampled and analyzed on a quarterly basis. A third party lab shall perform all analyses, except for daily sorbent tube samples.

- Feed Gas (sour): Sample taken at sample probe of inlet H_2S analyzer. Analysis for hydrogen sulfide and total sulfur composition.
- Boiler Fuel Gas: (a) Weekly sorbent tube for hydrogen sulfide; (b) Quarterly sampling for hydrogen sulfide and total sulfur composition.
- Sales (PUC Quality) Fuel Gas: Analysis for: HHV, total sulfur, hydrogen sulfide.
- Stretford Tailgas to Boilers: Analysis for: HHV

As necessary to ensure compliance with this permit and applicable rule and regulations, the District may require POPCO, by written notice, to sample additional process streams in a manner and frequency specified by the District. All sampling and analyses are required to be performed according to District-approved procedures and methodologies. Typically, the appropriate ASTM methods are acceptable. All sampling and analysis must be traceable by chain of custody procedures. POPCO shall obtain District approval of all sampling and analytical methods used to obtain the process stream data stated above. Section 9 details the sampling that is required.

4.13. Odor Monitoring

POPCO shall implement the District-approved *Odor Monitoring Plan* for ambient odor monitoring and a human olfactory verification program for the life of the POPCO facility. The site identified in Table 4.16, *LFC Odor*, shall monitor the parameters identified in Table 4.16. Other odor-related pollutant -specific monitoring equipment may be added to the stations, if deemed necessary by the District.

4.14. Part 70 Engineering Review: Hazardous Air Pollutant Emissions

Hazardous air pollutant emissions from the different categories of emission units at the POPCO facility 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 (April 2002) are used in conjunction with the ROC emission factor for the equipment item in question.

Potential HAP emissions from each emissions unit at the POPCO facility are listed in Section 5.

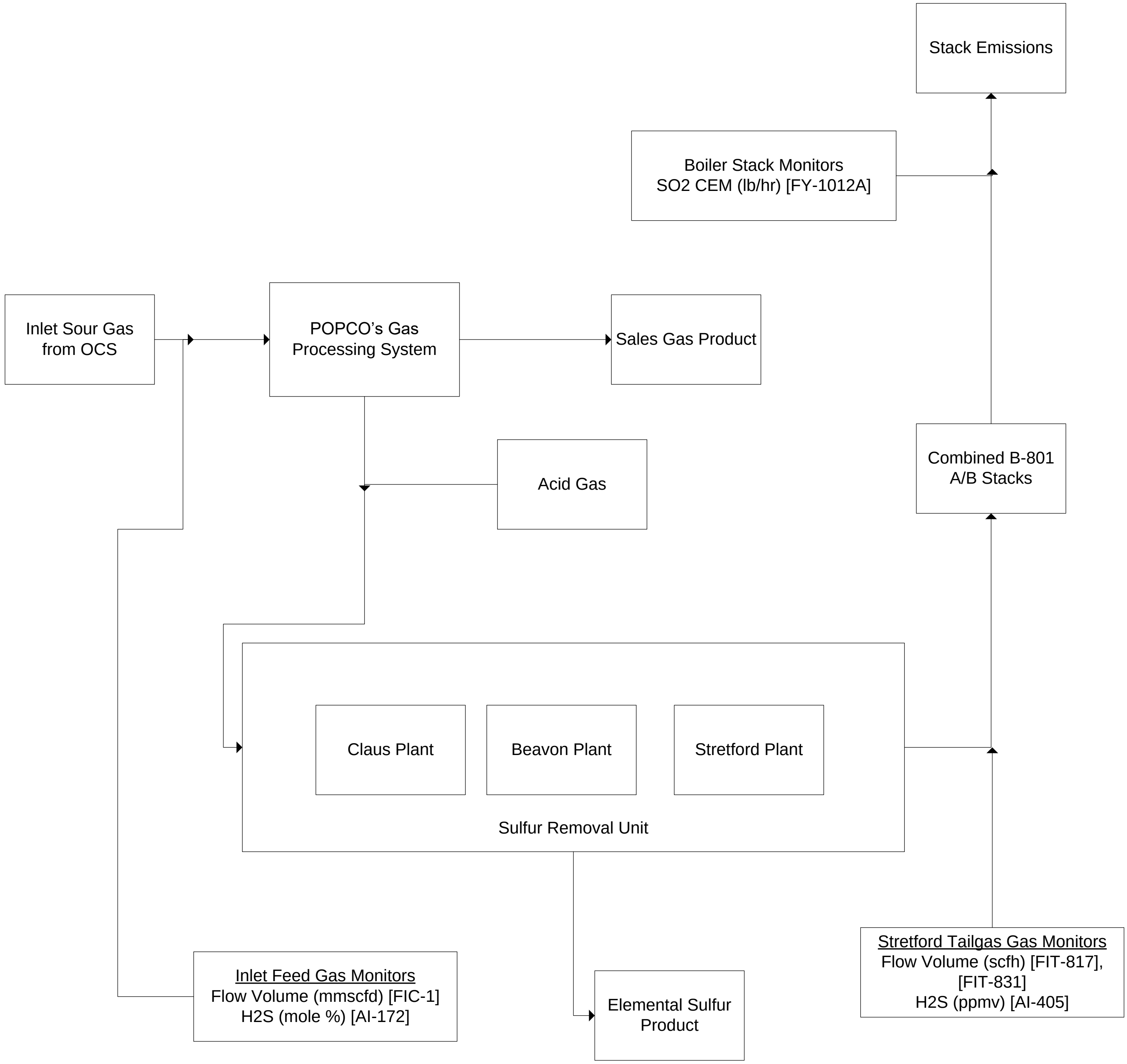


Figure 4.1 POPCO SRU BACT & NSPS Monitoring Systems

Table 4.1 Rule 331 Fugitive Hydrocarbon Inspection and Maintenance Program

	Standard Rule 331 Requirements	Existing Components (Subject to BARCT) [b.]	New Components (Subject to BACT) [a.]	Enhanced Fugitive I&M Requirements
Valves				
Leak Definition [d, e]	Gaseous: 1,000 ppmv	Gaseous: 500 ppmv	Gaseous: 100 ppmv	Gaseous: 100 ppmv
Monitoring [f, g]	Quarterly	Quarterly	Quarterly	Quarterly
Relief Valve Monitoring	Gaseous: Vented to flare	Gaseous: Vented to flare	--	--
Pump Monitoring	Gaseous: Dual Seals, monthly [j]	Gaseous: Dual Seals, monthly [j]	Gaseous: Dual Seals, monthly [j]	--
Flanges/Connections				
Leak Definition [d, e]	Gaseous: 1,000 ppmv	Flanges: 1,000 ppmv Static Threaded Connection: 500 ppmv [C. D]	Gaseous: 100 ppmv	Gaseous: 100 ppmv
Monitoring [k, l]	Annual	Annual	Annual	Quarterly[f]
Compressors				
Monitoring [m]	Gaseous: Vented to vapor control system	Gaseous: Vented to vapor control system	Gaseous: Vented to vapor control system	--
Open-Ended Lines				
Monitoring [k, l]	Capped	Capped	Capped	--
Repair Requirements [n, o, p]	First attempt within 5 calendar days. Repair within 15 calendar days.	First attempt within 5 calendar days. Repair within 15 calendar days. [b]	First attempt within 5 calendar days. Repair within 15 calendar days.	First attempt within 5 calendar days. Repair within 15 calendar days [c]
Recordkeeping and Reporting Requirements [q]	Similar to NSPS Subpart KKK	Similar to NSPS Subpart KKK	Similar to NSPS Subpart KKK	Similar to NSPS Subpart KKK

NOTE: These requirements are in addition to District Rule 331 and permit requirements. Where a conflict may occur, the requirement more protective to air quality (as determined by the Control Officer) shall apply

a. BACT. applies to all components permitted on or after February 4, 1997. Similar to New Source Performance Standards (NSPS); Equipment Leaks of VOC from Onshore Natural Gas Processing Plants; Final Rule, 40 CFR Part 60 Subpart KKK, FR Vol. 50, No. 121, June 24, 1985. Applicable to equipment in VOC service (that is, contains or contacts a process fluid that is at least 10 percent VOC by weight at 150ºC) or in wet gas service (that is, contains or contacts inlet gas before the plant extraction process). All components identified for I&M shall be uniquely tagged, in a District-approved manner, to distinguish these components from the components approved prior to that date.

Best Available Retrofit Control Technology (BARCT) Program

Applies to all components permitted before February 4, 1997. Applicable to components in gaseous and light hydrocarbon services, that is, contains or contacts a process fluid that is equal to or greater than 10 percent VOC by weight at 150ºC or in wet gas service (that is, contains or contacts inlet gas before the plant extraction process). All existing components identified for I&M shall be uniquely tagged, in a District-approved manner, to distinguish these components from components permitted on or after February 4, 1997.

b. Any standard-stem valve subsequent to repair per Rule 331 and which leaks between 501 and 1000 ppmv, is subject to BARCT retrofit with LEP technology within 1 calendar year of the date of failed repair. LEP is an acronym for Low Emissions Packing technology valve stem seal system. See District Policy and Procedure 6100.061 for definition of LEP.

Enhanced Fugitive Hydrocarbon Inspection and Maintenance Program

c. The minor leak threshold for repairs is defined as 500 ppmv for those valves and flanges/connections subject to the Enhanced Fugitive I&M Program defined in DOI 0034.

Gas Components Leak Detection

d. Gaseous and light hydrocarbon liquid component leakage monitoring will be determined by a hydrocarbon analyzer which uses the flame ionization detection method, and additionally by visual inspection.

e. Calibration of the hydrocarbon analyzer will be similar to NSPS requirements.

Valves

f. Reductions in fugitive emissions due to the implementation of the Rule 331 District I&M Programs assume that all valves are accessible to quarterly monitoring.

g. The quarterly valve monitoring program required by the District is similar to that of the NSPS valve monitoring program. NSPS requirements, subpart KKK (and VV) requires leak screening during initial first two months of operations of any new valve.

Connections

h. The same record keeping and reporting procedures as NSPS are also required for connections; alternatively, a procedure approved by the Air Pollution Control Officer can be used.

i. It is assumed that the total connection count includes all connections required for the venting of relief valves to a vapor control system, the capping of open-ended lines, and the conversion of sampling to a closed purge system.

j. Leak detection for connections in gaseous and light hydrocarbon liquid service will utilize measurement enhancement techniques if determined to be necessary by the District.

Pumps

k. The District I&M program on pumps with dual mechanical seals is similar to that required by NSPS on pumps with single seals. This also includes single seals on the sweet crude oil rover sample pump, PBE-1349, PBH-3334 and PBE-3335.

Compressors

l. The District fugitive emissions calculation assumes no emissions from compressor seals which are required by BACT to be vented to a vapor control system. The District assumes that a leak detection program around the compressors will be part of the I&M program to insure that the vent system is operating properly and that no emissions from the compressors are occurring.

Repair Requirements

m. Repair requirements follow NSPS requirements.

n. It is assumed that spare parts and maintenance personnel are available when necessary for repair.

o. Emissions reduction credit will not be applicable to leaking components that are not repaired within the requirements of this program. For repairs made at process turnarounds, emissions reduction credit will be based on the statistical frequency of process turnarounds or shutdowns.

Record Keeping and Reporting Requirements

p. Record keeping and reporting requirements follow the most stringent of NSPS requirements.

Component Accessibility

q. Consistent with NSPS, all components shall be accessible to leak detection monitoring where feasible. Access to components above ground level shall be maximized through the use of ladders, elevated platforms, manlifts, or other appropriate devices. Emissions reduction credit will be adjusted based on component accessibility.

Table 4.2 Rule 331 BACT Component Requirements

Tag No.	Component Type	Component Location	Plant/ P&ID	BACT Install Date	BACT Performance Standard	Notes
PO 21H-024	Valve	Union type bonnet of block valve installed on top of vessel V-104.	PO 21H	6/2/20	100 ppmv	
PO 21H-024	Valve	Threads on body of valve at top of vessel V-104	PO 21H	4/27/01	100 ppmv	Removed from service.
PO 21DD-02	Other	Front cover.	PO 21DD	7/24/02	100 ppmv	
PO 21A-170	Other	V-50TT-1B Mezzanine Above V-50E	PO 21A	3/22/04	100 ppmv	
21A 331	Valve	10" valve on Inlet Slug Catcher V-50B	21A	4/11/12	100 ppmv	
21K 027	Other	End flange on E-106B Exchanger	21K	7/22/12	100 ppmv	

Table 4.3 BACT Emission Unit/Process:
Fugitive Emissions from Valves and Connections in Hydrocarbon Service

Pollutant	Control Technology	Emission Limit/Performance Standard	Verification / Recordkeeping Requirements
ROC	Valves		
	1) Use of Sealess valves (e.g. Bellows) or low-emissions packing (LEP) systems; 2) Fugitive emissions Leak Detection and Repair (LDAR) program consistent with Rule 331 LDAR requirements, and 40 CFR subpart KKK frequencies.	LDAR minor leak threshold @ 100 ppmv THC per Method 21	1) District inspection during SCDP to verify component counts and configuration specified herein; 2) Periodic District inspection of POPCO records pursuant to Rule 331. New valves to be uniquely "tagged" to differentiate BACT LDAR threshold.
	Con (Flanges and Threaded Fittings)		
	1) Flange gaskets; graphitic-type or equivalent District-approved type, rated to 150 percent of process pressure at process temperature; 2) Static threaded connections maintained at <100 ppmv; 3) All connections subject to LDAR consistent with Rule 331 LDAR requirements, and 40 CFR subpart KKK frequencies.	LDAR minor leak threshold @ 100 ppmv THC per Method 21	1) District inspection during SCDP to verify component counts and configuration specified herein; 2) Same as 1) 3) Periodic District inspection of POPCO records pursuant to Rule 331. New connections to be uniquely "tagged" to differentiate BACT LDAR threshold.

Note: LEP valve systems are considered to employ one of the following types of valve actuator sealing systems: quarter turn; live-loaded packing; graphite or PTFE packing, precision machine stem; or other District-approved system.

Table 4.4 BACT Emission Unit/Process:
Fugitive Emissions from Pressure Relief Devices, Compressors, and Pumps in Hydrocarbon Service

Pollutant	Control Technology	Emission Limit/Performance Standard	Verification / Recordkeeping Requirements
ROC	Pressure Relief Devices		
ROC	1) All new PRD reliefs to be routed via a closed vent system to the facility flare (i.e., the "ZTOF).	The combined capture/destruction efficiency of the system which handles PRD reliefs is a minimum of 98 percent ROC by weight.	1) District inspection during SCDP to verify component counts and configuration specified herein. 2) The hard-piped vent system, and the ZTOF meets the capture/destruction efficiency requirement.
	Compressor		
	1) Double mechanical seals with barrier fluid; or, 2) Route seal leakage emission points to closed vent system; 3) Subject to LDAR inspection pursuant to Rule 331 and 40 CFR subpart KKK frequencies.	1) Not applicable; see 2) below 2) New compressor's (K-300C) seal leakage is vented to the ZTOF system which can destroy ROCs to a minimum of 95 percent mass destruction efficiency; 3) LDAR leakage performance standard of any piping connection, or atmospheric compressor seal, on or to compressor is 100 ppmv per Method 21.	1) District inspection during SCDP to verify component configuration specified herein; 2) Periodic District inspection of POPCO records pursuant to Rule 331. New compressor to be uniquely "tagged" to differentiate BACT LDAR threshold.
	Pumps (in Liquid Service)		
	1) Equipped with double mechanical seal and barrier fluid systems; 2) Subject to LDAR inspection pursuant to Rule 331 frequencies, and 40 CFR subpart KKK frequencies.	Seal leakage LDAR threshold at 500 ppmv per Method 21.	1) District inspection during SCDP to verify component counts and configuration specified herein; 2) Periodic District inspection of POPCO records pursuant to Rule 331. New pumps to be uniquely "tagged" to differentiate BACT LDAR threshold.

Table 4.5 BACT Emission Unit/Process: Sulfur Recovery Unit (SRU)

Pollutant	Control Technology	Emission Limit/Performance Standard	Verification / Recordkeeping Requirements
SO_x as SO_2	Three stage conversion process of H_2S in acid gas from Sulfinol Amine System, to elemental sulfur ◊ *First stage*: liquid oxygen enhanced, Claus-type catalytic reduction of H_2S to molten elemental sulfur; without acid gas enrichment recycle. ◊ *Second stage*: Beavon-type catalytic reduction of Claus tailgas SO_x to H_2S. ◊ *Third stage*: Stretford H_2S removal process of Beavon tailgas; produces wet elemental sulfur cake	<u>At all SRU Acid Gas Feed Capacities</u> (0 LTD to 60 LTD) The more stringent of the following two requirements: 1) 99.9 percent by mass H_2S removal efficiency across the SRU, including sulfur removed by Stretford unit; or, 2) 100 ppmv, dry basis, Stretford Tailgas H_2S limit prior to incineration; and, No more than 2.89 lb/hr of H_2S in Stretford Tailgas or an equivalent SO_2 mass limit of 5.44 lb/hr to the boilers from Stretford Tailgas. <u>Transient Operations</u> *Startups & Scheduled SRU Shutdown*[1, 2]: 3) SO_2 mass limit of 5.67 lb/hr from B-801A & B stacks.	<u>All Operating Modes</u> 1) Mass H_2S removal efficiency, as follows: • Certified & calibrated inlet H_2S analyzer • Certified & calibrated inlet sour gas feed flow meter • B-801A/B SO_2 mass emissions CEM 2) Stretford Tailgas H_2S ppmv: • Certified & calibrated tailgas H_2S analyzer • Certified & calibrated Stretford tailgas flow meter 3) B-801A/B SO_2 mass emissions CEM: • Certified, calibrated and operated pursuant to 40 CFR and District CEMS Protocol.

NOTES:

1. SRU Startups are defined as the first 12 hours of SRU operation following a complete loss of platform gas feed for one hour or longer.

2. SRU Shutdowns are defined as the 48-hour period immediately preceding a scheduled shutdown of the SRU. The beginning of the 48-hour period shall commence when platform gas feed is curtailed. During this time, the SRU is operated in a manner so as to safely prepare the catalyst bed for shutdown.

Table 4.6 BACT Emission Unit/Process: Sulfur Recovery Unit Failure and Natural Gas Combustion

Pollutant	Control Technology	Emission Limit/Performance Standard	Verification / Recordkeeping Requirements
SO_x	<u>SRU Failure Mitigation System</u> 1) POPCO to install a system which prevents excess flaring of acid gas: Section 9.C of this permit and Section 10.2 of ATC 9047 specify the process controls and sensors used to prevent flaring of SRU feed acid gas in excess of 1450 SCF which may be generated by the Sulfinol regenerator upon an unexpected SRU failure and shutdown.	District BACT standard for mitigating potential violations of SO_2 AAQS caused by unplanned SRU acid gas flaring is, as follows: ⇒ First, equipment and/or process controls must be considered to reduce the acid gas flow rate and/or quantity of acid gas flared such that no SO_2 AAQS violation occurs; or, ⇒ If no mitigation system is technically or safely feasible to eliminate a SO_2 AAQS violation, then a system shall be installed to reduce by a minimum of 90% by weight the potential uncontrolled acid gas released during the worst-case SRU flaring event; (the 90% standard may be relaxed with District concurrence that justifiable engineering or safety considerations prevent attainment of the 90% standard).	• District inspection during SCDP to verify system configuration specified in Section 9.C of this permit and Section 10.2 of ATC 9047.
	<u>Natural Gas Combustion Processes</u> 1) Regenerable Sulfinol amine-based solutions clean the raw sour-gas of H_2S to <6 ppmv. Residual total sulfur content of any cleaned fuel gases is less than 24 ppmv total sulfur. Absorbed acid offgas produced from regenerated amine solution processed by the facility SRU.	⇒ All natural gas fuels and purge gases limited to 24 ppmv total sulfur content.	• Section 9.C of this permit.

Table 4.7 BACT Emission Unit/Process: Solvents

Pollutant	Control Technology	Emission Limit/Performance Standard	Verification / Recordkeeping Requirements
ROC	Use of Low VOC or Water-Based Solvents (where feasible)	⇒ District-approved BACT Solvent List	Condition 9.C

Table 4.8 BACT Emission Unit/Process: Planned Flaring

Pollutant	Control Technology	Emission Limit/Performance Standard	Verification / Recordkeeping Requirements
ROC, SOx	Thermal Oxidizer	⇒ Use of purge gas that meet sales gas quality ⇒ Properly maintained thermal oxidizer combustors ⇒ Use of sales gas in the compressors ⇒ Limit the sulfur content of the purge gas to 80 ppmv total sulfur and 4 ppmv H_2S (sales gas quality – PUC Quality)	Implementation of a *Thermal Oxidizer Combustor Maintenance Plan* / Section 9.C

Table 4.9 Parameters to be Continuously Monitored: Sulfur Recovery Unit (SRU)

Parameter Monitored	Instrument Tag No. [8]	DAS Variable[1]	Monitored Units	Permit Limit	Averaging Period	Footnote Comments
Inlet Sour Gas Feed Flow	FIC-1	INGASFLO	MMSCF/D	80	Daily	1, 6, 7, 9
Inlet Sour Gas H_2S Content	AI-172	INGASH_2S	Mole % H_2S	2.67	6-minute	1, 5, 6, 7, 9
Stretford Tailgas H_2S Content	AI-405	TAILH_2S	ppmvd H_2S	100	6-minute	1, 2a, 5, 6, 7, 9
Stretford Tailgas Flow to Boilers	FIT-817A, FIT-831A	TAILGFLO ATGFLOW BTGFLOW	SCFH	None	6-minute	1, 6, 7, 9
Combined Boiler SO_x as SO_2 Emissions	FY-1012A	ABSO_2LB	lb/hr SO_2	5.67	6-minute and Sliding Hour	1, 2a, 5, 6, 7, 9
SRU Claus Elemental Sulfur Production	Not Applicable		LTD			4
SRU Stretford Sulfur Production	Not Applicable		Mass per shipment			4

Compliance Formulae

<u>BACT for H_2S Removal</u>
FIC-1 = (FY1) – (FT-196)
FI-405 = (FIT-817A) + (FIT-831A)
Where:
FY1 = Total Sour Gas Feed Flow FT-196 = Sour Gas to LFC

Inlet H_2S, lb/hr =

$$F = [FIC - 1] * \left(\frac{[AI - 172] * 34 * 10^6}{24 * 379 * 100} \right)$$

Stretford H_2S, lb/hr =

$$S = [FI - 405] * \left(\frac{[AI - 405] * 34}{379 * 10^6} \right)$$

SRU, % H_2S mass removed = (F-S)/F * 100%

<u>NSPS Subpart LLL Equivalent Performance for Total Sulfur Removal</u>

Inlet Total Sulfur (as SO_2), lb/hr = "T" = "F" (see above) * (64/34)
Combined Boiler Stack Sulfur Emissions as SO_2, lb/hr = "E" = (FY-1012A)
SRU, % Total Sulfur removed = (T-E)/T * 100%

Table 4.10 Parameters to be Continuously Monitored: Boilers

Parameter Monitored	Instrument Tag No. [8]	DAS Variable[1]	Monitored Units	Permit Limit	Averaging Period	Footnote Comments
Stack Emissions from Boiler A	AI-810B	ANOXPPMC	ppmv NO_x (uncorrected)	--	6-minute	4, 6, 7, 8
	FY-810B	ANOXLB	lb/hr NOx	1.48	6-minute and Sliding Hour	2a, 4, 5 ,6
		ASO2LB	lb/hr SOx	0.11	6-minute and Sliding Hour	4, 5 ,6
Stack Emissions from Boiler B	AI-812B	BNOXPPMC	ppmv NO_x (uncorrected)	--	6-minute	4, 6, 7, 8
	FY-812B	BNOXLB	lb/hr NOx	1.48	6-minute and Sliding Hour	2a, 4, 5 ,6
		BSO2LB	lb/hr SOx	0.11	6-minute and Sliding Hour	4, 5 ,6
Combined Stack Emissions from Boiler A and B	FY-810A & FY-812A	ABSO2LB	lb/hr SOx	5.67	6-minute and Sliding Hour	
Fuel Feed Rate to Boiler A	FIC-818	AFUELGAS	scfh	27,948	Hourly Average	
Fuel Feed Rate to Boiler B	FI-832	BFUELGAS	scfh	27,948	Hourly Average	
Boiler Incineration Zone Temperature for Boiler A	TIC-812	ATEMP	degrees F	919	Daily Average	2b
Boiler Incineration Zone Temperature for Boiler B	TI-821	BTEMP	degrees F	919	Daily y Average	2b
Stack Volume Flow Rate from Boiler A	FI-807A	ASTKFLOW	kscfh			5, 6
Stack Volume Flow Rate from Boiler B	FI-835A	BSTKFLOW	kscfh			5, 6

Table 4.11 Parameters to be Continuously Monitored: ZTOF Thermal Oxidizer[3]

Parameter Monitored	Instrument Tag No. [8]	DAS Variable[1]	Monitored Units	Permit Limit	Averaging Period	Footnote Comments
HC Manifold Gas Flow Rate	GF90, Diamond II annubar	HCHEADER	scfh	500	Hourly Average	2a, 6, 7
Acid Gas Manifold Gas Flow Rate	GF90	AGHDRFLO	scfh	500	Hourly Average	2a, 6, 7
Pilot Temperature	ALH-804	PILOTTMP	degrees F			2b
Pilot and Purge Gas Flow Rates						6
Flare Gas Sampling						
Compressor Seal Leakage Rates						6

Table 4.12 Parameters to be Continuously Monitored: Gas Processing[3]

Parameter Monitored	Instrument Tag No. [8]	DAS Variable[1]	Monitored Units	Permit Limit	Averaging Period	Footnote Comments
Sales Gas Stream	AI-331	$2H_2SS$	ppmv H_2S	4	6-minute	7, 9, 10

NOTES

1. Parameters to be telemetered and connected to the DAS.
2. Equipped with alarm configured internally to the District DAS system:
   a) Equipped with High in plant alarm.
   b) Equipped with Low in plant alarm.
   c) Equipped with Hi/Low in plant alarm.
3. Continuous monitoring of other parameters is not required initially. However, the District may request that monitors for other parameters be installed in the future.
4. Production records will be maintained through the volume of produced sulfur sold. The quantity of produced sulfur will be determined by State certified truck scales.
5. DAS to be configured with high or low process-alarm at the District based on telemeter DAS data.
6. Permanent recording of parameter raw data required via strip-chart, circular chart, or computer printout.
7. Parameters to be included in quarterly reports. The District may request additional information be presented in quarterly reports if necessary.
8. Nomenclature indicates a POPCO-specified process indicator/device tag number.
9. Indicates metering must be operated and maintained to meet District's *CEM Protocol*.
10. PPMV for NO_x corrected 3% oxygen and adjusted for TGU gas dilution effect per §9.C.1(a)(i) of this permit.

Table 4.13 Source Test Parameters for Boilers (B-801 A and B-801 B)

Emission & Test Points	**Pollutants/Parameters** [2]	**Test Methods** [1, 3]
Boiler Stacks [2]	NO_x - ppmv & lb/hr	EPA Method 7E
	CO - ppmv & lb/hr	EPA Method 10
	SO_x - lb/hr	EPA Method 6C, or CARB Method 100
	ROC – lb/hr	EPA Method 18
	Sampling Point Loc.	EPA Method 1
	Stack Gas Flow Rate	EPA Method 2
	O_2, CO_2, Dry Mole Wt	EPA Method 3
	Moisture Content	EPA Method 4
	Stack TRS/(SO_2 + TRS) ppmv Ratio	EPA Method 15
	Boiler Incineration Zone Temperature	(°F)
Boiler	Fuel Gas Flow Rate	Plant Gas meter
Fuel Gas(es)	Higher Heating Value	ASTM D 1826-88
	Total Sulfur Content [4]	ASTM D 1072
Inlet Feed Gas	Flow rate (MMSCFD)	EPA Method 2, CEM Protocol
Inlet Feed Gas	H_2S Concentration (ppmv)	CEM Protocol
Stretford Tailgas	Tailgas Flow Rate	Stretford Tailgas Flow meter
Stretford Tailgas	Tailgas Composition [4]	ASTM 1945-81

BOILER STACK SOURCE TEST FREQUENCY REQUIREMENTS

Pollutant	**Frequency**
NO_X, CO ppm	Semiannual[6]
NO_X, CO lb/hr	Annual
SO_x	Annual
SO_2/TRS ratio	Annual
ROC	Biennial

SITE SPECIFIC REQUIREMENTS

1. Alternative methods may be acceptable on a case-by-case basis.
2. The emission rates shall be based on EPA Methods 2 and 4, or Method 19 along with the heat input rate.
3. For NO_x, SO_x, CO, ROC and O_2 a minimum of three 40-minute runs shall be obtained during each test.
4. Total sulfur content fuel samples shall be obtained using EPA Method 18 with Tedlar Bags (or equivalent) equipped with Teflon tubing and fittings. Turnaround time for laboratory analysis of these samples shall be no more than 24 hours from sampling in the field.
5. Source testing shall be performed for each boiler in an "as found" condition. Annually, at least one boiler shall be tested with Stretford tailgas combustion.
6. The boilers shall be tested for NO_x and CO twice per year, both tests shall determine compliance with the exhaust concentration limits of the permit. During one test compliance with the mass emissions limits of the permit shall be determined.

Table 4.14 Source Test Parameters for the SRU

Emission & Test Points	Pollutants/Parameters [2]	Test Methods [1, 3]	Frequency
Stretford Tailgas	Tailgas Flow Rate	Stretford Tailgas Flow meter	Annual
Stretford Tailgas	Tailgas Composition [4]	ASTM 1945-81	Annual

SITE SPECIFIC REQUIREMENTS

1. Alternative methods may be acceptable on a case-by-case basis.
2. The emission rates shall be based on EPA Methods 2 and 4, or Method 19 along with the heat input rate.
3. For SO_x and O_2 a minimum of three 40-minute runs shall be obtained during each test.
4. Total sulfur content fuel samples shall be obtained using EPA Method 18 with Tedlar Bags (or equivalent) equipped with Teflon tubing and fittings. Turnaround time for laboratory analysis of these samples shall be no more than 24 hours from sampling in the field.

Table 4.15 Source Test Parameters for the Wastewater Tanks (T-601 and T-807)

Emission & Test Points	Pollutants/Parameters	Test Methods [1, 2]	Frequency
	Total Hydrocarbons	EPA Method 25A	Biennial
	ROC – ppmv & lb/hr	EPA Method 18	Biennial

SITE SPECIFIC REQUIREMENTS

1. Alternative methods may be acceptable on a case-by-case basis.
2. For ROC a minimum of three 40-minute runs shall be obtained during each test.

Table 4.16 Requirements for Odor Monitoring

Parameters to be Monitored	LFC Odor [1]
H_2S	X
TRS	-
WS Avg.	X
WD Avg.	X
WS Result	X
WD Result	X
Sigma Theta	X
Int Temp.	X
Ext. Temp.	X

NOTES:

1 This station shall be located at the property boundary of the ExxonMobil LFC facility.

Table 4.17 NSPS LLL Compliance Requirements

Item	*Subpart LLL Section (§)*	*Subpart LLL Requirement Summary*	*Source Test Observation* [*Report Page*]
1	60.642 (a)	Initial SO_2 removal efficiency, "R" test per §60.8 and Subpart LLL, Table 1. Table 1 requires Z_i for: Y = 13.77% H_2S X = 15.86 LTD Z_i = 93.5 %	Test was done within 180 day window at 72.8 MMSCFD rate (97.1 % of maximum design feed rate). Y= 13.77% X= 15.86 LTD Observed R = 99.9% [Table 4-3]
2	60.642 (b)	*Ongoing Compliance with NSPS*	See EPA Subpart LLL Waiver letter of 11/19/96. POPCO monitors inlet sour gas H_2S content and total flow volume. PTO 8092 BACT standard for H_2S & TRS removal is greater than any applicable Subpart LLL requirement. Inlet H_2S analyzer (AI-172) passed RATA test on October 5, 1998.
3	60.643 (1)	R must be > or equal to Z_i per §60.642 (a).	Observed R = 99.9% [Table 4-3] R is > than Z_i as determined through 8/11/98 to 8/12/98 source testing.
4	60.643 (2)	*Ongoing Compliance with NSPS* R must be > or equal to Z_c per §60.642 (b).	PTO 8092 TRS removal efficiency requirements are more stringent than any Subpart LLL, Table 2 requirements for Z_c. Per EPA waiver, ongoing compliance with Z_c shall be based on compliance with PTO BACT requirements and the real-time monitoring of the SRU's TRS removal efficiency.
5	60.644	Initial compliance test analytical methods shall be followed.	Notwithstanding the 11/19/96 EPA waiver for acid gas flow measurements, all §60.644 test methods were followed to calculate X, Y and R of 60.642 (a). [Table 4-3]
6	60.646 (a)	*Ongoing compliance with NSPS*	See 11/19/96 EPA waiver and PTO 8092, Table 4.3 and Condition 9.C.7 requirements. R = (S-E)/S where S is inlet SO_2 equivalents in the sour feed gas. E is directly measured at the plant boilers SO_2 CEM.
7	60.646 (b)	*Ongoing Compliance with NSPS* Requires a SO_2 CEM where a reduction control system is followed by a continuous incineration device (i.e., the POPCO boilers), with the following additional requirements: (1) CEM measures atmospheric SO_2 emissions; and the span of the CEM shall be set so that the equivalent emission limit in §60.642(b) will be between 30% and 70% of the measurement range of the CEM. (2) An incineration combustion zone temperature monitor, accurate to +/- 1% of actual temperature, if ppmv of SO_2/(ppmv of SO_2 + TRS) $\leq$ 0.98 per §60.642 (a) tests, and temp monitoring to validate SO_2 CEM is measuring all TRS emissions. (3) A TRS monitor can be used in lieu of (2) above to calculated total sulfur emissions (E).	(1) POPCO CEM meets applicable 40CFR requirements. (2) Source tests showed that with maximum tailgas flow to one boiler and temperature of no less than 919 ºF, that SO_2/(SO_2+TRS) is $\leq$ 0.98 {0.993 actual ratio}. [Table 4-4] 919 ºF is minimum boiler operating temperature when tailgas is being incinerated. (3) Not applicable to POPCO; see item (2) above.
8	60.646 (c)	Not applicable to POPCO.	Not applicable to POPCO
9	60.646 (d)	*Ongoing Compliance with NSPS* Average achieved sulfur emission reduction efficiency (R) shall be calculated for each 24-hour interval. The beginning and end of the 24-hour interval may be at any selected clock time, but it must be consistent. The 24-hour SO_2 reduction efficiency, R, shall be based on the 24-hour average of sulfur production rate	Pursuant to an EPA-approved waiver, R is monitored by a mass balance of the inlet sulfur fed to the plant versus that emitted at the boiler stacks. The S production will the difference between the feed sulfur (F) and E sulfur emitted, as follows:

Item	*Subpart LLL Section (§)*	*Subpart LLL Requirement Summary*	*Source Test Observation* [*Report Page*]
		(S) and the sulfur emission rate (E), consistent with the following subparagraph requirements: (1) data from 60.646(a) instrumentation shall determine S; (2) data from 60.646.(b) shall determine E. The E CEM must provide at least one data point in each successive 15-minute interval; at least two data points must be used to calculate each 1-hour average. A minimum of 18, 1-hour averages must be used to computed each 24-hour average.	R = (F-E)/F = 1 – E/F (1) No elemental sulfur production, S, monitoring will be performed per the EPA waiver; (2) This PTO requires that six-minute average CEM data points be obtained for the E and feed sulfur, F, parameters, which are used to compute hourly and daily averages of R.
10	60.646 (e)	Alternative R monitoring protocol for source less than 150 LT/D capacity.	POPCO has not opted for this method.
11	60.646 (f) & (g)	*Ongoing Compliance with NSPS* Monitoring devices required per 60.646 (b)(1), (b)(3) and (c) of this section shall be calibrated at least annually per manufacturer's and §60.13(b) specifications, and otherwise shall be subject to the General Provisions requirements of §60.13(b).	POPCO's CEM Plan is required to meet these minimum requirements for the E and F CEM monitors.

5.0 Emissions

5.1. General

Emissions calculations are divided into "permitted" and "exempt" categories. District Rule 202 lists what equipment is exempt from permit. The permitted emissions for each emissions unit is based on the equipment's potential-to-emit (as defined by Rule 102). Section 5.2 details the permitted emissions for each emissions unit. Section 5.3 details the overall permitted emissions for the facility based on reasonable worst-case scenarios using the potential-to-emit for each emissions unit. Section 5.4 provides the federal potential to emit calculation using the definition of potential to emit used in Rule 1301. Section 5.5 provides the estimated HAP emissions from the POPCO facility. Section 5.6 provides the estimated emissions from permit exempt. In order to accurately track the emissions from a facility, the District uses a computer database. Attachment 10.3 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) [c]
- Reactive Organic Compounds (ROC)
- Carbon Monoxide (CO)
- Sulfur Oxides (SO_x) [d]
- Particulate Matter (PM) [e]
- Particulate Matter smaller than 10 microns (PM_{10})
- Particulate Matter smaller than 2.5 microns ($PM_{2.5}$)
- Greenhouse Gases (GHG)

Permitted emissions are calculated for both short term (hourly and daily) and long term (quarterly and annual) time periods. Section 4.0 (Engineering Analysis) provides a general discussion of the basic calculation methodologies and emission factors used. The reference documentation for the specific emission calculations, as well as detailed calculation spreadsheets, may be found in Section 4 and Attachment 10.1. Table 5.1 provides the basic operating characteristics. Table 5.2 provides the specific emission factors. Tables 5.3 and 5.4 show the permitted short-term and permitted long-term emissions for each unit or operation. In these tables, the last column indicates whether the 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 are not enforceable (District or federal) and are indicated by the symbol "NE".

[c] Calculated and reported as nitrogen dioxide (NO_2)
[d] Calculated and reported as sulfur dioxide (SO_2)
[e] Calculated and reported as all particulate matter smaller than 100 μm

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 for each emission unit are assumed. Table 5.5 shows the total permitted emissions for the facility. Peak quarterly and annual emissions were based on the following, equipment-operating assumptions based on 8760 hrs/yr, and 2190 hrs/qtr, unless otherwise noted:

- 2 Utility boilers operating at maximum rating (41.000 MMBtu/hr).
- Sulfur Recovery/Tail Gas Unit operating at maximum rating (60 – 80 LTD; depending on H_2S levels).
- A 5.620 MMBtu fuel combustion contribution from SRU tailgas incineration to either, or split between both, B-801 A/B boilers.
- Flare pilot and purge volumes operating at maximum rating and 24 ppmv total sulfur content (pilot) and 80 ppmv total sulfur/4 ppmv H_2S (purge); baseline system leakage for the HC flare header and the acid gas flare header.
- Planned flaring pursuant to POPCO's approved Rule 359 Flare Minimization plan, as modified by the AQIA of this event documented in ATC 9047 and ATC 9047-01 to not exceed 0.757 MMSCF/hr and 18.20 MMSCFD of sales gas quality gas (1190 Btu/SCF, HHV basis). Long term planned flaring pursuant to POPCO's approved Rule 359 Flare Minimization plan not exceeding 18.20 MMSCF/month of sales gas quality gas (1190 Btu/SCF, HHV basis).
- Stretford Oxidizer Tank emissions of 0.10 lb/hr.
- Methanol tank operations at permitted throughputs.
- 2 Wastewater Tanks
- Emergency/Standby Diesel-Fired Engine
- Emergency Electrical Generator – Instrument Air

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

Table 5.6 lists the federal Part 70 potential to emit. Being a NSR source, all project emissions, except fugitive emissions that are not subject to any applicable NSPS or NESHAP requirement are counted in the federal definition of potential to emit. For the POPCO facility, fugitives from equipment subject to NSPS KKK and LLL are included in the federal PTE. Since this entire facility is a Gas Processing Plant subject to the above NSPS, the fugitives are included in the federal PTE calculations.

5.5 *Part 70: Hazardous Air Pollutant Emissions for the Facility*

Total emissions of hazardous air pollutants (HAP) are computed for informational purposes only. HAP emission factors are shown in Table 5.7. Potential annual HAP emissions, based on the worst-case scenario listed in Section 5.3 above, are shown in Table 5.8.

5.6 Exempt Emission Sources/Part 70 Insignificant Emissions

Equipment/activities exempt pursuant to Rule 202 include maintenance operations involving surface coating. 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.

Table 5.9 presents the estimated annual emissions from these exempt equipment items, including those exempt items not considered insignificant. This permit includes the Solvents/Surface coating activities during maintenance operations. The basis for these calculations is presented in Table 10.1.

Table 5.1 Operating Equipment Description

Table 5.1: Operating Equipment Description
ExxonMobil POPCO Gas Plant
PT-70/Reeval 8092 - R10

Equipment Item	Description		Device Specifications					Usage Data		Maximum Operating Schedule			
		District ID#	Fuel	HHV	ppmv S	Size	Units	Capacity	Units	hr	day	qtr	year
Utility Boiler													
	Boiler B-801 A	002350	PG	1467	24	41.00	MMBtu/hr	41.00	MMBtu/hr	1	24	2,190	8,760
	Boiler B-801 B	002351	PG	1467	24	41.00	MMBtu/hr	41.00	MMBtu/hr	1	24	2,190	8,760
Stretford Tailgas Incineration													
	Boiler B-801 A and/or B-801 B		TGU	--	--	5.62	MMBtu/hr	5.62	MMBtu/hr	1	24	2,190	8,760
Sulfur Recovery Unit – Stretford Tailgas													
	Boiler B-801 A and/or B-801 B		TGU	--	100	99.9	% H_2S Reduction	60.00	LT/D H_2S	1	24	2,190	8,760
John Zink Thermal Oxidizer (ZTOF) – Planned Pilot/Purge													
	Pilot Gas	102614	PG	1190	24	2,000	scf/hr	2.38	MMBtu/hr	1	24	2,190	8,760
	Purge Gas	102614	PG	1190	80	200	scf/hr	0.24	MMBtu/hr	1	24	2,190	8,760
John Zink Thermal Oxidizer (ZTOF) – Planned													
	AG Header - Compressor Seal Leakage	102615	PG	1190	239	311	scf/hr	0.37	MMBtu/hr	1	24	2,190	8,760
	HC/AG Headers - Baseline System Leakage	102615	PG	1190	239	600	scf/hr	0.71	MMBtu/hr	1	24	2,190	8,760
John Zink Thermal Oxidizer (ZTOF) – Planned Other													
	Startups and Maintenance	102616	PG	1190	24	0.76	MMSCF/hr	900.93	MMBtu/hr	1	24	43	172
	Tailgas Incineration in ZTOF	108094	TGU	--	--	5.62	MMBtu/hr	5.62	MMBtu/hr	1	8	16	64
John Zink Thermal Oxidizer (ZTOF) – Unplanned Other													
	Miscellaneous	108095	PG	1190	239	0.3	MMSCF/hr	357.000	MMBtu/hr	1	2.5	2.5	5
	SRU Failure	102617	Acid Gas	1114	41,640	1,480	scf/event	1.65	MMBtu/event	0.008	0.008	0.008	0.008

Equipment Item	Description		Device Specifications					Usage Data		Maximum Operating Schedule			
		District ID#	Fuel	HHV	%S	Size	Units	Capacity	Units	hr	day	qtr	year
Fugitive Components – Gas/Light Liquid Service													
	Valves - Unsafe	007070	--	--	--	32	clp	--	--	1	24	2,190	8,760
	Valves - Bellows / Background ppmv	007066	--	--	--	631	clp	--	--	1	24	2,190	8,760
	Valves - Category B	007068	--	--	--	1,905	clp	--	--	1	24	2,190	8,760
	Valves - Category C	106397	--	--	--	434	clp	--	--	1	24	2,190	8,760
	Valves - Category F	009712	--	--	--	269	clp	--	--	1	24	2,190	8,760
	Valves - Category J	007067	--	--	--	1,100	clp	--	--	1	24	2,190	8,760
	Flanges/Connections - Accessible/Inaccessible	007071	--	--	--	7,168	clp	--	--	1	24	2,190	8,760
	Flanges/Connections - Unsafe	007074	--	--	--	615	clp	--	--	1	24	2,190	8,760
	Flanges/Connections - Category B	007072	--	--	--	4,375	clp	--	--	1	24	2,190	8,760
	Flanges/Connections - Category C	007073	--	--	--	1,875	clp	--	--	1	24	2,190	8,760
	Flanges/Connections - Category F	133978	--	--	--	156	clp	--	--	1	24	2,190	8,760
	Compressor Seals - To VRS	007079	--	--	--	6	clp	--	--	1	24	2,190	8,760
	PSV - To Atm/Flare	007075	--	--	--	154	clp	--	--	1	24	2,190	8,760
	Pump Seals - Single	007081	--	--	--	2	clp	--	--	1	24	2,190	8,760
	Pump Seals - Dual/Tandem	007080	--	--	--	10	clp	--	--	1	24	2,190	8,760
	Total Components:					18,732	clp						
Fugitive Components – Oil Service													
	Valves - Accessible/Inaccessible	113979	--	--	--	2	clp	--	--	1	24	2,190	8,760
	Flanges/Connections - Accessible/Inaccessible	113970	--	--	--	6	clp	--	--	1	24	2,190	8,760
	Total Components:					8	clp						
Tanks													
	Methanol Tank (T-111)	102620	--	--	--	10,500	gallons	1.9	psia	1	1	1	1
	Wastewater Tank (T-601)	103103	--	--	--	92,000	gallons	490.87	ft^2	1	24	2,190	8,760
	Wastewater Tank (T-807)	103104	--	--	--	36,700	gallons	78.54	ft^2	1	24	2,190	8,760
Internal Combustion Engines													
	FW Pump A	002359	D2	140,000	0.05	420	bhp	3.23	MMBtu/hr	1	2	NA	NA
	FW Pump B	002356	D2	140,000	0.05	420	bhp	3.23	MMBtu/hr	1	2	NA	NA
	Emergency Electrical Generator Instr Air	002357	D2	140,000	0.05	111	bhp	0.85	MMBtu/hr	1	2	20	20
	Emergency Backup Generator	390276	D2	140,000	0.05	95	bhp	0.73	MMBtu/hr	1	2	50	50
Solvent Usage													
	Cleaning/Degreasing	008662	--	--	--	various	lb/gal	various	lb/gal	1	24	2,190	8,760

Table 5.2 Equipment Emission Factors

Table 5.2: Equipment Emission Factors
ExxonMobil POPCO Gas Plant
PT-70/Reeval 8092 - R10

Equipment Item / Description	District ID#	NO_X	ROC	CO	SO_X	PM	PM_{10}	$PM_{2.5}$	GHG	Units
Utility Boiler										
Boiler B-801 A	002350	0.036	0.00098	0.073	0.0028	0.00898	0.00853	0.00853	117.00	lb/MMBtu
Boiler B-801 B	002351	0.036	0.00098	0.073	0.0028	0.00898	0.00853	0.00853	117.00	lb/MMBtu
Stretford Tailgas Incineration										
Boiler B-801 A and/or B-801 B		0.036	0.00098	0.073	See SRU	0.00898	0.00853	0.00853	117.00	lb/MMBtu
Sulfur Recovery Unit – Stretford Tailgas Incineration/Stretford Oxidizer Tank										
Boiler B-801 A and/or B-801 B			0.10		5.44					lb/hr
John Zink Thermal Oxidizer (ZTOF) – Planned Pilot/Purge Flaring										
Pilot Gas	102614	0.017	0.126	0.012	0.0034	0.0001	0.0001	0.0001	117.00	lb/MMBtu
Purge Gas	102614	0.017	0.126	0.012	0.0114	0.0001	0.0001	0.0001	117.00	lb/MMBtu
John Zink Thermal Oxidizer (ZTOF) – Planned Continuous Flaring										
AG Header - Compressor Seal Leakage	102615	0.118	0.126	0.012	0.0339	0.0001	0.0001	0.0001	117.00	lb/MMBtu
HC/AG Headers - Baseline System Leakage	102615	0.118	0.126	0.012	0.0339	0.0001	0.0001	0.0001	117.00	lb/MMBtu
John Zink Thermal Oxidizer (ZTOF) – Planned Other Flaring										
Startups and Maintenance	102616	0.200	0.13	0.36	0.0034	0.014	0.014	0.014	117.00	lb/MMBtu
Tailgas Incineration in ZTOF	108094	0.200	0.13	0.36	See SRU	0.014	0.014	0.014	117.00	lb/MMBtu
John Zink Thermal Oxidizer (ZTOF) – Unplanned Other Flaring										
Miscellaneous	108095	0.200	0.13	0.36	0.0339	0.014	0.014	0.014	117.00	lb/MMBtu
SRU Failure	102617	0.200	0.13	0.36	6.3170	0.014	0.014	0.014	117.00	lb/MMBtu

Equipment Item	Description	Emission Factors								
	District ID#	NO_X	ROC	CO	SO_X	PM	PM_{10}	$PM_{2.5}$	GHG	Units
Fugitive Components – Gas/Light Liquid Service										
Valves - Unsafe	007070	--	0.4020	--	--	--	--	--	--	lb/day-clp
Valves - Bellows / Background ppmv	007066	--	0.0000	--	--	--	--	--	--	lb/day-clp
Valves - Category B	007068	--	0.0603	--	--	--	--	--	--	lb/day-clp
Valves - Category C	106397	--	0.0523	--	--	--	--	--	--	lb/day-clp
Valves - Category F	009712	--	0.0402	--	--	--	--	--	--	lb/day-clp
Valves - Category J	007067	--	0.0402	--	--	--	--	--	--	lb/day-clp
Flanges/Connections - Accessible/Inaccessible	007071	--	0.0050	--	--	--	--	--	--	lb/day-clp
Flanges/Connections - Unsafe	007074	--	0.0249	--	--	--	--	--	--	lb/day-clp
Flanges/Connections - Category B	007072	--	0.0037	--	--	--	--	--	--	lb/day-clp
Flanges/Connections - Category C	007073	--	0.0032	--	--	--	--	--	--	lb/day-clp
Flanges/Connections - Category F	113987	--	0.0025	--	--	--	--	--	--	lb/day-clp
Compressor Seals - To VRS	007079	--	0.0000	--	--	--	--	--	--	lb/day-clp
PSV - To Atm/Flare	007075	--	0.1393	--	--	--	--	--	--	lb/day-clp
Pump Seals - Single	007081	--	0.1862	--	--	--	--	--	--	lb/day-clp
Pump Seals - Dual/Tandem	007080	--	0.0221	--	--	--	--	--	--	lb/day-clp
Fugitive Components - Oil Service										
Valves - Accessible/Inaccessible	113979	--	0.0020	--	--	--	--	--	--	lb/day-clp
Flanges/Conns. - Accessible/Inaccessible	113970	--	0.0008	--	--	--	--	--	--	lb/day-clp
Tanks										
Methanol Tank (T-111)	102620	--	1.41	--	--	--	--	--	--	lb/1000 gal
Wastewater Tank (T-601)	103103	--	0.002	--	--	--	--	--	--	lb/ft^2 day
Wastewater Tank (T-807)	103104	--	0.003	--	--	--	--	--	--	lb/ft^2 day
Internal Combustion Engines										
FW Pump A	002359	--	--	--	--	--	--	--	--	
FW Pump B	002356	--	--	--	--	--	--	--	--	
Emergency Electrical Generator Instr Air	002357	14.061	1.12	3.03	0.184	1.00	1.00	1.00	556.6	g/bhp-hr
Emergency Backup Generator	390276	0.300	0.14	2.60	0.01	0.15	0.15	0.15	556.6	g/bhp-hr
Solvent Usage										
Cleaning/Degreasing	008662	mass balance								lbs

Table 5.3 Short-Term Emissions

Table 5.3: Hourly and Daily Emissions
ExxonMobil POPCO Gas Plant
PT-70/Reeval 8092 - R10

Equipment Item	Description		NO_X		ROC		CO		SO_X		PM		PM_{10}		$PM_{2.5}$		GHG		Federal
		District ID#	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	Enforceability
Utility Boiler																			
	Boiler B-801 A	002350	1.48	35.42	0.04	0.96	2.99	71.83	0.11	2.72	0.37	8.84	0.35	8.39	0.35	8.39	4,797.00	115,128.00	FE
	Boiler B-801 B	002351	1.48	35.42	0.04	0.96	2.99	71.83	0.11	2.72	0.37	8.84	0.35	8.39	0.35	8.39	4,797.00	115,128.00	FE
Stretford Tailgas Incineration																			
	Tailgas Emissions to B-801A or B-801B		0.20	4.86	0.01	0.13	0.41	9.85	See SRU Below		0.05	1.21	0.05	1.15	0.05	1.15	657.54	15,780.96	FE
	Emission Limits for B-801A and B-801B Combined		3.15	75.70															
Sulfur Recovery Unit – Stretford Tailgas Incineration/Stretford Oxidizer Tank																			
	Tailgas Emissions to B-801A or B-801B				0.10	2.40			5.44	130.54									FE
	Emission Limits for B-801A and B-801B Combined								5.67	135.98									
John Zink Thermal Oxidizer (ZTOF) – Planned Pilot/Purge Flaring																			
	Pilot Gas	102614	0.04	0.97	0.30	7.20	0.03	0.69	0.01	0.19	0.00	0.01	0.00	0.01	0.00	0.01	278.46	6,683.04	FE
	Purge Gas	102614	0.00	0.10	0.03	0.72	0.00	0.07	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	27.85	668.30	FE
John Zink Thermal Oxidizer (ZTOF) – Planned Continuous Flaring																			
	AG Header - Compressor Seal Leakage	102615	0.04	1.05	0.05	1.12	0.00	0.11	0.01	0.30	0.00	0.00	0.00	0.00	0.00	0.00	43.31	1,039.38	FE
	HC/AG Headers - Baseline System Leakage	102615	0.08	2.02	0.09	2.16	0.01	0.21	0.02	0.58	0.00	0.00	0.00	0.00	0.00	0.00	83.54	2,004.91	FE
John Zink Thermal Oxidizer (ZTOF) – Planned Other Flaring																			
	Startups and Maintenance	102616	180.19	4324.44	117.12	2810.89	324.33	7783.99	3.07	73.70	12.61	302.71	12.61	302.71	12.61	302.71	105,408.25	2,529,797.96	FE
	Tailgas Incineration in ZTOF	108094	1.12	8.99	0.73	5.84	2.02	16.19	See SRU		0.08	0.63	0.08	0.63	0.08	0.63	657.54	5,260.32	FE
John Zink Thermal Oxidizer (ZTOF) – Unplanned Other Flaring																			
	Miscellaneous	108095	71.40	178.50	46.41	116.03	128.52	321.30	12.12	30.29	5.00	12.50	5.00	12.50	5.00	12.50	41,769.00	104,422.50	FE
	SRU Failure	102617	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	192.90	1.54	FE

Equipment Item Description	District ID#	NO_X lb/hr	NO_X lb/day	ROC lb/hr	ROC lb/day	CO lb/hr	CO lb/day	SO_X lb/hr	SO_X lb/day	PM lb/hr	PM lb/day	PM_{10} lb/hr	PM_{10} lb/day	$PM_{2.5}$ lb/hr	$PM_{2.5}$ lb/day	GHG lb/hr	GHG lb/day	Federal Enforceability
Fugitive Components – Gas/Light Liquid Service																		
Valves - Unsafe	007070	--	--	0.54	12.86	--	--	--	--	--	--	--	--	--	--	--	--	NE
Valves - Bellows / Background ppmv	007066	--	--	0.00	0.00	--	--	--	--	--	--	--	--	--	--	--	--	NE
Valves - Category B	007068	--	--	4.79	114.87	--	--	--	--	--	--	--	--	--	--	--	--	NE
Valves - Category C	106397	--	--	0.95	22.70	--	--	--	--	--	--	--	--	--	--	--	--	NE
Valves - Category F	009712	--	--	0.45	10.81	--	--	--	--	--	--	--	--	--	--	--	--	NE
Valves - Category J	007067	--	--	1.84	44.22	--	--	--	--	--	--	--	--	--	--	--	--	NE
Flanges/Connections - Accessible/Inaccessible	007071	--	--	1.49	35.75	--	--	--	--	--	--	--	--	--	--	--	--	NE
Flanges/Connections - Unsafe	007074	--	--	0.64	15.31	--	--	--	--	--	--	--	--	--	--	--	--	NE
Flanges/Connections - Category B	007072	--	--	0.67	16.19	--	--	--	--	--	--	--	--	--	--	--	--	NE
Flanges/Connections - Category C	007073	--	--	0.25	6.00	--	--	--	--	--	--	--	--	--	--	--	--	NE
Flanges/Connections - Category F	113987	--	--	0.02	0.39	--	--	--	--	--	--	--	--	--	--	--	--	
Compressor Seals - To VRS	700079	--	--	0.00	0.00	--	--	--	--	--	--	--	--	--	--	--	--	NE
PSV - To Atm/Flare	007075	--	--	0.89	21.45	--	--	--	--	--	--	--	--	--	--	--	--	NE
Pump Seals - Single	007081	--	--	0.02	0.37	--	--	--	--	--	--	--	--	--	--	--	--	NE
Pump Seals - Dual/Tandem	007080	--	--	0.01	0.22	--	--	--	--	--	--	--	--	--	--	--	--	NE
Fugitive Components - Oil Service																		
Valves - Accessible/Inaccessible	113979	--	--	0.00	0.00	--	--	--	--	--	--	--	--	--	--	--	--	NE
Flanges/Conns. - Accessible/Inaccessible	113970	--	--	0.00	0.00	--	--	--	--	--	--	--	--	--	--	--	--	NE
Sub-Total:				**12.55**	**301.16**													**FE**
Tanks																		
Methanol Tank (T-111)	102620	--	--	14.82	14.82	--	--	--	--	--	--	--	--	--	--	--	--	A
Wastewater Tank (T-601)	103103	--	--	0.04	0.88	--	--	--	--	--	--	--	--	--	--	--	--	A
Wastewater Tank (T-807)	103104	--	--	0.01	0.21	--	--	--	--	--	--	--	--	--	--	--	--	A
Internal Combustion Engines																		
FW Pump A	002359	--	--	--	--	--	--	--	--	--	--	--	--			--	--	
FW Pump B	002356	--	--	--	--	--	--	--	--	--	--	--	--			--	--	
Emergency Electrical Generator Instr Air	002357	3.44	6.88	0.27	0.55	0.74	1.48	0.04	0.09	0.24	0.49	0.24	0.49	0.24	0.49	136.20	272.41	A
Emergency Backup Generator	390276	0.06	0.13	0.03	0.06	0.54	1.09	0.00	0.00	0.03	0.06	0.03	0.06	0.03	0.06	116.57	233.14	FE
Solvent Usage																		
Cleaning/Degreasing	008662	--	--	0.05	1.10	--	--	--	--	--	--	--	--			--	--	FE

Notes

FE = Federally Enforceable

NE = Not Enforceable

A = APCD-Only Enforceable

Table 5.4 Long-Term Emissions

Table 5.4: Quarterly and Annual Emissions
ExxonMobil POPCO Gas Plant
PT-70/Reeval 8092 - R10

Equipment Item / Description	District ID#	NO_X TPQ	NO_X TPY	ROC TPQ	ROC TPY	CO TPQ	CO TPY	SO_X TPQ	SO_X TPY	PM TPQ	PM TPY	PM_{10} TPQ	PM_{10} TPY	$PM_{2.5}$ TPQ	$PM_{2.5}$ TPY	GHG TPQ	GHG TPY	Federal Enforceability
Utility Boiler																		
Boiler B-801 A	2350	1.62	6.46	0.04	0.18	3.28	13.11	0.12	0.50	0.40	1.61	0.38	1.53	0.38	1.53	5,252.72	21,010.86	FE
Boiler B-801 B	2351	1.62	6.46	0.04	0.18	3.28	13.11	0.12	0.50	0.40	1.61	0.38	1.53	0.38	1.53	5,252.72	21,010.86	FE
Stretford Tailgas Incineration																		
Tailgas Emissions to B-801A or B-801B		0.22	0.89	0.01	0.02	0.45	1.80	See SRU Below		0.06	0.22	0.05	0.21	0.05	0.21	720.01	2,880.03	FE
Emission Limits for B-801A and B-801B Combined		3.45	13.82															
Sulfur Recovery Unit – Stretford Tailgas Incineration/Stretford Oxidizer Tank																		
Tailgas Emissions to B-801A or B-801B				0.11	0.44			5.96	23.82									FE
Emission Limits for B-801A and B-801B Combined								6.20	24.82									
John Zink Thermal Oxidizer (ZTOF) – Planned Pilot/Purge Flaring																		
Pilot Gas	102614	0.04	0.18	0.33	1.31	0.03	0.13	0.01	0.04	0.00	0.00	0.00	0.00	0.00	0.00	304.91	1,219.65	FE
Purge Gas	102614	0.00	0.02	0.03	0.13	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	30.49	121.97	FE
John Zink Thermal Oxidizer (ZTOF) – Planned Continuous Flaring																		
AG Header - Compressor Seal Leakage	102615	0.05	0.19	0.05	0.20	0.00	0.02	0.01	0.06	0.00	0.00	0.00	0.00	0.00	0.00	47.42	189.69	FE
HC/AG Headers - Baseline System Leakage	102615	0.09	0.37	0.10	0.39	0.01	0.04	0.03	0.11	0.00	0.00	0.00	0.00	0.00	0.00	91.47	365.90	FE
John Zink Thermal Oxidizer (ZTOF) – Planned Other Flaring																		
Startups and Maintenance	102616	3.87	15.50	2.52	10.07	6.97	27.89	0.07	0.26	0.27	1.08	0.27	1.08	0.27	1.08	2,266.28	9,065.11	FE
Tailgas Incineration in ZTOF	108094	0.01	0.04	0.01	0.02	0.02	0.06	See SRU		0.00	0.00	0.00	0.00	0.00	0.00	5.26	21.04	FE
John Zink Thermal Oxidizer (ZTOF) – Unplanned Other Flaring																		
Miscellaneous	108095	0.09	0.18	0.06	0.12	0.16	0.32	0.02	0.03	0.01	0.01	0.01	0.01	0.01	0.01	52.21	104.42	FE
SRU Failure	102617	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	FE

Equipment Item Description	District ID#	NO_X TPQ	NO_X TPY	ROC TPQ	ROC TPY	CO TPQ	CO TPY	SO_X TPQ	SO_X TPY	PM TPQ	PM TPY	PM_{10} TPQ	PM_{10} TPY	$PM_{2.5}$ TPQ	$PM_{2.5}$ TPY	GHG TPQ	GHG TPY	Federal Enforceability
Fugitive Components – Gas/Light Liquid Service																		
Valves - Unsafe	007070	--	--	0.59	2.35	--	--	--	--	--	--	--	--	--	--	--	--	NE
Valves - Bellows / Background ppmv	007066	--	--	0.00	0.00	--	--	--	--	--	--	--	--	--	--	--	--	NE
Valves - Category B	007068	--	--	5.24	20.96	--	--	--	--	--	--	--	--	--	--	--	--	NE
Valves - Category C	106397	--	--	1.04	4.14	--	--	--	--	--	--	--	--	--	--	--	--	NE
Valves - Category F	009712	--	--	0.49	1.97	--	--	--	--	--	--	--	--	--	--	--	--	NE
Valves - Category J	007067	--	--	2.02	8.07	--	--	--	--	--	--	--	--	--	--	--	--	NE
Flanges/Connections - Accessible/Inaccessible	007071	--	--	1.63	6.53	--	--	--	--	--	--	--	--	--	--	--	--	NE
Flanges/Connections - Unsafe	007074	--	--	0.70	2.79	--	--	--	--	--	--	--	--	--	--	--	--	NE
Flanges/Connections - Category B	007072	--	--	0.74	2.95	--	--	--	--	--	--	--	--	--	--	--	--	NE
Flanges/Connections - Category C	007073	--	--	0.27	1.10	--	--	--	--	--	--	--	--	--	--	--	--	NE
Flanges/Connections - Category F	113987	--	--	0.02	0.07	--	--	--	--	--	--	--	--	--	--	--	--	
Compressor Seals - To VRS	007079	--	--	0.00	0.00	--	--	--	--	--	--	--	--	--	--	--	--	NE
PSV - To Atm/Flare	007075	--	--	0.98	3.92	--	--	--	--	--	--	--	--	--	--	--	--	NE
Pump Seals - Single	007081	--	--	0.02	0.07	--	--	--	--	--	--	--	--	--	--	--	--	NE
Pump Seals - Dual/Tandem	007080	--	--	0.01	0.04	--	--	--	--	--	--	--	--	--	--	--	--	NE
Fugitive Components - Oil Service																		
Valves - Accessible/Inaccessible	113979	--	--	0.00	0.00	--	--	--	--	--	--	--	--	--	--	--	--	NE
Flanges/Conns. - Accessible/Inaccessible	113970	--	--	0.00	0.00	--	--	--	--	--	--	--	--	--	--	--	--	NE
Sub-Total:				**13.74**	**54.96**													**FE**
Tanks																		
Methanol Tank (T-111)	102620	--	--	0.01	0.01	--	--	--	--	--	--	--	--	--	--	--	--	A
Wastewater Tank (T-601)	103103	--	--	0.04	0.16	--	--	--	--	--	--	--	--	--	--	--	--	A
Wastewater Tank (T-807)	00103104	--	--	0.01	0.04	--	--	--	--	--	--	--	--	--	--	--	--	A
Internal Combustion Engines																		
FW Pump A	002359	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
FW Pump B	002356	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Emergency Electrical Generator Instr Air	002357	0.03	0.03	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	1.36	1.36	A
Emergency Backup Generator	390276	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	2.91	2.91	FE
Solvent Usage																		
Cleaning/Degreasing	008662	--	--	0.05	0.20	--	--	--	--	--	--	--	--	--	--	--	--	FE

Notes

FE = Federally Enforceable

NE = Not Enforceable

A = APCD-Only Enforceable

Table 5.5 Total Permitted Facility Emissions

Table 5.5: Total Permitted Facility Emissions
ExxonMobil POPCO Gas Plant
PT-70/Reeval 8092 - R10

A. Hourly

Equipment Category	NO_X	ROC	CO	SO_X	PM	PM_{10}	$PM_{2.5}$	GHG
Boiler B-801A	1.48	0.04	2.99	0.11	0.37	0.35	0.35	4,797.0
Boiler B-801B	1.48	0.04	2.99	0.11	0.37	0.35	0.35	4,797.0
Stretford Tailgas Incineration	0.20	0.01	0.41	--	0.05	0.05	0.05	657.5
SRU-Stretford Tailgas Incineration/ Stretford Oxidizer Tank	0.00	0.10	0.00	5.44	0.00	0.00	0.00	0.0
Combined B-801A/B Stack Emissions =	3.15	0.19	6.40	5.67	0.79	0.75	0.75	10,251.5
John Zink Thermal Oxidizer (ZTOF)								
Planned Pilot/Purge Flaring	0.04	0.33	0.03	0.01	0.00	0.00	0.00	306.3
Planned Continuous Flaring	0.13	0.14	0.01	0.04	0.00	0.00	0.00	126.8
Fugitive Components - Oil and Gas	--	12.55	--	--	--	--	--	--
Tanks	--	14.86	--	--	--	--	--	--
Internal Combustion Engines	3.50	0.30	1.29	0.05	0.28	0.28	0.28	252.8
Solvent Usage	--	0.05	--	--	--	--		--
Totals (lb/hr)	**6.83**	**28.41**	**7.73**	**5.76**	**1.06**	**1.02**	**1.02**	**10,937.5**

B. Daily

Equipment Category	NO_X	ROC	CO	SO_X	PM	PM_{10}	$PM_{2.5}$	GHG
Boiler B-801A	35.42	0.96	71.83	2.72	8.84	8.39	8.39	115,128.0
Boiler B-801B	35.42	0.96	71.83	2.72	8.84	8.39	8.39	115,128.0
Stretford Tailgas Incineration	4.86	0.13	9.85	0.00	1.21	1.15	1.15	15,781.0
SRU-Stretford Tailgas Incineration/ Stretford Oxidizer Tank	0.00	2.40	0.00	130.54	0.00	0.00	0.00	0.0
Combined B-801A/B Stack Emissions =	75.70	4.46	153.51	135.98	18.88	17.94	17.94	246,037.0
John Zink Thermal Oxidizer (ZTOF)								
Planned Pilot/Purge Flaring	1.07	7.92	0.75	0.26	0.01	0.01	0.01	7,351.3
Planned Continuous Flaring	3.07	3.28	0.31	0.88	0.00	0.00	0.00	3,044.3
Fugitive Components - Oil and Gas	--	301.16	--	--	--	--		--
Tanks	--	15.91	--	--	--	--	--	--
Internal Combustion Engines	7.01	0.61	2.57	0.09	0.55	0.55	0.55	505.5
Solvent Usage	--	1.10	--	--	--	--	--	--
Totals (lb/day)	**86.85**	**334.43**	**157.15**	**137.22**	**19.45**	**18.50**	**18.50**	**256,938.1**

C. Quarterly

Equipment Category	NO_X	ROC	CO	SO_X	PM	PM_{10}	$PM_{2.5}$	GHG
Boiler B-801A	1.62	0.04	3.28	0.12	0.40	0.38	0.38	5,252.7
Boiler B-801B	1.62	0.04	3.28	0.12	0.40	0.38	0.38	5,252.7
Stretford Tailgas Incineration	0.22	0.01	0.45	--	0.06	0.05	0.05	720.0
SRU-Stretford Tailgas Incineration/ Stretford Oxidizer Tank	0.00	0.11	0.00	5.96	0.00	0.00	0.00	0.0
Combined B-801A/B Stack Emissions =	3.45	0.20	7.00	6.20	0.86	0.82	0.82	11,225.4
John Zink Thermal Oxidizer (ZTOF)								
Planned Pilot/Purge Flaring	0.05	0.36	0.03	0.01	0.00	0.00	0.00	335.4
Planned Continuous Flaring	0.14	0.15	0.01	0.04	0.00	0.00	0.00	138.9
Planned Other Flaring	3.88	2.52	6.99	0.07	0.27	0.27	0.27	2,271.5
Unplanned Other Flaring	0.09	0.06	0.16	0.02	0.01	0.01	0.01	52.2
Fugitive Components - Oil and Gas	--	13.74	--	--	--	--	--	--
Tanks	--	0.06	--	--	--	--	--	--
Internal Combustion Engines	0.04	0.02	0.02	0.02	0.02	0.02	0.02	4.3
Solvent Usage	--	0.05	--	--	--	--	--	--
Totals (TPQ)	**7.66**	**17.16**	**14.23**	**6.36**	**1.16**	**1.12**	**1.12**	**14,027.8**

D. Annual

Equipment Category	NO_X	ROC	CO	SO_X	PM	PM_{10}	$PM_{2.5}$	GHG
Boiler B-801A	6.46	0.18	13.11	0.50	1.61	1.53	1.53	21,010.9
Boiler B-801B	6.46	0.18	13.11	0.50	1.61	1.53	1.53	21,010.9
Stretford Tailgas Incineration	0.89	0.02	1.80	0.00	0.22	0.21	0.21	2,880.0
SRU-Stretford Tailgas Incineration/ Stretford Oxidizer Tank	0.00	0.44	0.00	23.82	0.00	0.00	0.00	0.0
Combined B-801A/B Stack Emissions =	13.82	0.81	28.02	24.82	3.45	3.27	3.27	44,901.7
John Zink Thermal Oxidizer (ZTOF)								
Planned Pilot/Purge Flaring	0.19	1.44	0.14	0.05	0.00	0.00	0.00	1,341.6
Planned Continuous Flaring	0.56	0.60	0.06	0.16	0.00	0.00	0.00	555.6
Planned Other Flaring	15.53	10.10	27.96	0.26	1.09	1.09	1.09	9,086.2
Unplanned Other Flaring	0.18	0.12	0.32	0.03	0.01	0.01	0.01	104.4
Fugitive Components - Oil and Gas	--	54.96	--	--	--	--	--	--
Tanks	--	0.21	--	--	--	--	--	--
Internal Combustion Engines	0.04	0.02	0.02	0.02	0.02	0.02	0.02	4.3
Solvent Usage	--	0.20	--	--	--	--		--
Totals (TPY)	**30.33**	**68.46**	**56.51**	**25.34**	**4.57**	**4.39**	**4.39**	**55,993.8**

Table 5.6 Federal Potential to Emit

Table 5.6: Federal Potential to Emit
ExxonMobil POPCO Gas Plant
PT-70/Reeval 8092 - R10

A. Hourly

Equipment Category	NO_X	ROC	CO	SO_X	PM	PM_{10}	$PM_{2.5}$	GHG
Boiler B-801A	1.48	0.04	2.99	0.11	0.37	0.35	0.35	4,797.0
Boiler B-801B	1.48	0.04	2.99	0.11	0.37	0.35	0.35	4,797.0
Stretford Tailgas Incineration	0.20	0.01	0.41	--	0.05	0.05	0.05	657.5
SRU-Stretford Tailgas Incineration/ Stretford Oxidizer Tank	0.00	0.10	0.00	5.44	0.00	0.00	0.00	0.0
Combined B-801A/B Stack Emissions =	3.15	0.19	6.40	5.67	0.79	0.75	0.75	10,251.5
John Zink Thermal Oxidizer (ZTOF)								
Planned Pilot/Purge Flaring	0.04	0.33	0.03	0.01	0.00	0.00	0.00	306.3
Planned Continuous Flaring	0.13	0.14	0.01	0.04	0.00	0.00	0.00	126.8
Fugitive Components - Gas	--	--	--	--	--	--	--	--
Tanks	--	14.86	--	--	--	--	--	--
Internal Combustion Engines	3.50	0.30	1.29	0.05	0.28	0.28	0.28	252.8
Solvent Usage	--	0.05	--	--	--	--	--	--
Totals (lb/hr)	**6.83**	**15.87**	**7.73**	**5.76**	**1.06**	**1.02**	**1.02**	**10,937.5**

B. Daily

Equipment Category	NO_X	ROC	CO	SO_X	PM	PM_{10}	$PM_{2.5}$	GHG
Boiler B-801A	35.42	0.96	71.83	2.72	8.84	8.39	8.39	115,128.0
Boiler B-801B	35.42	0.96	71.83	2.72	8.84	8.39	8.39	115,128.0
Stretford Tailgas Incineration	4.86	0.13	9.85	0.00	1.21	1.15	1.15	15,781.0
SRU-Stretford Tailgas Incineration/ Stretford Oxidizer Tank	0.00	2.40	0.00	130.54	0.00	0.00	0.00	0.0
Combined B-801A/B Stack Emissions =	75.70	4.46	153.51	135.98	18.88	17.94	17.94	246,037.0
John Zink Thermal Oxidizer (ZTOF)								
Planned Pilot/Purge Flaring	1.07	7.92	0.75	0.26	0.01	0.01	0.01	7,351.3
Planned Continuous Flaring	3.07	3.28	0.31	0.88	0.00	0.00	0.00	3,044.3
Fugitive Components - Gas	--	--	--	--	--	--	--	--
Tanks	--	15.91	--	--	--	--	--	--
Internal Combustion Engines	7.01	0.61	2.57	0.09	0.55	0.55	0.55	505.5
Solvent Usage	--	1.10	--	--	--	--		--
Totals (lb/day)	**86.85**	**33.27**	**157.15**	**137.22**	**19.45**	**18.50**	**18.50**	**256,938.1**

C. Quarterly

Equipment Category	NO_X	ROC	CO	SO_X	PM	PM_{10}	$PM_{2.5}$	GHG
Boiler B-801A	1.62	0.04	3.28	0.12	0.40	0.38	0.38	5,252.7
Boiler B-801B	1.62	0.04	3.28	0.12	0.40	0.38	0.38	5,252.7
Stretford Tailgas Incineration	0.22	0.01	0.45	--	0.06	0.05	0.05	720.0
SRU-Stretford Tailgas Incineration/ Stretford Oxidizer Tank	0.00	0.11	0.00	5.96	0.00	0.00	0.00	0.0
Combined B-801A/B Stack Emissions =	3.45	0.20	7.00	6.20	0.86	0.82	0.82	11,225.4
John Zink Thermal Oxidizer (ZTOF)								
Planned Pilot/Purge Flaring	0.05	0.36	0.03	0.01	0.00	0.00	0.00	335.4
Planned Continuous Flaring	0.14	0.15	0.01	0.04	0.00	0.00	0.00	138.9
Planned Other Flaring	3.88	2.52	6.99	0.07	0.27	0.27	0.27	2,271.5
Unplanned Other Flaring	0.09	0.06	0.16	0.02	0.01	0.01	0.01	52.2
Fugitive Components - Gas	--	--	--	--	--	--		--
Tanks	--	0.06	--	--	--	--		--
Internal Combustion Engines	0.04	0.02	0.02	0.02	0.02	0.02	0.02	4.3
Solvent Usage	--	0.05	--	--	--	--		--
Totals (TPQ)	**7.66**	**3.42**	**14.23**	**6.36**	**1.16**	**1.12**	**1.12**	**14,027.8**

D. Annual

Equipment Category	NO_X	ROC	CO	SO_X	PM	PM_{10}	$PM_{2.5}$	GHG
Boiler B-801A	6.46	0.18	13.11	0.50	1.61	1.53	1.53	21,010.9
Boiler B-801B	6.46	0.18	13.11	0.50	1.61	1.53	1.53	21,010.9
Stretford Tailgas Incineration	0.89	0.02	1.80	0.00	0.22	0.21	0.21	2,880.0
SRU-Stretford Tailgas Incineration/ Stretford Oxidizer Tank	0.00	0.44	0.00	23.82	0.00	0.00	0.00	0.0
Combined B-801A/B Stack Emissions =	13.82	0.81	28.02	24.82	3.45	3.27	3.27	44,901.7
John Zink Thermal Oxidizer (ZTOF)								
Planned Pilot/Purge Flaring	0.19	1.44	0.14	0.05	0.00	0.00	0.00	1,341.6
Planned Continuous Flaring	0.56	0.60	0.06	0.16	0.00	0.00	0.00	555.6
Planned Other Flaring	15.53	10.10	27.96	0.26	1.09	1.09	1.09	9,086.2
Unplanned Other Flaring	0.18	0.12	0.32	0.03	0.01	0.01	0.01	104.4
Fugitive Components - Gas	--	--	--	--	--	--	--	--
Tanks	--	0.21	--	--	--	--	--	--
Internal Combustion Engines	0.04	0.02	0.02	0.02	0.02	0.02	0.02	4.3
Solvent Usage	--	0.20	--	--	--	--	--	--
Totals (TPY)	**30.33**	**13.50**	**56.51**	**25.34**	**4.57**	**4.39**	**4.39**	**55,993.8**

Table 5.7-1 HAP Emissions Factors

Table 5.7-1
ExxonMobil POPCO
Equipment Hazardous Air Pollutant Factors

Emission Factors

Equipment Category	Description	Dev No	Hexane	Benzene	Toluene	Xylene	iso-Octane [1]	Formaldehyde	PAHS (not incl. naphthalene)	Naphthalene	Acetaldehyde	Acrolein	1,3-Butadiene	Chlorobenzene	Ethylbenzene	Hydrogen Chloride	Methanol	Arsenic	Beryllium	Cadmium	Total Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	Units	References
Utility Boiler																													
	Boiler B-801 A	002350	4.60E-03	5.80E-03	2.65E-02	1.97E-02	--	1.23E-02	1.00E-04	3.00E-04	3.10E-03	2.70E-03	--	--	6.90E-03	--	--	2.00E-04	1.20E-05	1.10E-03	1.40E-03	8.40E-05	--	3.80E-04	2.60E-04	2.10E-03	2.40E-05	lb/MMcf	A
	Boiler B-801 B	002351	4.60E-03	5.80E-03	2.65E-02	1.97E-02	--	1.23E-02	1.00E-04	3.00E-04	3.10E-03	2.70E-03	--	--	6.90E-03	--	--	2.00E-04	1.20E-05	1.10E-03	1.40E-03	8.40E-05	--	3.80E-04	2.60E-04	2.10E-03	2.40E-05	lb/MMcf	A
Stretford Tailgas Incineration																													
	Tailgas Emissions to B-801A or B-801B		4.60E-03	5.80E-03	2.65E-02	1.97E-02	--	1.23E-02	1.00E-04	3.00E-04	3.10E-03	2.70E-03	--	--	6.90E-03	--	--	2.00E-04	1.20E-05	1.10E-03	1.40E-03	8.40E-05	--	3.80E-04	2.60E-04	2.10E-03	2.40E-05	lb/MMcf	A
Sulfur Recovery Unit – Stretford Tailgas Incineration/Stretford Oxidizer Tank																													
	Tailgas Emissions to B-801A or B-801B		4.60E-03	5.80E-03	2.65E-02	1.97E-02	--	1.23E-02	1.00E-04	3.00E-04	3.10E-03	2.70E-03	--	--	6.90E-03	--	--	2.00E-04	1.20E-05	1.10E-03	1.40E-03	8.40E-05	--	3.80E-04	2.60E-04	2.10E-03	2.40E-05	lb/MMcf	A
John Zink Thermal Oxidizer (ZTOF) – Planned Pilot/Purge Flaring																													
	Pilot Gas	102614	2.90E-02	1.59E-01	5.80E-02	2.90E-02	--	1.17E+00	3.00E-03	1.10E-02	4.30E-02	1.00E-02	--	--	1.44E+00	--	--	2.00E-04	1.20E-05	1.10E-03	1.40E-03	8.40E-05	--	3.80E-04	2.60E-04	2.10E-03	2.40E-05	lb/MMcf	B
	Purge Gas	102614	2.90E-02	1.59E-01	5.80E-02	2.90E-02	--	1.17E+00	3.00E-03	1.10E-02	4.30E-02	1.00E-02	--	--	1.44E+00	--	--	2.00E-04	1.20E-05	1.10E-03	1.40E-03	8.40E-05	--	3.80E-04	2.60E-04	2.10E-03	2.40E-05	lb/MMcf	B
John Zink Thermal Oxidizer (ZTOF) – Planned Continuous Flaring																													
	AG Header - Compressor Seal Leakage	102615	2.90E-02	1.59E-01	5.80E-02	2.90E-02	--	1.17E+00	3.00E-03	1.10E-02	4.30E-02	1.00E-02	--	--	1.44E+00	--	--	2.00E-04	1.20E-05	1.10E-03	1.40E-03	8.40E-05	--	3.80E-04	2.60E-04	2.10E-03	2.40E-05	lb/MMcf	B
	HC/AG Headers - Baseline System Leakage	102615	2.90E-02	1.59E-01	5.80E-02	2.90E-02	--	1.17E+00	3.00E-03	1.10E-02	4.30E-02	1.00E-02	--	--	1.44E+00	--	--	2.00E-04	1.20E-05	1.10E-03	1.40E-03	8.40E-05	--	3.80E-04	2.60E-04	2.10E-03	2.40E-05	lb/MMcf	B
John Zink Thermal Oxidizer (ZTOF) – Planned Other Flaring																													
	Startups and Maintenance	102616	2.90E-02	1.59E-01	5.80E-02	2.90E-02	--	1.17E+00	3.00E-03	1.10E-02	4.30E-02	1.00E-02	--	--	1.44E+00	--	--	2.00E-04	1.20E-05	1.10E-03	1.40E-03	8.40E-05	--	3.80E-04	2.60E-04	2.10E-03	2.40E-05	lb/MMcf	B
	Tailgas Incineration in ZTOF	108094	2.90E-02	1.59E-01	5.80E-02	2.90E-02	--	1.17E+00	3.00E-03	1.10E-02	4.30E-02	1.00E-02	--	--	1.44E+00	--	--	2.00E-04	1.20E-05	1.10E-03	1.40E-03	8.40E-05	--	3.80E-04	2.60E-04	2.10E-03	2.40E-05	lb/MMcf	B
John Zink Thermal Oxidizer (ZTOF) – Unplanned Other Flaring																													
	Miscellaneous	108095	2.90E-02	1.59E-01	5.80E-02	2.90E-02	--	1.17E+00	3.00E-03	1.10E-02	4.30E-02	1.00E-02	--	--	1.44E+00	--	--	2.00E-04	1.20E-05	1.10E-03	1.40E-03	8.40E-05	--	3.80E-04	2.60E-04	2.10E-03	2.40E-05	lb/MMcf	B
	SRU Failure	102617	2.90E-02	1.59E-01	5.80E-02	2.90E-02	--	1.17E+00	3.00E-03	1.10E-02	4.30E-02	1.00E-02	--	--	1.44E+00	--	--	2.00E-04	1.20E-05	1.10E-03	1.40E-03	8.40E-05	--	3.80E-04	2.60E-04	2.10E-03	2.40E-05	lb/MMcf	B
Fugitive Components – Gas/Light Liquid Service																													
	Valves - Unsafe	007070	1.37E-01	2.63E-03	--	--	1.21E-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	lb/lb-ROC[2]	C
	Valves - Bellows / Background ppmv	007066	1.37E-01	2.63E-03	--	--	1.21E-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	lb/lb-ROC[2]	C
	Valves - Category B	007068	1.37E-01	2.63E-03	--	--	1.21E-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	lb/lb-ROC[2]	C
	Valves - Category C	106397	1.37E-01	2.63E-03	--	--	1.21E-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	lb/lb-ROC[2]	C
	Valves - Category F	009712	1.37E-01	2.63E-03	--	--	1.21E-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	lb/lb-ROC[2]	C
	Valves - Category J	007067	1.37E-01	2.63E-03	--	--	1.21E-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	lb/lb-ROC[2]	C
	Flanges/Connections - Accessible/Inaccessible	007071	1.21E-01	2.33E-03	--	--	1.07E-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	lb/lb-ROC[3]	C
	Flanges/Connections - Unsafe	007074	1.21E-01	2.33E-03	--	--	1.07E-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	lb/lb-ROC[3]	C
	Flanges/Connections - Category B	007072	1.21E-01	2.33E-03	--	--	1.07E-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	lb/lb-ROC[3]	C
	Flanges/Connections - Category C	007073	1.21E-01	2.33E-03	--	--	1.07E-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	lb/lb-ROC[3]	C
	Flanges/Connections - Category F	133978	1.21E-01	2.33E-03	--	--	1.07E-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	lb/lb-ROC[3]	C
	Compressor Seals - To VRS	007079	2.60E-01	5.00E-03	--	--	2.30E-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	lb/lb-ROC[4]	C
	PSV - To Atm/Flare	007075	7.43E-01	1.43E-02	--	--	6.57E-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	lb/lb-ROC[5]	C
	Pump Seals - Single	007081	6.58E-02	1.27E-03	--	--	5.82E-02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	lb/lb-ROC[6]	C
	Pump Seals - Dual/Tandem	007080	6.58E-02	1.27E-03	--	--	5.82E-02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	lb/lb-ROC[6]	C
Fugitive Components – Oil Service																													
	Valves - Accessible/Inaccessible	113979	3.00E-01	3.03E-03	--	--	2.64E-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	lb/lb-ROC[7]	D
	Flanges/Connections - Accessible/Inaccessible	113970	3.00E-01	3.03E-03	--	--	2.64E-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	lb/lb-ROC[7]	D
Tanks																													
	Methanol Tank (T-111)	102620	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.41E+00	--	--	--	--	--	--	--	--	--	--	lb/1000gal	H
	Wastewater Tank (T-601)	103103	5.28E-02	2.64E-02	1.65E-02	--	4.95E-03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	lb/lb-ROC[8]	E
	Wastewater Tank (T-807)	103104	5.28E-02	2.64E-02	1.65E-02	--	4.95E-03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	lb/lb-ROC[8]	E
Internal Combustion Engines																													
	FW Pump A	002359	2.69E-02	1.86E-01	1.05E-01	4.24E-02	--	1.73E+00	3.62E-02	1.97E-02	7.83E-01	3.39E-02	2.17E-01	2.00E-04	1.09E-02	1.86E-01	--	1.60E-03	--	1.50E-03	6.00E-04	--	8.30E-03	3.10E-03	2.00E-03	3.90E-03	2.20E-03	lb/1000 gal	F
	FW Pump B	002356	2.69E-02	1.86E-01	1.05E-01	4.24E-02	--	1.73E+00	3.62E-02	1.97E-02	7.83E-01	3.39E-02	2.17E-01	2.00E-04	1.09E-02	1.86E-01	--	1.60E-03	--	1.50E-03	6.00E-04	--	8.30E-03	3.10E-03	2.00E-03	3.90E-03	2.20E-03	lb/1000 gal	F
	Emergency Electrical Generator	002358	2.69E-02	1.86E-01	1.05E-01	4.24E-02	--	1.73E+00	3.62E-02	1.97E-02	7.83E-01	3.39E-02	2.17E-01	2.00E-04	1.09E-02	1.86E-01	--	1.60E-03	--	1.50E-03	6.00E-04	--	8.30E-03	3.10E-03	2.00E-03	3.90E-03	2.20E-03	lb/1000 gal	F
	Emergency Electrical Generator Instr Air	002357	2.69E-02	1.86E-01	1.05E-01	4.24E-02	--	1.73E+00	3.62E-02	1.97E-02	7.83E-01	3.39E-02	2.17E-01	2.00E-04	1.09E-02	1.86E-01	--	1.60E-03	--	1.50E-03	6.00E-04	--	8.30E-03	3.10E-03	2.00E-03	3.90E-03	2.20E-03	lb/1000 gal	F
	Emergency Backup Generator	390276	2.69E-02	1.86E-01	1.05E-01	4.24E-02	--	1.73E+00	3.62E-02	1.97E-02	7.83E-01	3.39E-02	2.17E-01	2.00E-04	1.09E-02	1.86E-01	--	1.60E-03	--	1.50E-03	6.00E-04	--	8.30E-03	3.10E-03	2.00E-03	3.90E-03	2.20E-03	lb/1000 gal	F
Solvent Usage																													
	Cleaning/Degreasing	008662	--	5.00E-02	5.00E-02	5.00E-02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	lb/lb-ROC	G

References:
A1 - VCAPCD AB 2588 Combustion Emission Factors (2001) - Natural Gas Fired External Combustion Equipment (10-100 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 (Flares)
B2 - USEPA, AP-42 Table 1.4-4 Emission Factors for Metals from Natural Gas Combustion
C - CARB Speciation Manual Second Edition (1991), Profile Number 757 - Oil & Gas Production Fugitives - Gas Service
D - CARB Speciation Manual Second Edition (1991) Profile Number 756 - Oil & Gas Production Fugitives - Liquid Service
E - CARB Speciation Manual Second Edition (1991) Profile Number 532 - Oil & Gas Extraction - Well Heads & Cellars/Oil & Water Separators
F - VCAPCD AB 2588 Combustion Emission Factors (2001) - Diesel Combustion Factors (internal combustion)
G - APCD: Solvents assumed to contain 5% benzene, 5% toluene, 5% xylene
H - APCD: 100% of ROC is methanol and the emissions factor is the same as for the criteria pollutant emissions

Notes:
1. The weight fraction for iso-Octane (i.e., 2,2,4-Trimethylpentane) is based on the conservative assumption that all isomers of octane are iso-Octane.
2. The ROC to TOC ratio for gas service valves is 0.380, from Table 2, Fugitive Emission Factors for Oil and Gas Facilities, of the District's Policy and Procedure 6100.061.2016 (https://www.ourair.org/wp-content/uploads/6100-061-1.pdf).
3. The ROC to TOC ratio for gas service connections is 0.430, from Table 2, Fugitive Emission Factors for Oil and Gas Facilities, of the District's Policy and Procedure 6100.061.2016 (https://www.ourair.org/wp-content/uploads/6100-061-1.pdf).
4. The ROC to TOC ratio for gas service compressor seals is 0.20, from Table 2, Fugitive Emission Factors for Oil and Gas Facilities, of the District's Policy and Procedure 6100.061.2016 (https://www.ourair.org/wp-content/uploads/6100-061-1.pdf).
5. The ROC to TOC ratio for gas service pressure relief systems is 0.07, from Table 2, Fugitive Emission Factors for Oil and Gas Facilities, of the District's Policy and Procedure 6100.061.2016 (https://www.ourair.org/wp-content/uploads/6100-061-1.pdf).
6. The ROC to TOC ratio for gas service pump seals is 0.79, from Table 2, Fugitive Emission Factors for Oil and Gas Facilities, of the District's Policy and Procedure 6100.061.2016 (https://www.ourair.org/wp-content/uploads/6100-061-1.pdf).
7. The ROC to TOC ratio for oil services is 0.33, from Table 2, Fugitive Emission Factors for Oil and Gas Facilities, of the District's Policy and Procedure 6100.061.2016 (https://www.ourair.org/wp-content/uploads/6100-061-1.pdf).
8. The ROC to TOG ratio for these emission factors is 0.606, from Profile Number 532 of CARB's Speciation Manual Second Edition (1991).

Table 5.7-2 HAP Annual Emissions

Table 5.7-2
ExxonMobil POPCO
Annual Hazardous Air Pollution Emissions (TPY)

Equipment Category	Description	Dev No	Hexane	Benzene	Toluene	Xylene	Iso-Octane	Formaldehyde	PAHs (not incl. naphthalene)	Naphthalene	Acetaldehyde	Acrolein	1,3-Butadiene	Chlorobenzene	Ethylbenzene	Hydrogen Chloride	Methanol	Arsenic	Beryllium	Cadmium	Total Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium
Utility Boiler																											
	Boiler B-801 A	002350	5.63E-04	7.10E-04	3.24E-03	2.41E-03	--	1.51E-03	1.22E-05	3.67E-05	3.79E-04	3.31E-04	--	--	8.45E-04	--	--	2.45E-05	1.47E-06	1.35E-04	1.71E-04	1.03E-05	--	4.65E-05	3.18E-05	2.57E-04	2.94E-06
	Boiler B-801 B	002351	5.63E-04	7.10E-04	3.24E-03	2.41E-03	--	1.51E-03	1.22E-05	3.67E-05	3.79E-04	3.31E-04	--	--	8.45E-04	--	--	2.45E-05	1.47E-06	1.35E-04	1.71E-04	1.03E-05	--	4.65E-05	3.18E-05	2.57E-04	2.94E-06
Stretford Tailgas Incineration																											
	Tailgas Emissions to B-801A or B-801B		3.66E-03	4.61E-03	2.11E-02	1.57E-02	--	9.78E-03	7.95E-05	2.39E-04	2.46E-03	2.15E-03	--	--	5.49E-03	--	--	1.59E-04	9.54E-06	8.75E-04	1.11E-03	6.68E-05	--	3.02E-04	2.07E-04	1.67E-03	1.91E-05
Sulfur Recovery Unit – Stretford Tailgas Incineration/Stretford Oxidizer Tank																											
	Tailgas Emissions to B-801A or B-801B		3.66E-03	4.61E-03	2.11E-02	1.57E-02	--	9.78E-03	7.95E-05	2.39E-04	2.46E-03	2.15E-03	--	--	5.49E-03	--	--	1.59E-04	9.54E-06	8.75E-04	1.11E-03	6.68E-05	--	3.02E-04	2.07E-04	1.67E-03	1.91E-05
John Zink Thermal Oxidizer (ZTOF) – Planned Pilot/Purge Flaring																											
	Pilot Gas	102614	2.54E-04	1.39E-03	5.08E-04	2.54E-04	--	1.02E-02	2.63E-05	9.64E-05	3.77E-04	8.76E-05	--	--	1.26E-02	--	--	1.75E-06	1.05E-07	9.64E-06	1.23E-05	7.36E-07	--	3.33E-06	2.28E-06	1.84E-05	2.10E-07
	Purge Gas	102614	2.54E-05	1.39E-04	5.08E-05	2.54E-05	--	1.02E-03	2.63E-06	9.64E-06	3.77E-05	8.76E-06	--	--	1.26E-03	--	--	1.75E-07	1.05E-08	9.64E-07	1.23E-06	7.36E-08	--	3.33E-07	2.28E-07	1.84E-06	2.10E-08
John Zink Thermal Oxidizer (ZTOF) – Planned Continuous Flaring																											
	AG Header - Compressor Seal Leakage	102615	3.95E-05	2.17E-04	7.90E-05	3.95E-05	--	1.59E-03	4.09E-06	1.50E-05	5.86E-05	1.36E-05	--	--	1.97E-03	--	--	2.72E-07	1.63E-08	1.50E-06	1.91E-06	1.14E-07	--	5.18E-07	3.54E-07	2.86E-06	3.27E-08
	HC/AG Headers - Baseline System Leakage	102615	7.62E-05	4.18E-04	1.52E-04	7.62E-05	--	3.07E-03	7.88E-06	2.89E-05	1.13E-04	2.63E-05	--	--	3.79E-03	--	--	5.26E-07	3.15E-08	2.89E-06	3.68E-06	2.21E-07	--	9.99E-07	6.83E-07	5.52E-06	6.31E-08
John Zink Thermal Oxidizer (ZTOF) – Planned Other Flaring																											
	Startups and Maintenance	102616	1.89E-03	1.04E-02	3.78E-03	1.89E-03	--	7.61E-02	1.95E-04	7.16E-04	2.80E-03	6.51E-04	--	--	9.40E-02	--	--	1.30E-05	7.81E-07	7.16E-05	9.12E-05	5.47E-06	--	2.47E-05	1.69E-05	1.37E-04	1.56E-06
	Tailgas Incineration in ZTOF	108094	1.00E-05	5.51E-05	2.01E-05	1.00E-05	--	4.05E-04	1.04E-06	3.81E-06	1.49E-05	3.46E-06	--	--	5.00E-04	--	--	6.93E-08	4.16E-09	3.81E-07	4.85E-07	2.91E-08	-- --	1.32E-07	9.00E-08	7.27E-07	8.31E-09
John Zink Thermal Oxidizer (ZTOF) – Unplanned Other Flaring																											
	Miscellaneous	108095	2.18E-05	1.19E-04	4.35E-05	2.18E-05	--	8.77E-04	2.25E-06	8.25E-06	3.23E-05	7.50E-06	--	--	1.08E-03	--	--	1.50E-07	9.00E-09	8.25E-07	1.05E-06	6.30E-08	--	2.85E-07	1.95E-07	1.58E-06	1.80E-08
	SRU Failure	102617	1.72E-10	9.41E-10	3.43E-10	1.72E-10	--	6.92E-09	1.78E-11	6.51E-11	2.55E-10	5.92E-11	--	--	8.55E-09	--	--	1.18E-12	7.10E-14	6.51E-12	8.29E-12	4.97E-13	--	2.25E-12	1.54E-12	1.24E-11	1.42E-13
Fugitive Components – Gas/Light Liquid Service																											
	Valves - Unsafe	007070	3.21E-01	6.18E-03	--	--	2.84E-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Valves - Bellows / Background ppmv	007066	0.00E+00	0.00E+00	--	--	0.00E+00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Valves - Category B	007068	2.87E+00	5.52E-02	--	--	2.54E+00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Valves - Category C	106397	5.67E-01	1.09E-02	--	--	5.01E-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Valves - Category F	009712	2.70E-01	5.19E-03	--	--	2.39E-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Valves - Category J	007067	1.10E+00	2.12E-02	--	--	9.77E-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Flanges/Connections - Accessible/Inaccessible	007071	7.89E-01	1.52E-02	--	--	6.98E-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Flanges/Connections - Unsafe	007074	3.38E-01	6.50E-03	--	--	2.99E-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Flanges/Connections - Category B	007072	3.57E-01	6.87E-03	--	--	3.16E-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Flanges/Connections - Category C	007073	1.32E-01	2.55E-03	--	--	1.17E-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Flanges/Connections - Category F	133978	8.59E-03	1.65E-04	--	--	7.60E-03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Compressor Seals - To VRS	007079	0.00E+00	0.00E+00	--	--	0.00E+00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	PSV - To Atm/Flare	007075	2.91E+00	5.59E-02	--	--	2.57E+00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Pump Seals - Single	007081	4.47E-03	8.60E-05	--	--	3.96E-03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Pump Seals - Dual/Tandem	007080	2.65E-03	5.11E-05	--	--	2.35E-03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fugitive Components – Oil Service																											
	Valves - Accessible/Inaccessible	113979	0.00E+00	0.00E+00	--	--	0.00E+00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Flanges/Connections - Accessible/Inaccessible	113970	0.00E+00	0.00E+00	--	--	0.00E+00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tanks																											
	Methanol Tank (T-111)	102620	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7.41E-03	--	--	--	--	--	--	--	--	--	--
	Wastewater Tank (T-601)	103103	8.51E-03	4.26E-03	2.66E-03	--	7.98E-04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Wastewater Tank (T-807)	103104	2.04E-03	1.02E-03	6.39E-04	--	1.92E-04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Internal Combustion Engines																											
	FW Pump A[2]	002359	9.52E-06	6.60E-05	3.73E-05	1.50E-05	--	6.11E-04	1.28E-05	6.98E-06	2.77E-04	1.20E-05	7.70E-05	7.08E-08	3.86E-06	6.60E-05	--	5.67E-07	--	5.31E-07	2.12E-07	--	2.94E-06	1.10E-06	7.08E-07	1.38E-06	7.79E-07
	FW Pump B[2]	002356	9.52E-06	6.60E-05	3.73E-05	1.50E-05	--	6.11E-04	1.28E-05	6.98E-06	2.77E-04	1.20E-05	7.70E-05	7.08E-08	3.86E-06	6.60E-05	--	5.67E-07	--	5.31E-07	2.12E-07	--	2.94E-06	1.10E-06	7.08E-07	1.38E-06	7.79E-07
	Emergency Electrical Generator	002358	7.86E-07	5.44E-06	3.08E-06	1.24E-06	--	5.04E-05	1.06E-06	5.76E-07	2.29E-05	9.91E-07	6.35E-06	5.85E-09	3.19E-07	5.44E-06	--	4.68E-08	--	4.38E-08	1.75E-08	--	2.43E-07	9.06E-08	5.85E-08	1.14E-07	6.43E-08
	Emergency Electrical Generator Instr Air	002357	1.68E-06	1.16E-05	6.58E-06	2.65E-06	--	1.08E-04	2.26E-06	1.23E-06	4.89E-05	2.11E-06	1.36E-05	1.25E-08	6.80E-07	1.16E-05	--	9.98E-08	--	9.36E-08	3.74E-08	--	5.18E-07	1.93E-07	1.25E-07	2.43E-07	1.37E-07
	Emergency Backup Generator	390276	3.59E-06	2.49E-05	1.41E-05	5.66E-06	--	2.30E-04	4.83E-06	2.63E-06	1.05E-04	4.53E-06	2.90E-05	2.67E-08	1.45E-06	2.49E-05	--	2.14E-07	--	2.00E-07	8.01E-08	--	1.11E-06	4.14E-07	2.67E-07	5.21E-07	2.94E-07
Solvent Usage																											
	Cleaning/Degreasing	008662	--	1.00E-02	1.00E-02	1.00E-02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		Total HAPs (TPY):	**9.69E+00**	**2.25E-01**	**6.67E-02**	**4.85E-02**	**8.56E+00**	**1.18E-01**	**4.57E-04**	**1.45E-03**	**9.85E-03**	**5.78E-03**	**2.03E-04**	**1.87E-07**	**1.28E-01**	**1.74E-04**	**7.41E-03**	**3.84E-04**	**2.30E-05**	**2.11E-03**	**2.68E-03**	**1.61E-04**	**7.75E-06**	**7.31E-04**	**5.00E-04**	**4.02E-03**	**4.80E-05**

Notes:
1. The higher heating values of 30.96 BTU/scf for the tail gas incineration, 519.33 BTU/scf for the tailgas incineration in ZTOF, and 1176 BTU/scf for the Sulfinol TEG Reboiler are based on Exxon's 2013 ATEIR.
2. The 30 hr/yr assumption is based on PTO 11598 and NFPA limits.

Table 5.7-3 Stationary Source Hazardous Air Pollution Emissions (TPY)

Table 5.7-3
ExxonMobil SYU Project
Stationary Source Hazardous Air Pollutant Emissions (TPY)

Facility	Permit #	Hexane	Benzene	Toluene	Xylene	Iso-Octane	Formaldehyde	PAHs (not incl. napthalene)	Naphthalene	Acetaldehyde	Acrolein	1,3-Butadiene	Chlorobenzene	Ethylbenzene	Hydrogen Chloride
08018 - Platform Harmony	**PTO 9101-R6**	6.46E+00	3.46E-01	1.69E-01	2.33E-01	5.68E+00	8.11E-01	1.89E-02	1.22E-02	3.65E-01	1.88E-02	9.37E-02	1.46E-04	4.45E-02	1.36E-01
08019 - Platform Heritage	**PTO 9102-R6**	6.82E+00	3.51E-01	1.68E-01	2.33E-01	6.00E+00	8.04E-01	1.88E-02	1.21E-02	3.62E-01	1.87E-02	9.28E-02	1.45E-04	4.45E-02	1.35E-01
08009 - Platform Hondo	**PTO 9100-R6**	8.57E+00	4.62E-01	2.55E-01	3.25E-01	7.56E+00	7.60E-01	1.67E-02	1.03E-02	3.36E-01	1.62E-02	8.85E-02	1.16E-04	5.08E-02	1.08E-01
01482 - Las Flores Canyon	**PTO 5651-R6**	8.12E+00	5.07E-01	7.58E-01	4.25E-01	6.77E+00	2.96E+00	4.32E-03	6.23E-03	1.72E-01	2.81E-02	2.09E-03	7.79E-06	1.36E-01	7.26E-03
03170 - POPCO	**PTO 8092-R9**	9.69E+00	2.25E-01	6.67E-02	4.85E-02	8.56E+00	1.18E-01	4.57E-04	1.45E-03	9.85E-03	5.78E-03	2.03E-04	1.87E-07	1.28E-01	1.74E-04
Total Stationary Source - By Pollutant		**3.97E+01**	**1.89E+00**	**1.42E+00**	**1.26E+00**	**3.46E+01**	**5.46E+00**	**5.91E-02**	**4.24E-02**	**1.24E+00**	**8.76E-02**	**2.77E-01**	**4.15E-04**	**4.04E-01**	**3.87E-01**

Facility	Methanol	Arsenic	Beryllium	Cadmium	Total Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	Total - All H
08018 - Platform Harmony	0.00E+00	1.20E-03	1.66E-06	1.25E-03	6.32E-04	1.16E-05	6.06E-03	2.32E-03	1.50E-03	3.14E-03	1.61E-03	1.44E+01
08019 - Platform Heritage	0.00E+00	1.19E-03	1.66E-06	1.24E-03	6.29E-04	1.16E-05	6.02E-03	2.30E-03	1.49E-03	3.12E-03	1.60E-03	1.51E+01
08009 - Platform Hondo	0.00E+00	9.36E-04	3.70E-07	9.05E-04	3.92E-04	2.59E-06	4.82E-03	1.81E-03	1.17E-03	2.33E-03	1.28E-03	1.86E+01
01482 - Las Flores Canyon	0.00E+00	3.06E-04	1.46E-05	1.40E-03	1.73E-03	1.02E-04	3.23E-04	5.84E-04	3.95E-04	2.71E-03	1.15E-04	1.99E+01
03170 - POPCO	7.41E-03	3.84E-04	2.30E-05	2.11E-03	2.68E-03	1.61E-04	7.75E-06	7.31E-04	5.00E-04	4.02E-03	4.80E-05	1.89E+01
Total Stationary Source - By Pollutant	**7.41E-03**	**4.01E-03**	**4.13E-05**	**6.90E-03**	**6.06E-03**	**2.89E-04**	**1.72E-02**	**7.75E-03**	**5.05E-03**	**1.53E-02**	**4.65E-03**	**8.68E+01**

Notes:

1. These are estimates only, and are not intended to represent emission limits.
2. Based on CAAA, Section 112 (n) (4) stipulations, 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.

Table 5.8 Estimated Permit Exempt Emissions

Table 5.8
POPCO Gas Plant Part70 / PTO 8092-R10
Estimated Permit Exempt Emissions
Tons/Year

A. Annual

ID#	Equipment Category	NO_X	ROC	CO	SO_X	PM	PM_{10}	$PM_{2.5}$
	Crane (200 ton) Hydraulic	0.08	0.01	0.02	0.01	0.01	0.01	0.01
	CAT 416 C Backhoe	0.07	0.00	0.01	0.01	0.00	0.00	0.00
	Crane (25 ton)	0.03	0.00	0.01	0.00	0.00	0.00	0.00
103958	Crane (300 ton)	0.07	0.00	0.02	0.01	0.01	0.01	0.01
	Crane (35 ton)	0.04	0.00	0.01	0.00	0.00	0.00	0.00
102006	Crane (75 ton)	0.26	0.02	0.06	0.03	0.02	0.02	0.02
	Crane (8 ton)	0.01	0.00	0.00	0.00	0.00	0.00	0.00
	Manlift - 60 ft	0.02	0.00	0.01	0.00	0.00	0.00	0.00
	Manlift - 65 ft	0.02	0.00	0.01	0.00	0.00	0.00	0.00
	#1 Light Tower	0.01	0.00	0.00	0.00	0.00	0.00	0.00
	#2 Light Tower	0.01	0.00	0.00	0.00	0.00	0.00	0.00
	#3 Light Tower	0.01	0.00	0.00	0.00	0.00	0.00	0.00
	#4 Light Tower	0.01	0.00	0.00	0.00	0.00	0.00	0.00
	Welder - Lincoln Portable	0.02	0.00	0.00	0.00	0.00	0.00	0.00
	Welder - Lincoln Portable	0.01	0.00	0.00	0.00	0.00	0.00	0.00
	Air Compressor	0.26	0.02	0.06	0.03	0.02	0.02	0.02
	Dust Collector	0.01	0.00	0.00	0.00	0.00	0.00	0.00
	Dust Collector	0.02	0.00	0.00	0.00	0.00	0.00	0.00
	Water Blaster (Hydro Press)	0.05	0.00	0.01	0.01	0.00	0.00	0.00
101589	Pump	0.02	0.00	0.00	0.00	0.00	0.00	0.00
	Total (TPY)	**1.02**	**0.07**	**0.22**	**0.12**	**0.07**	**0.07**	**0.07**
002353	TEG Reboiler E-121	0.52	0.03	0.43	0.07	0.04	0.04	0.04
002352	TEG Reboiler E-251	0.60	0.03	0.51	0.08	0.05	0.05	0.05
008792	Forced Air Furnace	0.02	0.00	0.02	0.00	0.00	0.00	0.00
	Surface Coating-Maintenance	0.00	0.20	0.00	0.00	0.00	0.00	0.00
008796	Abrasive Blasting	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total (TPY)	**2.26**	**0.34**	**1.20**	**0.28**	**0.17**	**0.17**	**0.17**

Table 5.9 Calculations for Estimated Exempt Emissions

Table 5.9
POPCO Gas Plant Part70 / PTO 8092-R10
Calculations for Estimated Exempt Emissions

A. Exempt IC Engine Calcs

Description	District ID#	Exemption Claimed	bhp	hrs/yr	NO_X	ROC	CO	SO_X	PM	PM_{10}	$PM_{2.5}$
		Device Specifications			Tons Per Year (TPY)[a]						
Crane (200 ton) Hydraulic		202.D.5	200.0	25.7	0.08	0.01	0.02	0.01	0.01	0.01	0.01
CAT 416 C Backhoe		202.F.1.c	75.0	59.6	0.07	0.00	0.01	0.01	0.00	0.00	0.00
Crane (25 ton)		202.F.1.c	210.0	8.8	0.03	0.00	0.01	0.00	0.00	0.00	0.00
Crane (300 ton) #103958		202.F.1.c	360.0	13.0	0.07	0.00	0.02	0.01	0.01	0.01	0.01
Crane (35 ton)		202.F.1.c	205.0	12.5	0.04	0.00	0.01	0.00	0.00	0.00	0.00
Crane (75 ton) #102006		202.F.1.c	190.0	87.2	0.26	0.02	0.06	0.03	0.02	0.02	0.02
Crane (8 ton)		202.F.1.c	76.0	8.4	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Manlift - 60 ft		202.F.1.c	50.0	30.0	0.02	0.00	0.01	0.00	0.00	0.00	0.00
Manlift - 65 ft		202.F.1.c	56.0	27.0	0.02	0.00	0.01	0.00	0.00	0.00	0.00
#1 Light Tower		202.F.1.e	10.7	54.0	0.01	0.00	0.00	0.00	0.00	0.00	0.00
#2 Light Tower		202.F.1.e	10.7	54.0	0.01	0.00	0.00	0.00	0.00	0.00	0.00
#3 Light Tower		202.F.1.e	10.7	54.0	0.01	0.00	0.00	0.00	0.00	0.00	0.00
#4 Light Tower		202.F.1.e	10.7	54.0	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Welder - Lincoln Portable		202.F.1.e	38.2	27.0	0.02	0.00	0.00	0.00	0.00	0.00	0.00
Welder - Lincoln Portable		202.F.1.e	38.2	8.5	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Air Compressor		202.F.2	460.0	37.0	0.26	0.02	0.06	0.03	0.02	0.02	0.02
Dust Collector		202.F.2	18.0	30.9	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Dust Collector		202.F.2	25.0	41.0	0.02	0.00	0.00	0.00	0.00	0.00	0.00
WaterBlaster (HydroPress)		202.F.2	174.0	18.9	0.05	0.00	0.01	0.01	0.00	0.00	0.00
Pump - N2 #101589			478.0	3.0	0.02	0.00	0.00	0.00	0.00	0.00	0.00
Sum of Engines with 20 < bhp < 100			**358.4**	**654.5**	**1.02**	**0.07**	**0.22**	**0.12**	**0.07**	**0.07**	**0.07**

B. Exempt External Combustion Calcs

Description	District ID#	Exemption Claimed	MMBtu/hr	hrs/yr	NO_X	ROC	CO	SO_X	PM	PM_{10}	$PM_{2.5}$
		Device Specifications			Tons Per Year (TPY)[b]						
TEG Reboiler E-121	002353	202.G.1	1.200	8,760	0.52	0.03	0.43	0.07	0.04	0.04	0.04
TEG Reboiler E-251	002352	202.G.1	1.400	8,760	0.60	0.03	0.51	0.08	0.05	0.05	0.05
Forced Air Furnace	008792	202.G.1	0.050	8,760	0.02	0.00	0.02	0.00	0.00	0.00	0.00
Sum of External Combustion Equipment			**2.650**		**1.137**	**0.063**	**0.956**	**0.154**	**0.087**	**0.087**	**0.087**

C. Other Exemption Calcs

Description	District ID#	Exemption Claimed		hrs/yr	NO_X	ROC	CO	SO_X	PM	PM_{10}	$PM_{2.5}$
		Device Specifications			Tons Per Year (TPY)						
Surface Coating-Maintenance		202.D.8			0.00	0.20	0.00	0.00	0.00	0.00	0.00
Abrasive Blasting		202.H.3			0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sum of Other Exempt Equipment					**0.00**	**0.20**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Notes:

[a]Annual Emissions calculated using emission factors from AP-42, Table 3.3-1

[b]Annual Emissions for external combustion equipment calculated using emission factors from AP-42, Table 1.4-1 and Table 1.4-2

6.0 Air Quality Impact Analysis

6.1. Scope of Review

The scope of the Air Quality Impact Analyses (AQIA) performed for this project involved an AQIA for the routine operational emissions of the facility (for NO_2, SO_2, CO, PM_{10} and ROC), and for two intermittent operational scenarios with significantly much higher "peak" emissions rates than the routine operating scenario (these two scenarios for ROC, SO_2, NO_2, CO and PM). In addition, pursuant to the District's PSD Rule, the project's PTE triggered the requirement to perform a Visibility and Soils analysis.

For the routine operations AQIA and the Visibility & Soils Analysis, ATC 9047's analysis refers to and relies on the previous AQIA prepared for the adjacent ExxonMobil SYU Oil and Gas facility in its ATC 5651 (issued 11/19/87). This AQIA was reviewed in June 1994 SEIR prepared for the POPCO expansion project specified in ATC 9047 and was found to be valid for purposes of the analysis.

However, for certain intermittent operation scenarios, previous AQIA were found to be deficient. One of the scenarios, that of planned Startup Flaring, was identified as a worst-case flaring event, but was never adequately modeled in POPCO's 1983 Flaring Analysis. This deficiency was addressed in the ATC 9047 analysis through a new AQIA.

The other intermittent operation scenario evaluated by a new AQIA was for the impact associated with a SRU failure and the flaring of its acid gas feed. Again, the previous POPCO *1983 Flaring Analysis* AQIA for this scenario was deficient in that it only considered the SO_2 emissions generated by one of two SRUs failing at one time. Because POPCO is no longer proposing the installation of two SRUs, but only one with the acid gas throughput of two units, a new AQIA was required for this scenario. In fact, pursuant to FDP Condition E-5, this analysis was required such that a mitigation system could be identified and verified to prevent any potential violation of the SO_2 ambient air quality standard. The results of this new AQIA element, and an evaluation of the proposed mitigation of this scenario's SO_2 emissions are further summarized below.

6.2. Compliance with Ambient Air Quality Standards

6.2.1 Construction Emissions: In the expansion project SEIR (93-DPF-015rv), it was concluded that emissions associated with construction activities related to installation of the expansion equipment were not required to be quantitatively assessed for ambient air quality impacts because they were estimated to be much less than 25 tons/year of any criteria pollutant (i.e., NO_X, SO_X, CO, ROC, and PM_{10}).

Construction emissions were still required to be mitigated however, through lead agency permit (93-FDP-015) condition E-3 - *Construction Plan*. This plan specified construction dust, and construction internal combustion engine related mitigations to reduce NO_x, CO, SO_x and PM_{10} emissions.

6.2.2 Routine Operations: Impacts from the routine operations of the expanded POPCO Gas Plant were modeled for the criteria pollutants NO_2, SO_2, CO and PM_{10} using the Complex II Model following the procedures specified in the District's Authority to Construct Permit Processing Manual. In addition, a health risk assessment of the project ROC impacts was completed. A summary of the routine operational AQIA results and ROC health risk assessments follows:

ROC HEALTH RISK ASSESSMENT

The ISC Model was used to predict ROC pollutant impacts from the expanded facility's ROC emissions as estimated during the SEIR review. Based on the maximum-hour scenario, an ISC model was used to simulate the maximum ambient concentration of this pollutant. ISC was found by the District to produce comparable results to those generated by Complex II with significant lower computer time requirements.

Subsequent to implementation of BARCT and BACT controls for existing and expansion related fugitive emission sources (i.e., valves, flanges and connections) pursuant to the requirements of ATC 9047, the expanded facility project ROC emissions was estimated to be some 34.40 tons less than previously permitted for the entire facility through PTO 8092. This also implied the impact of the ROC pollutant as analyzed in the SEIR had also been reduced. In the SEIR, the ROC and associated air toxics emissions profile from this project were classified as "...adverse but insignificant...", because no adverse chronic hazard (i.e., cancer exposure risk) or acute exposure risks were identified. This conclusion remains unchanged as a result of the revised project's lower ROC emissions.

NO_2, SO_2, CO AND PM CRITERIA POLLUTANT AQIA

Besides ROC, the following pollutants were reanalyzed in the SEIR for the proposed expansion:

- Nitrogen Oxides (NO_x), as NO_2
- Carbon Monoxide (CO)
- Sulfur Oxides (SO_x), as SO_2
- Particulate Matter (PM_{10}) less than 10 microns in diameter

The modeling results as documented in the project expansion SEIR (93-DPF-015rv) for the proposed project operations are shown in Table 6.1. Since the SEIR's review of these results, two other significant changes besides ROC emissions have occurred to the routine operational emissions scenario. Project NO_x emissions have significantly dropped by 5.70 lb/hr and 24.95 tpy because of District Rule 342 implementation and compliance by POPCO. However project CO emissions have increased by 5.38 lb/hr and 23.56 tpy because of Rule 342 permitting activities. These changes have been reflected in the results shown in Table 6.1 for project specific impacts and Table 6.2 for the cumulative impacts in the Las Flores Canyon area consolidated oil and gas operating area. The project contribution of PM_{10} will add to the existing background levels that exceeded the state 24-hour average standard. No other violations of the ambient air quality standards were projected for normal operations of the expanded gas plant.

6.2.3 Startup and Maintenance Flaring Analysis: Startup and planned maintenance flaring is an activity that is under the control of POPCO. Thus, any AQIA analysis result of this activity that indicates it would cause a violation of an ambient air quality standard would have compelled the District to deny ATC 9047, unless the activity's emissions were mitigated to eliminate the predicted violation(s). In accordance with District- modeling rules, the worst case Startup and Maintenance flaring scenario was modeled to demonstrate to the satisfaction of the APCO that these emission scenarios will cause no ambient air quality standard or increment to be exceeded. The flaring rate is specified in 1997 version of PTO 8092, Condition No. 4.D.5 as 1.514 MMSCF/hr, and is further defined in the POPCO 1983 Flaring Analysis to occur for up to 12 hours in length. Table 6.3 summarizes the results of the pollutant emissions impact of this flaring event in addition to the routine operational emissions of this project and the adjacent ExxonMobil SYU facility. As is shown in this table, flaring at the rate permitted in the 1997 version of PTO 8092 results in an exceedance of the state and federal NO_2 ambient air quality standard outside of the POPCO facility boundary.

As a result, ATC 9047 permit was conditioned to limit the Startup flaring rate to no more than 50 percent of that which was assessed in the AQIA of this event (i.e., 0.757 MMSCF/hr of 1,190 Btu/SCF gas; or a 900.900 MMBtu/hr flaring rate). By POPCO limiting Startup Flaring to the specified rate in ATC 9047 (see Section 9.C), it is estimated this activity will not violate any ambient air quality standard.

6.2.4 SRU Failure Flaring & Mitigation: Failure of the modified SRU unit (operating at 60 LTD) and associated unmitigated acid gas flaring at a rate of 2,162 g/sec of SO_2 from the ZTOF is projected to exceed the state 1-hour SO2 standard if flaring were to last longer than 28 seconds. The state 3-hour SO_2 standard would also be exceeded if flaring lasted longer than 342 seconds. The results of the AQIA performed for this unmitigated "worst-case" SRU failure-flaring scenario are shown in Table 6.4.

POPCO proposed a revised SRU shutdown system, which they assert will prevent any excess flaring of acid gas beyond 28 seconds in duration to the ZTOF from an unexpected SRU shutdown, such that no violation of any applicable SO_2 hourly ambient air quality standard should occur. The equipment required to effect this SRU shutdown system and its performance are required as a condition of this permit.

6.3. Air Quality Increment Analysis

An increment consumption analysis was performed for the combined ExxonMobil Las Flores Canyon SYU and POPCO expansion projects for the pollutants NO_2, PM, PM_{10}, CO, SO_2 and ROC, as documented in the ExxonMobil SYU ATC No. 5651, section 6.2, and Table 6-20. The same modeling methodology was used in this increment analysis as was employed for the standards compliance analyses Section 6.2.2 of ATC 9047. All pollutant increases from the POPCO expansion project were covered in the ExxonMobil ATC increment analysis of ATC No. 5651. The results of the routine operations increment analysis are shown in Table 6.5. During routine facility operations the maximum increment consumption of SO_2, PM, or CO from the expanded gas facility was not anticipated to exceed any allowable maximum. Some additional background on the scope and validity of this previous increment analysis follows.

In the increment analysis of the ExxonMobil SYU ATC No. 5651, it identified existing sources that would consume increment within the general vicinity of the project site. Increment consuming sources include major stationary sources (per 40 CFR 52.21) constructed since January 6, 1975, and all sources constructed, modified or otherwise permitted to increase emissions after either August 8, 1978 (for SO_2 and PM) or January 1, 1984 (for CO). The only increment consumers identified in the project area, in addition to the proposed POPCO project, were Exxon's SYU Oil and Gas Plant, and Platforms Harmony, Heritage and Heather, which were approved for installation by the US Minerals Management Service.

INCREMENT FEES

Increment fees were triggered for ROC as a result of the expansion permitted through ATC 9047-2. ExxonMobil completed payment of the increment fees in 2007.

6.4. *Vegetation and Soils Analysis*

Because the modifications of ATC 9047 proposed to decrease ROC (an ozone precursor), but increase the project's SO_x emissions, this analysis was required pursuant to Rule 205.C. This portion of the AQIA section of ATC 9047 relies primarily on the similar analysis performed as part of the issuance of ExxonMobil's SYU oil and gas processing facility ATC No. 5651 on November 19, 1987. The basis of this updated analysis, background concentrations of affected pollutants, and the estimated impacts of both the ExxonMobil and the expanded POPCO facility's routine operations emissions were presumed to be accurately presented and analyzed by the previous analysis. A synopsis of the Vegetation and Soils Analysis considering the modified and expanded POPCO project follows.

The land in the general area of the proposed project is used for grazing. At sufficient concentration and duration, ambient air pollutants, specifically ozone, sulfur dioxide, nitrogen dioxide, and various combinations of the three, can injure vegetation. An ozone concentration of 0.25 ppmv over a six-hour period has been shown to injure plants. Additional studies have also demonstrated slight injury to sensitive plants at ozone exposure levels of 0.02-0.03 ppmv for an 8-hour duration and 0.08-0.15 ppmv for 2 hours. Evidence of minimal foliar injury to trees and shrubs at ozone concentrations of 0.2-0.5 ppmv for 1 hour and to agricultural crops at 0.2-0.41 ppmv for one-half hour has also been substantiated.

The maximum hourly ozone concentration expected during operation of the proposed project is projected to be 0.14 ppmv. Based on past studies this concentration may cause slight damage to sensitive plants.

Recent studies of sulfur dioxide exposure show injury thresholds at 0.3 ppmv for 8 hours (for middle-aged plants), at 0.14 ppmv for 15-20 hours (for oat seedlings), and at a 0.007-0.010 ppmv average for the growing season. The maximum hourly ambient concentration of sulfur dioxide expected during operation of the facility would be approximately 0.19 ppmv (523 μg/m3), which is below the thresholds cited by these studies. Therefore, no plant injury is expected from sulfur dioxide.

Nitrogen dioxide sensitivity has been cited in the literature at concentrations of 2.5 ppmv for a 4-hour duration for tomato seedlings and other plants with middle-aged leaves. Leaf symptoms have been observed at 1.6-2.6 ppmv for 2-day exposures and 20 ppmv for 1-hour exposures. The maximum hourly ambient concentration of nitrogen dioxide predicted during the production phase would be 0.42 ppmv (814 μg/m3), which is well below the injury threshold cited. Therefore, no plant injury is expected from nitrogen dioxide emissions.

During the operating phase, total emissions from the POPCO facility are predicted to be 25.35 tons per year of sulfur dioxide and 41.20 tons per year of nitrogen oxides. This is relatively small in comparison to the adjacent ExxonMobil's facility's peak contribution at 341 and 337 tons per year for these respective pollutants. However, annual deposition of sulfates and nitrates from both these projects' combined operations onto the surrounding soils will be minimal, based on the large project area over which the pollutants are dispersed. In addition, the pronounced alkalinity of the soils will ameliorate the effects of the minor decrease in pH expected from nitrate or sulfate deposition. No long-term buildup of deposition products is expected because of utilization of these compounds by existing vegetation. In addition, the POPCO facility is not anticipated to emit heavy metals or other toxic substances which could damage soils used for crop or forage production. Therefore, no impact on soils was predicted to occur from project emissions.

6.5. *Potential to Impact Visibility and Opacity*

During facility operations, the potential exists for opacity violations due to flaring activities and due to operation of the diesel-fired internal combustion engines. The potential for these violations are minimized through the use of a smokeless flare and through proper operation and maintenance of the IC engines.

6.6. *Public Nuisance*

Historically, oil and gas processing facilities handling high sulfur content petroleum and produced gases within the County of Santa Barbara were the subject of numerous public complaints regarding odors and other related public nuisance factors. Based on these experiences it was considered particularly important to evaluate the potential for public nuisance from the proposed facilities. Emissions from the operation phases of the project were reviewed to determine compliance with District Rules 205.A and 303. These rules relate to the prevention of public nuisance as required by Section 41700 of the State Health and Safety Code. In addition, an evaluation of this facility's operations in accordance with the requirements of Santa Barbara County's Ordinance No. 2832 which pertains to facilities "...handling sour gas with an H_2S content greater than 825 ppmv..." was also performed. This ordinance requires that a plan exist for detecting and monitoring H_2S emissions, and operating in a manner such that ambient H_2S concentrations do not exceed the limits established by Ordinance 2832 for the protection of public health. This ordinance also speaks to facilities operating "...in the vicinity of any residence or place of public gathering which could affect the safety or well-being of others...". Places of public gathering in the vicinity of the POPCO gas plant include the Refugio and El Capitan State Beaches.

There is a potential to create a public nuisance due to emissions of reduced sulfur compounds that could occur during POPCO facility operations. Both the high sulfur content of the sour gas feedstock and the natural gas liquids produced are potential sources of the reduced sulfur compounds. Additional sources of reduced sulfur emissions include the amine unit, the sulfur removal unit (SRU), the tail gas unit, the sour gas pipeline and fugitive emissions from gas and NGL handling facilities.

However, the potential release of reduced sulfur and H_2S emissions from routine operations of the POPCO facility is anticipated to be minimized to a great extent because of the following. SRU failures will be controlled by minimizing the quantity of acid gas sent to the flare. This avoids any potential for excess releases of H_2S and other reduced sulfur compounds. Tailgas unit emissions are expected to be controlled through incineration of this stream by the process boilers. Fugitive hydrocarbon and associated reduced sulfur emission sources will be controlled through a combination of BACT, BARCT and compliance with the LDAR activities specified in District Rule 331 and this permit.

However, since the human odor threshold for H_2S is very low at 0.00047 ppmv (Ref. SCAQMD EIR Handbook, App. M), it is possible that odors could, at times, be detectable outside the property line. Therefore, due to the potential for odorous emissions from this facility, an odor-monitoring program has been specified since this plant became operational in 1984. The existing Odor monitoring, including reduced sulfur compounds, is summarized in Table 4.16. POPCO is required to implement the District-approved *Odor Monitoring Plan*, as specified in Section 9.C.

6.7. *Ambient Air Quality Monitoring*

The pre-construction monitoring requirements of District's NSR rule were not triggered by ATC 9047 because the project's emissions did not exceed the thresholds in effect at that time. However, the adjacent ExxonMobil SYU oil and gas processing facility project did trigger these requirements. As a result, ExxonMobil has installed sufficient ambient air quality monitoring stations to monitor and verify that consolidated facility operations do not adversely impact ambient air quality.

Table 6.1 Air Quality Impacts – Operations Phase – Project Specific (μg/m^3)

Pollutant	Averaging Time	Project Contribution	Background	Total	Ambient Standard
NO_2	1-hour	0.0	45	45	470
	Annual	4.0	6	10	100
PM_{10}	24-hour	0.3	61	61.3	50
	Annual	0.1	24	24.1	30
CO	1-hour	45.8	2,629	2,675	23,000
	8-hour	13.1	1,966	1,979	10,000
SO_2	1-hour	215.0	133	348	655
	3-hour	172.0	100	272	1,300
	24-hour	26.0	28	54	131
	Annual	6.7	5	11.7	80

NOTES

1. POPCO project specific contribution concentrations are from the 1987 District ATC No. 5651 for the ExxonMobil SYU project, *Air Quality Impact Analysis Technical Support Document, Table 2.5-16*, except for the one-hour SO_2 impact which is derived from the 3-hour value. Background concentration is from Table 2.5-5 of the same document and the annual PM_{10} is derived from the 24-hour concentration.

2. Project-specific NO_2 impacts in this table are adjusted downward by 42% from those presented in SEIR which occurred from implementation of NO_2 emission controls pursuant to Rule 342 and PTO 9215.

3. CO impacts are adjusted upward from those presented in the SEIR for the hourly CO emission increase to 6.34 lb/hr from the hourly rate assessed in the project SEIR of 0.97 lb/hr that occurred through implementation of Rule 342 controls and PTO 9215.

Table 6.2 Cumulative Air Quality Impacts in Las Flores Canyon – Operations Phase ($\mu g/m^3$)

Pollutant	Averaging Time	Cumulative Project Contributions	Background	Total	Ambient Standard
NO_2	1-hour	392	45	437	470
	Annual	42	6	48	100
PM_{10}	24-hour	13	61	74	50
	Annual	4	24	26	30
CO	1-hour	10,399 [(3)]	2,629	13,028	23,000
	8-hour	4,132 [(3)]	1,966	6,098	10,000
SO_2	1-hour	346	133	479	655
	3-hour	282	100	382	1,300
	24-hour	51	28	79	131
	Annual	15	5	20	80

NOTES

1. Cumulative impacts in the Las Flores Canyon consolidated oil and gas processing area based upon maximum project operational contribution concentrations attributed to the ExxonMobil SYU and POPCO projects. Except for CO, these values are from the 1987 District ATC No. 5651 for the ExxonMobil SYU project, *Air Quality Impact Analysis Technical Support Document*, *Table 2.5-15*, except for the one-hour SO_2 impact which is derived from the 3-hour value. Background concentrations are from Table 2.5-5 of the same document and the annual PM_{10} is derived from the 24-hour concentration.

2. Project-specific NO_2 impacts in this table are adjusted downward by 3 $\mu g/m^3$ from those presented in SEIR which occurred from implementation of NO_2 emission controls pursuant to Rule 342 and PTO 9215.

3. CO impacts are adjusted upward from those presented in SEIR (Table5.1-5) for the hourly CO emission increase to 6.34 lb/hr from the hourly rate assessed in the project SEIR of 0.97 lb/hr that occurred through implementation of Rule 342 controls and PTO 9215.

4. The change in the POPCO project's CO emissions was conservatively assumed to affect the cumulative Las Flores Canyon CO impacts by 100 percent of POPCO's increase in mass emissions from the original modeled CO emission rate (i.e., by a factor of 6.34/0.97 = 6.57). This assumption represents a reasonable worst case assessment of the cumulative projects' impacts in Las Flores Canyon.

Table 6.3 Flaring Impacts – Startup Activities[5] ($\mu g/m^3$)

Pollutant	Averaging Time	Maximum Air Quality Impacts	Background	Total	Ambient Standard
NO_2 [(1)]	1-hour	556	49	605	470
PM_{10}	24-hour	26 [(3)]	48	74	50 [(4)]
CO [(2)]	1-hour 8-hour	7,993 3,690	1,181 1,181	9,174 4,871	23,000 10,000

NOTES

1. Calculated using the ozone-limiting method, using the background concentrations of 126 ppbv and 25 ppbv for ozone and NO_2 respectively.

2. Includes impact from assumed simultaneous operations of ExxonMobil's turbine bypass.

3. POPCO sources contributed 12 µg/m3; POPCO flare alone contributed 11$\mu g/m^3$, and the ExxonMobil source contributed 14 $\mu g/m^3$ to this highest concentration.

4. PM_{10} federal standard is 150 $\mu g/m^3$. The state standard is 50 $\mu g/m^3$.

5. Impacts associated with POPCO facility startup flaring emission rates of 360.4, 648.7, and 25.23 lb/hr for NO_X as NO_2, CO, and PM_{10} respectively. Compliance with the NO_2 standard is achieved at one-half of these mass emission rates.

6. Results analysis and summary based upon data communicated in District memoranda are maintained in the files for ATC 9047.

Table 6.4 Flaring Impacts – SRU Failures[1] (μg/m³)

Pollutant	Averaging Time	Impact @ 30 min/hr Release (In ExxonMobil Property)	Impact @ 30 min/hr Release (Outside of ExxonMobil Property)	Ambient Standard	Maximum Flare Release Duration for No AAQS Violation [2] (Seconds)
SO_2	1-hour	36,924	33,037	655	28
	3-hour	19,940	17,555	1,300	342

NOTES

1. All data presented here is for impact modeling of Scenario 1, representing the worst-case SRU acid gas feed rate, and thus flaring rate, as reviewed and analyzed by District staff. See attachment 10.5. Modeling was performed for POPCO by their contractor, consistent with District-approved modeling protocols.

2. Flaring event durations which will not cause violation of standard are revised slightly downwards in accordance with findings of ATC 9047.

Table 6.5 Maximum Project Increment Consumed (μg/m³)

Pollutant	Averaging Time	Project Contribution	Increment Consumed to Date (1996)[1]	Total	Allowable Increment
SO_2	3-hour	172.0	105.0	277.0	512
	24-hour	26.0	19.0	45.0	91
	Annual	6.7	5.6	12.3	20
PM	24-hour	0.6	13.5	14.1	37
	Annual	0.1	3.0	3.1	19
CO [2]	1-hour	45.8	1,471	1,517	10,000
	8-hour	13.1	590	603	2,500

NOTES

1. POPCO project, and ExxonMobil project's specific contribution concentrations are from the 1987 District ATC No. 5651 for the ExxonMobil SYU project, *Air Quality Impact Analysis, Table 6-20*.

2. CO impacts are adjusted upward from those presented in SEIR for the hourly CO emission increase to 6.34 lb/hr from the hourly rate assessed in the project SEIR of 0.97 lb/hr that occurred through implementation of Rule 342 controls and PTO 9215.

7.0 CAP Consistency, Offset Requirements, and ERCs

7.1. General

The stationary source is located in an ozone nonattainment area. Santa Barbara County has not attained the state ozone ambient air quality standards. The County also does not meet the state PM_{10} ambient air quality standards. Therefore, emissions from all emission units at the stationary source and its constituent facilities must be consistent with the provisions of the USEPA and State approved Clean Air Plans (CAP) and must not interfere with progress toward attainment of federal and state ambient air quality standards. Under District regulations, any modifications at the source that result in an emissions 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 $PM_{2.5}$).

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 2016 Ozone Plan, (which was later revised in August 2017), and is the ninth triennial update to the initial State Air Quality Attainment Plan. As Santa Barbara County was designated nonattainment-transitional for the state eight-hour ozone standard at the time of the 2019 Ozone Plan publication, the county reached attainment status on July 1, 2020. The 2019 Ozone Plan demonstrates how the District plans to attain and keep that standard. The 2019 Ozone Plan therefore satisfies all state triennial planning requirements.

7.3. Offset Requirements

7.3.1 NEI Offsets: Under previous District rules, POPCO was required to provide offsets for the project's operational net emission increase for NO_X, ROC, PM, PM_{10} and SO_2. In order to demonstrate a net air quality benefit, the offsets were adjusted to account for the distance between the project source and the offset source.

7.3.2 PTE Offsets: District Rule 802, *New Source Review*, was updated on August 25, 2016, to go from a net emissions increase (NEI) to a potential to emit (PTE) calculation methodology for determining offsets. The emissions from ExxonMobil-Santa Ynez Unit (SYU) Project stationary source triggers offset requirements for NO_X, ROC, SO_X, PM and PM_{10} based on the stationary source PTE for those pollutants. All projects permitted after August 25, 2016 must be offset pursuant to the requirements of Rule 802.3.

The specific offset requirements for the POPCO Gas Plant are detailed in Tables 7.1 and7.2.

7.4. Emission Reduction Credits

7.4.1 DOI # 0023/ERC Certificate No. 1006: On October 17, 2001 POPCO obtained ERC Certificate No. 1006 (DOI No. 0023) for emission reductions in NOx, ROC, CO, SOx, PM, and PM10 for planned removal of the utility boilers, Stretford Tailgas Cleanup Unit, and Boiler Fuel Gas System under the Synergy Project (ATC 10351 and ATC 10352). Part of these reductions would have been used to offset emission increases at Las Flores Canyon due to the Synergy Project. Since the Synergy Project was abandoned, the ERC created has been revoked.

7.4.2 DOI # 0034/ERC Certificate No. 114-1009: On October 13, 2004 POPCO obtained ERC Certificate No. 114-1009 (DOI No. 0034) for emission reductions in ROC for decreasing the minor leak detection threshold to 100 ppmv for 919 valves and 2,757 flange/connection components in hydrocarbon service at the POPCO and Las Flores Canyon facilities (ATC/PTO 11130 and ATC/PTO 11170). Part of these reductions were used to offset fugitive increases associated with the Heritage Gas Expansion Project.

Table 7.1 - Offset Liability Table for ExxonMobil SYU Source
Updated: March 23, 2018

Item	Permit	Facility	Issue Date	ERC Returned?	Project	Offset Liability ---- tons/year ---- NO_X	ROC	SO_X	PM	PM_{10}	ERC Source	Notes
1	Prior Offset Liabilities	LFC	pre-8/2016	n/a	See LFC Archive Offset Tables	98.870	70.200	44.260	47.730	38.480	Various	(a)(b)
2	Prior Offset Liabilities	POPCO	pre-8/2016	n/a	See POPCO Archive Offset Tables	0.640	4.390	12.920	0.080	0.080	Various	(a)(c)
3	Prior Offset Liabilities	Hondo	pre-8/2016	n/a	See Hondo Archive Offset Tables	0.000	3.770	20.500	0.000	0.000	Various	(a)(c)
4	Prior Offset Liabilities	Harmony	pre-8/2016	n/a	See Harmony Archive Offset Tables	0.000	4.310	19.780	0.000	0.000	Various	(a)(c)
5	Prior Offset Liabilities	Heritage	pre-8/2016	n/a	See Heritage Archive Offset Tables	0.000	7.280	19.780	0.000	0.000	Various	(a)(c)
6	ATC 14978	LFC	03/08/17	No	Diesel fired prime air compressors.	0.016	0.008	0.000	0.000	0.000	ERC 427	(g)
					TOTALS (tpy) =	99.526	89.958	117.240	47.810	38.560		

Notes

(a) Pre-August 26, 2016 offset liabilities are summarized in Items (1) - (5). See facility Archive Offset Tables for details.
(b) Pre-August 26, 2016 offset liabilities for LFC from Table 5.10 of PTO 5651-R5.
(c) Pre-August 26, 2016 offset liabilities for POPCO, Hondo, Harmony and Heritage from Tables 7.1, 7.2 and 7.3 of PTO 8092-R8, PTO 9100-R5, PTO 9101-R5 and PTO 9102-R5, respectively.
(d) See Table 7.2 for ERCs required to mitigate the offset liability. ERC Source denotes the ERC Certificate # used by the ATC permit.
(e) Permits with zero emission increases not shown in this table.
(f) ERCs used after August 26, 2016 may be returned to the Source Register. This line item reflects such a return. It is entered as a negative entry to balance this ledger. Original entry is not revised.
(g) Used as back up pneumatic air supply during temporary preservation period.

Table 7.2 - Emission Reduction Credits Table for ExxonMobil SYU Source
Updated: March 23, 2018

Item	Permit	Facility	Surrender Date	ERC Returned?	Emission Reduction Credits ---- tons/year ---- NO_X	ROC	SO_X	PM	PM_{10}	Offset Ratio	ERC Source	NOTES
1	Prior Offset Liabilities	LFC	pre-8/2016	n/a	247.000	159.960	62.250	58.050	46.440	varied	Various	(a)(b)
2	Prior Offset Liabilities	POPCO	pre-8/2016	n/a	3.810	22.120	23.850	0.500	0.500	varied	Various	(a)(c)
3	Prior Offset Liabilities	Hondo	pre-8/2016	n/a	0.000	10.730	21.730	0.000	0.000	varied	Various	(a)(c)
4	Prior Offset Liabilities	Harmony	pre-8/2016	n/a	0.000	10.550	20.680	0.000	0.000	varied	Various	(a)(c)
5	Prior Offset Liabilities	Heritage	pre-8/2016	n/a	0.000	15.140	20.680	0.000	0.000	varied	Various	(a)(c)
6	ATC 14978	LFC	03/08/17	No	0.018	0.009	0.000	0.000	0.000	1.1	ERC 427	--
				TOTALS (tpy) =	250.828	218.509	149.190	58.550	46.940			

Notes

(a) Items (1) - (5) reflect all NSR ERCs used for the five ExxonMobil SYU stationary source facilities prior to August 26, 2016. See the August 26, 2016 Archive Offset Tables for details.

(b) Pre-August 26, 2016 ERC requirements from Tables 7.1 - 7.4 of PTO 5651-R5, PTO 8092-R8, PTO 9100-R5, PTO 9101-R5 and PTO 9102-R5.
PM10 ERC value not documented in prior permits. Assumed to be 80% of PM.

(c) Brown text cells require data entry. Do not enter data in Black text cells

ATC 14978 is valid only during the period that the Las Flores Canyon facility is idle due to the failure of the AAPL pipeline. This permit shall expire immediately upon resumption of operation of any of the emission elements subject to DOI 098-01

8.0 Lead Agency Permit Consistency

8.1. Prior Lead Agency Action

A *Final Development Plan* (FDP) for the POPCO Gas Plant Expansion project was approved by the Santa Barbara County Planning Commission on November 4, 1994. The approved Plan contains a number of provisions that relate to the air quality aspects of the proposed project. The following is a summary of major conditions and their relationship to the District's evaluation and final decision on the project.

FDP Condition E-2: Requirement for ATC prior to construction.

The issuance of ATC 9047 permit fulfills this requirement of the FDP.

FDP Condition E-3: Construction Plan: Prior to issuance of the land use permit, POPCO shall submit to the Planning and Development Department a plan, approved by the District, which includes measure to reduce NO_X, ROC, SO_X, and PM_{10} emissions produced during expansion construction activities.

The subject plan was jointly reviewed and approved by the District and Planning and Development.

FDP Condition E-4: Fugitive ROC Emissions.

This FDP condition required fugitive emissions related to new components to be fully offset if the new components generated more than 25 lb/day of ROC emissions. In addition, if the entire project's ROC net emission increases triggered emission offsets, those offsets were also to be secured to comply with this condition.

Because the proposed expansion actually decreased emissions from that of the existing facility's ROC emissions, none of the offset triggers specified in this condition were triggered.

FDP Condition E-5: Sulfur Recovery Unit Failure.

POPCO is required to install a system or operation procedure that mitigates to the extent feasible any predicted violation of the SO_2 ambient air quality standard which may occur during a SRU failure. POPCO has performed an AQIA to model the modified SRU unit failure. It has also proposed a SRU failure mitigation system that eliminates excess SRU acid gas venting to the flare (see discussion in the AQIA section of this permit). The installation and operations of this system are specified as a condition of this permit.

FDP Conditions E-7: Facility Shall Emit No Detectable Odor.

POPCO's agreement to continue to operate an odor monitoring station outside the POPCO facility but inside the ExxonMobil property, and expected operations of the POPCO facility in compliance with Rule 310 - Odorous Organic Sulfides should ensure that operations of the expanded facility comply with this condition of the FDP.

FDP Condition A-23: *Throughput Limitations.*

This permit has been issued with the maximum authorized offshore-to-onshore sour gas pipeline rate, POPCO plant sour gas input rate and characteristics, molten sulfur production limits, and maximum sales gas production rates consistent with the FDP.

8.2. Lead Agency Actions for PTO 8092

Pursuant CEQA Guidelines Section 15300.4 and Appendix A (*District List of Exempt Projects*) of the District's *Environmental Review Guidelines* document (10/95), the issuance of this Permit to Operate is exempt from CEQA.

SECTION 9 TABLE OF CONTENTS

9.0 Permit Conditions

This section lists the applicable permit conditions for the POPCO Gas Plant. Section 9 contains the permit's enforceable requirements.

Section 9.A lists the standard administrative conditions. Section 9.B lists 'generic' permit conditions, including emission standards, for all equipment in this permit. Section 9.C lists conditions affecting specific equipment. Section 9.D lists non-federally enforceable (i.e., District only) permit conditions. Conditions listed in Sections A, B and C are enforceable by the USEPA, the District, the State of California and the public. Conditions listed in Section D are enforceable only by the District and the State of California. Where any reference contained in Sections 9.A, 9.B or 9.C refers to any other part of this permit, that part of the permit referred to is federally enforceable.

9.A Standard Administrative Conditions

A.1 **Condition Acceptance.** Acceptance of this operating permit by POPCO shall be considered as acceptance of all terms, conditions, and limits of this permit. [*Re: ATC 9047]*

A.2 **Grounds for Revocation.** Failure to abide by and faithfully comply with this permit or any Rule, Order, or Regulation may constitute grounds for revocation pursuant to California Health & Safety Code Section 42307 *et seq*. [*Re: ATC 9047]*

A.3 **Defense of Permit.** POPCO agrees, as a condition of the issuance and use of this permit, to defend at its sole expense any action brought against the District because of issuance of this permit. POPCO shall reimburse the District for any and all costs including, but not limited to, court costs and attorney's fees which 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 POPCO of its obligation under this condition. The District shall bear its own expenses for its participation in the action. [*Re: ATC 9047]*

A.4 **Reimbursement of Costs**. All reasonable expenses, as defined in District Rule 210, incurred by the District, District contractors, and legal counsel for the activities listed below that follow the issuance of this permit, including but not limited to permit condition implementation, compliance verification and emergency response, directly and necessarily related to enforcement of the permit shall be reimbursed by POPCO as required by Rule 210. Reimbursable activities include work involving: Part 70 Federal Operating permit program, CEMS, modeling/AQIA, ambient air monitoring, DAS and data telemetry. Notwithstanding the above, DAS system operation and maintenance shall be assessed fees based on a fee schedule consistent with Section 9.C of this permit. [*Re: ATC 9047, PTO 8092, PTO 9215, ATC 9693]*

A.5 **Access to Records and Facilities.** As to any condition that requires for its effective enforcement the inspection of records or facilities by the District or its agents, POPCO shall make such records available or provide access to such facilities upon notice from the District. Access shall mean access consistent with California Health and Safety Code Section 41510 and Clean Air Act Section 114A. [*Re: ATC 9047]*

A.6 **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. [*Re: ATC 9047, PTO 8092, PTO 9215, ATC/PTO 9471, ATC 9471-1, ATC 9487, ATC 9675]*

A.7 **Consistency with Analysis.** Operation under this permit shall be conducted consistent with all data, specifications and assumptions included with the application and supplements thereof (as documented in the District's project file) and the District's analyses under which this permit is issued as documented in the Permit Analyses prepared for and issued with the permit. [*Re: ATC 9047, PTO 8092, ATC/PTO 9471, ATC 9471-1, ATC 9487, ATC 9675, ATC 9693]*

A.8 **Consistency with State and Local Permits.** Nothing in this permit shall relax any air pollution control requirement imposed on the project by the County of Santa Barbara in the POPCO Project Final Development Plan No. 93-FDP-015 and any subsequent modifications. [*Re: ATC 9047]*

A.9 **Equipment Maintenance.** All equipment permitted herein shall be properly maintained and kept in good working condition in accordance with the equipment manufacturer specifications at all times. [*Re: ATC 9047, PTO 9215, ATC 9693]*

A.10 **Conflict Between Permits.** The requirements or limits that are more protective of air quality shall apply if any conflict arises between the requirements and limits of this permit and any other permitting actions associated with the equipment permitted herein. [*Re: ATC 9047]*

A.11 **Complaint Response.** POPCO shall provide the District with the current name and position, address and 24-hour phone number of a contact person who shall be available to respond to complaints from the public concerning nuisance or odors. This contact person shall aid the District staff, as requested by the District, in the investigation of any complaints received, POPCO shall take corrective action, to correct the facility activity which is reasonably believed to have caused the complaint. [*Re: ATC 9047]*

A.12 **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: ATC 9047, 40 CFR Part 70.6.(a)(6), District Rule 1303.D.1]*

A.13 **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 two (2) working days of the emergency. The "notice of emergency" shall contain the information/documentation listed in Sections (1) through (5) of Rule 1303.F. [*Re: 40 CFR 70.6(g), District Rule 1303.F*]

A.14 **Compliance Plans**.

(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.15 **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.16 **Severability.** In the event that any condition herein is determined to be invalid, all other conditions shall remain in force. [Ref: Rule 1303]

A.17 **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.

(a) The permittee shall apply for renewal of the Part 70 permit no later than 6 months before the date of the permit expiration. Upon submittal of a timely and complete renewal application, the Part 70 permit shall remain in effect until the Control Officer issues or denies the renewal application. [*Re: District Rule 1304.D.1*]

A.18 **Payment of Fees.** The permittee shall reimburse the District for all its Part 70 permit processing and compliance expenses for the stationary source on a timely basis. Failure to reimburse on a timely basis shall be a violation of this permit and of applicable requirements and can result in forfeiture of the Part 70 permit. Operation without a Part 70 permit subjects the source to potential enforcement action by the District and the USEPA pursuant to section 502(a) of the Clean Air Act. [*Re: District Rules 1303.D.1 and 1304.D.11, 40 CFR 70.6(a)(7)*]

A.19 **Prompt Reporting of Deviations.** The permittee shall submit a written report to the District documenting each and every deviation from the requirements of this permit or any applicable federal requirements within seven (7) days after discovery of the violation, but not later than six (6) months after the date of occurrence. The report shall clearly document 1) the probable cause and extent of the deviation, 2) equipment involved, 3) the quantity of excess pollutant emissions, if any, and 4) actions taken to correct the deviation. The requirements of this condition shall not apply to deviations reported to District in accordance with Rule 505, Breakdown Conditions, or Rule 1303.F Emergency Provisions. [*District Rule 1303.D.1, 40 CFR 70.6(a) (3)*]

A.20 **Reporting Requirements/Compliance Certification.** The permittee shall submit compliance certification reports to the USEPA and the Control Officer every six months. These reports shall be submitted on District approved 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 from permit requirement. The reporting periods shall be each half of the calendar year, e.g., January through June for the first half of the year. These reports shall be submitted by September 1st and March 1st, respectively, each year. Supporting monitoring data shall be submitted in accordance with the "Semi-Annual Compliance Verification Report" condition in Section 9.C. The permittee shall include a written statement from the responsible official, which certifies the truth, accuracy, and completeness of the reports. [*Re: District Rules 1303.D.1, 1302.D.3, 1303.2.c*]

A.21 **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.22 **Recordkeeping Requirements**. The permittee shall maintain records of required monitoring information that include the following:

(a) The date, place as defined in the permit, and time of sampling or measurements;

(b) The date(s) analyses were performed;

(c) The company or entity that performed the analyses;

(d) The analytical techniques or methods used;

(e) The results of such analyses; and

(f) The operating conditions as existing at the time of sampling or measurement;

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

A.23 **Conditions for Permit Reopening.** The permit shall be reopened and revised for cause under any of the following circumstances:

(a) Additional Requirements: If additional applicable requirements (e.g., NSPS or MACT) become applicable to the source which has an unexpired permit term of three (3) or more years, the permit shall be reopened. Such a reopening shall be completed no later than 18 months after promulgation of the applicable requirement. However, no such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended. All such re-openings shall be initiated only after a 30 day notice of intent to reopen the permit has been provided to the permittee, except that a shorter notice may be given in case of an emergency.

(b) Inaccurate Permit Provisions: If the District or the USEPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emission standards or other terms or conditions of the permit, the permit shall be reopened. Such re-openings shall be made as soon as practicable.

(c) Applicable Requirement: If the District or the USEPA determines that the permit must be revised or revoked to assure compliance with any applicable requirement including a federally enforceable requirement, the permit shall be reopened. Such re-openings shall be made as soon as practicable.

(d) Administrative procedures to reopen a permit shall follow the same procedures as apply to initial permit issuance. Re-openings shall affect only those parts of the permit for which cause to reopen exists.

(e) If a permit is reopened, the expiration date does not change. Thus, if the permit is reopened, and revised, then it will be reissued with the expiration date applicable to the re-opened permit.

[*Re: 40 CFR 70.7(f), 40 CFR 70.6(a)*]

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

A.25 **Risk Management Plan – Section 112r.** POPCO shall comply with the requirements of 40 CFR 68 on chemical accident prevention provisions. The annual compliance certification must include a statement regarding compliance with this part, including the registration and submission of the risk management plan (RMP). [*Re: 40 CFR 68*]

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. These rules apply to the equipment and operations at the POPCO facility as they currently exist. Compliance with these requirements is discussed in Section 3.4.2. In the case of a discrepancy between the wording of a condition and the applicable District rule, 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).** POPCO shall not discharge into the atmosphere from any single source of emission any air contaminants for a period or periods aggregating more than three minutes in any one hour which is:

(a) As dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines, or

(b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subsection B.2.(a) above.

(c) POPCO shall determine compliance with the requirements of this Condition/Rule and Condition C.36, as specified below: [*Re: District Rule 302*]

B.3 **Nuisance (Rule 303).** No pollutant emissions from any source at POPCO 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).** POPCO 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).** POPCO shall not discharge into the atmosphere from any single source sulfur compounds, hydrogen sulfide, combustion contaminants and carbon monoxide in excess of the standards listed in Sections A, B and G of Rule 309. POPCO shall not discharge into the atmosphere from any fuel burning equipment unit, sulfur compounds, nitrogen oxides or combustion contaminants in excess of the standards listed in Section E and F of Rule 309. [*Re: District Rule 309*]

B.6 **Sulfur Content of Fuels (Rule 311).** POPCO shall not burn fuels with a sulfur content in excess of 0.5% (by weight) for liquid fuels and 239 ppmvd or 15 gr/100scf (calculated as H_2S) for gaseous fuels. Compliance with this condition shall be based on continuous monitoring of the fuel gas with H_2S analyzers, daily sorbent tube samples, quarterly total sulfur content measurements of the fuel gas using ASTM or other District-approved methods and 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).** POPCO shall comply with the emission standards listed in Section B of Rule 317. Compliance with this condition shall be based on POPCO's compliance with the *Solvent Usage* condition in this permit. [*Re: District Rule 317*]

B.8 **Solvent Cleaning Operations (Rule 321).** POPCO shall comply with the operating requirement, equipment requirements and emission control requirements for all solvent cleaners subject to this Rule. Compliance shall be based on District inspection of the existing cold solvent cleaner and a thorough ATC application review for future solvent cleaners (if any). [*Re: District Rule 321*]

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 the *Solvent Usage* condition in this permit and facility inspections. [*Re: District Rule 322*]

B.10 **Architectural Coatings (Rule 323.1)**: ExxonMobil shall comply with the rule requirements for any architectural coating that is supplied, sold, offered for sale, or manufactured for use within the District.

B.11 **Disposal and Evaporation of Solvents (Rule 324).** POPCO shall not dispose through atmospheric evaporation more than one and a half gallons of any photochemically reactive solvent per day. Compliance with this condition shall be based on the *Solvent Usage* condition in this permit and facility inspections. [*Re: District Rule 324*]

B.12 **Continuous Emissions Monitoring (Rule 328).** POPCO shall comply with the requirements of Section C, F, G, H and I of Rule 328. Compliance shall be based on the monitoring, recordkeeping and reporting requirements of this permit as well as on-site inspections. [*Re: District Rule 328*]

B.13 **Polyester Resin Operations (Rule 349).** POPCO shall comply with the requirements of Section D of Rule 352. Compliance shall be based on the monitoring requirements of Sections E and F and on-site inspections. [*Re: District Rule 349*]

B.14 **Natural Gas-Fired Fan Type Central Furnaces and Residential Water Heaters (Rule 352).** POPCO shall comply with the requirements of Section D and E of Rule 352. Compliance shall be based on the monitoring requirements of Section F and on-site inspections. [Re: *District Rule 352*].

B.15 **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.16 **Large Water Heaters and Small Boilers (Rule 360).** Any boiler, water heater, steam generator, or process heater rated greater than or equal to 75,000 Btu/hr and less than or equal to 2.000 MMBtu/hr and manufactured after October 17, 2003 shall be certified per the provisions of Rule 360. An ATC/PTO permit shall be obtained prior to installation of any grouping of boilers, water heaters, steam generators, or process heaters subject to Rule 360 whose combined system design heat input rating exceeds 2.000 MMBtu/hr.

B.17 **Rule 361 – Small Boilers, Steam Generators, and Process Heaters (Rule 361).** This rule applies to any boiler, steam generator, or process heater with a rated heat input capacity greater than 2 MMBtu/hr and less than 5 MMBtu/hr. On January 1, 2020, the emission standards of Rule 361.D.1 will apply to the 2.1 MMBtu/hr TEG reboiler.

B.18 **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*]

B.19 **Oil and Natural Gas Production MACT.** POPCO shall comply with the following MACT requirements: [*Re:* 40 CFR 63, Subpart HH]

(a) <u>NGL Storage Vessels:</u>

(i) *Operational Limits (40 CFR 63.766(b)(2)):*

(1) POPCO shall operate the storage vessels with no detectable emissions at all times that material is in the storage vessel. No detectable emissions is defined as emissions less than 500 ppmv (40 CFR 63.772(c)(8)).

(2) One or more safety devices that vent directly to the atmosphere may be used on the storage vessels.

(ii) *Inspection and Monitoring Requirements (40 CFR 63. Section 63.769)):*

(1) POPCO shall perform inspection and monitoring per District Rule 331 to ensure fugitive emission components on the storage vessels operate at no detectable emissions. Inspection results shall be submitted with the Notification of Compliance Status Report.

(iii) *Recordkeeping Requirements (40 CFR 63.774(b)):*

(1) POPCO shall retain at least five (5) years of information as required in this section. The most recent twelve (12) months of records shall be kept in a readily accessible location; the previous four (4) years may be retained offsite. Records may be maintained in hard copy or computer-readable form (40 CFR 63.774(b)(1)).

(2) POPCO shall maintain records identifying ancillary equipment and compressors controlled under 40 CFR Part 60, subpart KKK (40 CFR 63.774(b)(9)).

(iv) *Reporting Requirements (40 CFR 63.775):*

(1) POPCO shall submit the Periodic Report semiannually beginning August 17, 2003.

(2) POPCO shall submit a report within one hundred eighty (180) days of a change to the process or information submitted in the Notification of Compliance Status Report per 40 CFR 63.775(f).

(b) <u>Sulfinol Glycol Regeneration System Connected to the Sulfinol Reboiler Heater</u>

(i) *Inspection and Monitoring Requirements (40 CFR 63.773(c)):*

(1) POPCO shall conduct annual inspections of the storage vessels according to Method 21 to demonstrate that the components or connections operate with no detectable emissions. No detectable emissions is defined as emissions less than 500 ppmv (40 CFR 63.772(c)(8)). Inspection results shall be submitted in the Periodic Report.

(2) POPCO shall conduct annual visual inspections for defects that could result in air emissions per District Rule 331.

(ii) *Reporting Requirements (40 CFR 63.775)*:

(1) POPCO shall submit the Periodic Report semiannually beginning August 17, 2003.

(2) POPCO shall submit a report within one hundred eighty (180) days of a change to the process or information submitted in the Notification of Compliance Status Report per 40 CFR 63.775(f).

(c) <u>Ancillary Equipment and Compressors in VHAP Service</u>

(i) For ancillary equipment (as defined in 40 CFR 63.761) and compressors at POPCO subject to 40 CFR 63 subpart HH, POPCO shall comply with the requirements for equipment leaks specified in 40 CFR 63.769.

(ii) *Recordkeeping requirements (40 CFR 63.774(b)):*

(1) All applicable recordkeeping requirements from 40 CFR 63.774 shall be maintained. POPCO shall retain at least five (5) years of information as required in this section. The most recent twelve (12) months of records shall be kept in a readily accessible location; the previous four (4) years may be retained offsite. Records may be maintained in hard copy or computer-readable form (40 CFR 63.774(b)(1)).

(iii) *Reporting Requirements (40 CFR 63.775):*

(1) POPCO shall submit the Periodic Report semiannually beginning August 17, 2003. All applicable recordkeeping requirements from 40 CFR 63.774 shall be included in the Periodic Report.

(2) POPCO shall submit a report within one hundred eighty (180) days of a change to the process or information submitted in the Notification of Compliance Status Report per 40 CFR 63.775(f).

(d) <u>GPU Glycol Dehydration Unit</u>

(i) *Inspection and Monitoring Requirements (40 CFR 63.773(c)):*

(1) POPCO shall conduct annual inspections of the storage vessels according to Method 21 to demonstrate that the components or connections operate with no detectable emissions. No detectable emissions is defined as emissions less than 500 ppmv (40 CFR 63.772(c)(8)).Inspection results shall be submitted in the Periodic Report.

(2) POPCO shall conduct annual visual inspections for defects that could result in air emissions per District Rule 331.

(ii) *Reporting Requirements (40 CFR 63.775):*

(1) POPCO shall submit the Periodic Report semiannually beginning August 17, 2003. All applicable recordkeeping requirements from 40 CFR 63 775 shall be included in the Periodic Report.

(2) POPCO shall submit a report within one hundred eighty (180) days of a change to the process or information submitted in the Notification of Compliance Status Report per 40 CFR 63.775(f).

(e) <u>General Recordkeeping</u>

(i) *POPCO shall maintain records of (40 CFR 63.10(b)(2)):*

(1) The occurrence and duration of each startup, shutdown, or malfunction of operation;

(2) The occurrence and duration of each malfunction of the air pollution control equipment;

(3) Actions taken during periods of startup, shutdown, and malfunction when different from the procedures specified in POPCO's startup, shutdown, and malfunction plan (SSMP);

(4) All information necessary to demonstrate conformance with POPCO's SSMP when all actions taken during periods of startup, shutdown, and malfunction are consistent with the procedures specified in such plan;

(5) All required measurements needed to demonstrate compliance with a relevant standard;

(6) Any information demonstrating whether a source is meeting the requirements for a waiver of record-keeping or reporting requirements under this condition.

(ii) POPCO shall maintain records of SSM events indicating whether or not the SSMP was followed;

(iii) POPCO shall submit a semi-annual startup, shutdown, and malfunction report as specified in 40 CFR 63.10(d)(5). This report is only required if a startup, shutdown, or malfunction occurred during the six (6) month reporting period. The report shall be due by July 30th and January 30th.

B.20 **Emergency Episode Plan.** During emergency episodes, POPCO shall implement the District approved *Emergency Episode Plan* for the POPCO Gas Plant. The content of the plan shall be in accordance with the provisions of Rule 603. [Re: *District Rule 1303, 40 CFR 70.6*]

B.21 **Reciprocating Internal Combustion Engine NESHAP.** ExxonMobil shall comply with the requirements of the RICE NESHAP by the dates specified in the regulation. Prior to making any physical or operational changes to the engines subject to this regulation, ExxonMobil shall obtain an Authority to Construct from the District. [*Re:* 40 CFR 63, Subpart ZZZZ]

9.C *Requirements and Equipment Specific Conditions*

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

Device Type	POPCO ID	District Device No
External Combustion Equipment		
Utility Boiler B-801 A	B-801 A	002350
Utility Boiler B-801 B	B-801 B	002351
Sulfinol TEG Reboiler	E-251	002352
TEG Regenerator Boiler	E-121	002353
Forced Air Furnace	F-A412	008792

(a) Emission Limits: The mass emissions from the Utility Boilers shall not exceed the limits listed in Tables 5.3 and 5.4. Compliance shall be based on the monitoring, recordkeeping and reporting conditions of this permit. In addition to the monitoring, recordkeeping, and reporting conditions of this permit, compliance with the NO_X mass emission limits for the Utility Boilers shall be based on CEMS and annual source testing. In addition, the following specific emission limits apply:

(i) *NO_X and CO Limits* – Except during periods of startup (defined as the time period within 2 hours after a continuous period in which fuel flow to unit is shut off for 30 minutes or longer), the emissions from the Utility Boilers shall not exceed the limits listed below. Compliance shall be based on semi-annual source testing for all pollutants.

Operating Mode	NOx (as NO_2)	CO
Utility Boiler B-801A	30 ppmvd at 3% O_2 or 0.036 lb/MMBtu	100 ppmvd at 3% O_2 or 0.073 lb/MMBtu
Utility Boiler B-801B	30 ppmvd at 3% O_2 or 0.036 lb/MMBtu	100 ppmvd at 3% O_2 or 0.073 lb/MMBtu

(ii) Compliance with the NO_X and CO concentration limits shall take into account dilution of the boiler stack gases with TGU tailgas according to the following formulae:

(1) Adjusted Stack ppmv = Raw Stack ppmv * Stack Flow/(Stack Flow - Tailgas Flow)

(2) Adjusted Stack % O_2 = Raw Stack %O_2 * Stack Flow/(Stack Flow - Tailgas Flow)

(3) ppmv (@3% O_2) = Adjusted Stack ppmv * (20.95-3.0)/(20.95- Adjusted Stack %O_2)

(iii) All heat content data shall be higher heating value (HHV) based. Stack flows and tailgas flows shall be determined on a wet basis.

(iv) If no tailgas is present in either Boiler A or Boiler B, then emissions for the boiler without tailgas shall not exceed the following limits:

(1) Emissions of NO_x shall not exceed 1.48 lb/hr.

(2) Emissions of SOx shall not exceed 0.11 lb/hr

(v) If tailgas is present in either Boiler A or Boiler B, then emissions for the boiler with tailgas shall not exceed the following limits:

(1) Emissions of NO_x shall not exceed 1.68 lb/hr.

(2) Emissions of SO_x shall not exceed 5.55 lb/hr

(vi) Combined emissions for both boilers shall not exceed the following limits:

(1) Emissions of NO_x shall not exceed 3.15 lb/hr.

(2) Emissions of SO_x shall not exceed 5.67 lb/hr

(b) <u>Operational Limits:</u> The following operational limits apply to the external combustion equipment as specified:

(i) *Utility Boiler Fuel Gas Sulfur Limit* - POPCO shall use plant fuel gas at all times for the Utility Boilers. The plant fuel gas shall not contain total sulfur compounds in concentrations exceeding 24 ppmvd (calculated as H_2S at standard conditions). Compliance with this condition shall be based on monitoring, recordkeeping and reporting requirements of this permit.

(ii) *TEG Reboiler/Air Furnace Fuel Gas Sulfur Limit* - POPCO shall use PUC quality natural gas at all times for the TEG Reboilers and the Air Furnace. The concentration of:

(1) Hydrogen sulfide in the gas shall not exceed 0.25 grains per hundred standard cubic feet (4 ppmvd as H_2S);

(2) Total sulfur in the gas shall not exceed 5 grains per hundred standard cubic feet (80 ppmvd calculated as H_2S).

(3) Compliance with this condition shall be based on monitoring, recordkeeping and reporting requirements of this permit.

(iii) *Utility Boiler - Fuel Gas Usage Limits* - POPCO shall comply with the following usage limits (HHV based):

(1) Utility Boiler B-801A: 41.000 MMBtu/hr; 984 MMBtu/day; 89,790 MMBtu/quarter; 359,160 MMBtu/year

(2) Utility Boiler B-801B: 41.000 MMBtu/hr; 984 MMBtu/day; 89,790 MMBtu/quarter; 359,160 MMBtu/year

(a) Compliance shall be based on the monitoring, recordkeeping and reporting requirements of this permit. POPCO shall use the most recent heating value analysis in conjunction with the fuel gas meter reading to calculate the heat input to each boiler.

(iv) *Utility Boiler –TGU Tailgas Input Limits* - POPCO shall comply with the following usage limits (HHV based):

(1) TGU Tailgas to Boilers B-801A/B: 5.620 MMBtu/hr; 135 MMBtu/day; 12,308 MMBtu/quarter; 49,231 MMBtu/year Compliance shall be based on the monitoring, recordkeeping and reporting requirements of this permit. POPCO shall use the most recent heating value analysis in conjunction with the TGU tailgas meter readings to calculate the heat input to the boilers.

(v) *Steam Injection Operating Limits* –The following conditions describing steam injection into Utility Boilers B-801A and B-801B shall apply to comply with the emission limits of this permit:

(1) Injection of 50 psig steam shall be limited to no more than 650 lb/hr, as verified by an equivalent steam delivery pressure to the Utility Boiler burner steam injection wand of no more than 10 psig;

(c) Monitoring: The Utility Boilers in this section are subject to all the monitoring requirements listed in Table 4.10 and District Rule 342.E, G and I. The source test methods in Rule 342.H shall be used. In addition, POPCO shall:

(i) *Utility Boiler Fuel Meters* – The amount of fuel gas combusted in each Utility Boiler shall be measured using a permanently installed District-approved in-line fuel meter. POPCO shall obtain written District approval prior to implementing any changes to the meter configuration.

(ii) *TGU Tailgas Meters* – The volume of TGU tailgas directed to each Utility Boiler shall be metered using District-approved meters.

(iii) *Source* Testing – POPCO shall source test the Utility Boilers according to the *Source Testing* condition in this permit. More frequent testing may be required, as determined by the District, if full operating loads have not been achieved.

(iv) *CEMS* – POPCO shall monitor the emission and process parameters listed in Table 4.10 for the life of the project POPCO and shall maintain and operate continuous in stack monitoring equipment for the Utility Boilers for emissions of nitrogen oxides (as NO_2) and sulfur oxides (as SO_2) consistent with District Rule 328, the District-approved CEMS Plan for the POPCO facility and Table 4.10.

(v) *Boiler Fuel Gas Data* – POPCO shall monitor the total sulfur content of the plant fuel gas used in the Utility Boilers by (a) weekly sorbent tube (or equivalent District-approved) readings of hydrogen sulfide, and (b) quarterly gas samples for third party lab analyses for hydrogen sulfide, total reduced sulfur compounds and higher heating value (HHV). The readings from the weekly sorbent tubes shall be adjusted upward to take into account the non-hydrogen sulfide reduced sulfur compounds in the fuel gas from the last analysis. The District may require more frequent lab analyses upon request. POPCO shall utilize the District-approved *Fuel Gas Sulfur and HHV Reporting Plan.*

(vi) *Sales (PUC Quality) Fuel Gas Data* – POPCO shall continuously monitor the hydrogen sulfide content (as H_2S) of the sales (PUC Quality) fuel gas used in the TEG Reboilers and Forced Air Furnace using one District-approved monitor. This monitor shall adhere to the District's CEMS Protocol document and District Rule 328 requirements regarding CEMS. On a quarterly basis, POPCO shall take gas samples for third party lab analyses for: hydrogen sulfide content, total reduced sulfur compounds and the higher heating value (HHV). The District may require more frequent lab analyses upon request. POPCO shall utilize the District-approved *Fuel Gas Sulfur and HHV Reporting Plan*.

(vii) *TGU Tailgas Data* – POPCO shall monitor the higher heating value of the TGU tailgas combusted in the Utility Boilers by taking quarterly gas samples for third party lab analyses for the higher heating value (HHV). The District may require more frequent lab analyses upon request. POPCO shall utilize the District-approved *Fuel Gas Sulfur and HHV Reporting Plan*.

(viii) *Steam Injection* – POPCO shall monitor the steam delivery pressure to Utility Boilers B-801A and B-801B burner steam injection wand using a dedicated pressure gage.

(d) Recordkeeping: The Utility Boilers listed in this section are subject to the recordkeeping requirements listed in Table 4.10 and Rule 342.I. POPCO shall record the emission and process parameters listed in Table 4.10. In addition, POPCO shall:

(i) *Utility Boiler Fuel Gas Use* - The total amount of boiler fuel gas combusted in each Utility Boiler shall be recorded on a daily, quarterly and annual basis in units of standard cubic feet. Heat input to each boiler from plant fuel gas on a daily, quarterly, and annual basis shall be calculated after each gas HHV analysis in a million BTUs (x.xxx) format.

(ii) *TGU Tailgas Input* - The total amount of TGU tailgas combusted in each Utility Boiler shall be recorded on a daily, quarterly and annual basis in units of standard cubic feet. The heat input to each boiler from TGU tailgas on a daily, quarterly, and annual basis shall be calculated after each gas HHV analysis in a million BTUs (x.xxx) format.

(iii) *Boiler Fuel Gas Data* - A logbook or electronic file shall be maintained that records the weekly sorbent tube readings and the quarterly lab analysis results. The logbook or electronic file shall also store as backup documentation, a photocopy picture of each sorbent tube and the laboratory reports, including chain of custody forms.

(iv) *Sales (PUC Quality) Fuel Gas Data* - A logbook or electronic file shall be maintained that records the highest weekly H_2S analyzer readings and the quarterly lab analysis results. The logbook shall also store as backup documentation, a copy of the analyzer data and the laboratory reports, including chain of custody forms.

(v) *TGU Tailgas Data* – A logbook or electronic file shall be maintained that records the quarterly lab analysis results. The logbook shall also store as backup documentation, a copy of the laboratory reports, including chain of custody forms.

(vi) *Steam Injection* - A logbook or electronic file shall be maintained that records all instances of steam gas pressure exceeding 10 psig.

(vii) *Maintenance and Calibration Logs* – A logbook or electronic file shall be kept that documents all maintenance and calibration performed for the boilers, emission control systems, fuel flow meters and other associated monitoring equipment.

(viii) *H_2S Monitors* – POPCO shall maintain records as required by District Rule 328 for the sales gas CEMS analyzer according to the District-approved CEMS Plan for the POPCO facility and Table 4.12.

(e) Reporting: The equipment listed in this section are subject to all the reporting requirements listed in District Rule 342.J. 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 9047, PTO 8092, PTO 9215, ATC 9693, ATC/PTO 10932]*

C.2 **Thermal Oxidizer.** The following equipment is included in this emissions unit category:

Device Type	POPCO ID	District Device No
Thermal Oxidizer	*A-803*	*007065*
Planned Purge/Pilot Gas		102614
Planned Compressor Seal Leakage		102615
Planned Baseline System		107202
Planned Startups/Maintenance		102616
Unplanned Other - Miscellaneous		108195
Unplanned Other - SRU Failure		102617

(a) Emission Limits: Mass emissions from the flare relief system listed above shall not exceed the limits listed in Tables 5.3 and 5.4. Notwithstanding the above, and consistent with District P&P 6100.004, the short-term emission limits for *Planned - Other* and *Unplanned - Other* flaring categories in Table 5.3 shall not be considered enforceable limits. Compliance with this condition shall be based on the monitoring, recordkeeping and reporting conditions in this permit.

Continuous planned flaring emissions are permitted for the hydrocarbon flare header at levels above the minimum detection limit of the hydrocarbon flare meter due to baseline system leakage. Continuous planned flaring is permitted for the Acid Gas flare header at levels greater than one-half the minimum detection limit for the acid gas flare header, but less than the detection limit of that meter, due to compressor seal leakage and baseline system leakage. Other than flare purge and pilot, this is the only continuous flaring allowed under this permit.

(b) Operational Limits:

(i) *Flaring Volumes* - Flaring volumes from the purge, pilot, continuous, planned other and unplanned other events shall not exceed the following volumes:

Flare Category	Hourly (10^3 scf)	Daily (10^3 scf)	Quarterly (10^6 scf)	Annual (10^6 scf)
Purge	0.200	4.800	0.438	1.752
Pilot	2.000	48.000	4.380	17.520
Continuous – HC/AG Header, Baseline System Leakage [f]	0.600	14.400	1.314	5.256
Continuous – AG Header Compressor Seal Leakage [g]	0.311	7.464	0.681	2.724
Planned Other [h]			32.680	130.720
Unplanned Other - Miscellaneous			0.75	1.50
Unplanned Other - SRU Failure [i]			0.00148	0.00148

(ii) The hourly limits shall be enforced on an hourly basis and the daily limits shall be enforced on a daily basis.

(iii) *Flare Purge/Pilot Fuel Gas Sulfur Limits* - The pilot fuel gas combusted in the thermal oxidizer shall not exceed a total sulfur content of 24 ppmv. The purge fuel gas combusted in the thermal oxidizer shall meet the following:

(1) Hydrogen sulfide in the fuel gas shall not exceed 0.25 grains per hundred standard cubic feet (4 ppmvd as H_2S);

(2) Total sulfur in the fuel gas shall not exceed 5 grains per hundred standard cubic feet (80 ppmvd calculated as H_2S).

(3) Compliance with this condition shall be based on monitoring, recordkeeping and reporting requirements of this permit.

(iv) *Planned Continuous Flaring Sulfur Limits* - The sulfur content of all gas burned as continuous flaring in the hydrocarbon flare header (i.e., baseline system leakage) shall not exceed 239 ppmv total sulfur. The sulfur content of all gas burned as continuous flaring in the acid gas flare header (i.e., compressor seal leakage and baseline system leakage) shall not exceed 239 ppmv total sulfur. Compliance shall be based on the monitoring, recordkeeping and reporting requirements of this permit.

(v) *Rule 359 Technology Based Standards* - POPCO shall comply with the technology based standards of Section D.2 of Rule 359. Compliance shall be based on monitoring and recordkeeping requirements of this permit as well as District inspections.

(vi) *Flaring Modes* - POPCO shall operate the thermal oxidizer consistent with District P&P 6100.004 (*Planned and Unplanned Flaring Events*). Section 4.5.2 of this permit defines each of the modes and flare categories and is specific to this facility.

[f] *Baseline System Leakage* shall be measured and calculated for each flare header using District-approved methods using the following calculations: (i) HC Flare Header: BSL_{HC} = (total aggregate HC flare flow) – (HC header purge flow) – (HC flare event flow); (ii) AG Flare Header: BSL_{AG} = (total aggregate AG flare flow) – (AG header purge flow) – (compressor seal leakage flow) - (AG flare event flow).

[g] *Compressor Seal Leakage* shall be measured and calculated using District-approved methods.

[h] *Planned Other* flaring only includes startup and maintenance events. This category does not include maintenance activities (and associated startups) due to equipment failure, breakdown or other non-planned event or activity.

[i] *Unplanned Other* - SRU Failures is limited to 1480 scf/event, with an event limited to 28 seconds

If POPCO is unable to comply with the infrequent planned flaring limit of 4 events per year from the same processing unit or equipment type, then an ATC permit application shall be submitted to incorporate those emissions in the short-term (hourly and daily) emissions of Table 5.3.

(vii) *Rule 359 Planned Flaring Target Volume Limit* - Pursuant to Rule 359, POPCO shall not flare more than 18.20 million standard cubic feet per month during planned flaring events.

(viii) *Rule 359 Flare Minimization Plan* - POPCO shall implement the requirements of the District-approved Rule 359 *Flare Minimization Plan*.

(ix) *BACT* – For increases in Planned Flaring due to baseline system leakage, compressor seal leakage and purge gas, POPCO shall: (1) use purge gas that meets sales gas quality; (2) properly maintain the thermal oxidizer combustors; (3) use sales gas quality gas in the compressors; and, (4) limit the sulfur content of the purge gas to 80 ppmv (as H_2S) and the hydrogen sulfide content to 4 ppmv. POPCO shall implement the District-approved *Thermal Oxidizer Combustor Maintenance Plan* documenting the maintenance procedures and schedules used comply with item (2) above, for the life of the POPCO facility. The District-approved Plan is an enforceable part of this permit.

(x) *Planned Flaring Hourly Limit* – No planned flaring activity in any one-hour shall exceed a rate of 0.76 MMSCF, or generate the equivalent of 900 MMBtu of gross heat release in the flare. The 0.76 MMSCF volume limit may only be exceeded in any hour if the 900 MMBtu gross heat release limit is not also exceeded. The flared gas heating value for each hour of planned flaring shall be obtained by POPCO, using a District-approved analytic technique, to utilize the 900 MMBtu limitation. Further, planned flaring activities for startups and shut downs shall not exceed a continuous uninterrupted duration of 24 hours.

(xi) *Unplanned Flaring Requirements* – The sulfur content of all gas burned during *Unplanned Other - Miscellaneous* flaring events shall not exceed 239 ppmv total sulfur. The above requirement shall not apply to SRU –Failures that meet the *Unplanned Other- SRU Failure* volume limits in 9.C.2(b)(i) above. Compliance shall be based on the monitoring, recordkeeping and reporting requirements of this permit.

(1) POPCO shall obtain breakdown and/or variance relief pursuant to District Regulation V for all unplanned flaring events outside of the allowances for *Unplanned Other - Miscellaneous* and *SRU Failure* categories. (N<u>ote: the requirements of Regulation V must be fully satisfied to obtain this relief</u>). In no case shall such unplanned flaring outside these two permitted categories (Item #166, A-803 and Exhibit C-2 to POPCO's PTO application dated October, 1983) occur for more than one continuous hour nor more than a total of two hours in any 24-hour period and the worst case emergency flare event shall not exceed 2.49 MMSCF/hr.

(xii) The flare and all associated relief systems shall be properly operated and maintained to minimize emissions to the maximum extent feasible. Flaring operations due in whole or in part to the lack of equipment repair or maintenance are prohibited.

Except as expressly provided above, the operation of the flare shall comply with the Flaring Analysis of October 1983.In addition, flare operations shall comply with all applicable District Rules and Regulations.

(xiii) *Tailgas Incineration at ZTOF* – POPCO may incinerate no more than 5.620 MMBtu/hr of treated tail gas in the thermal oxidizer. Treated tail gas may be incinerated in the thermal oxidizer for no more than 8 hours/day, 16 hours/quarter, and 64 hours/year.

(c) Monitoring: The equipment in this section is subject to all the monitoring requirements listed in Table 4.11 and District Rule 359.G. The test methods in Rule 359.E. shall be used. POPCO shall monitor the emission and process parameters listed in Table 4.11 for the life of the project. In addition, the following monitoring requirements apply to the flare relief system:

(i) *Flare Event Volumes* - The volumes of gas flared during each event shall be monitored by use of District-approved flare header flow meters. The meters shall be calibrated and operated consistent with POPCO's *Process Monitor Calibration and Maintenance Plan*. An event is defined as an hourly average flow rate in excess of the event threshold listed below. An event is determined on a clock-hour basis. During a flaring episode, any subsequent flows recorded by the flare header flow meter within 5 minutes after the flow rate drops below the minimum detection level of the meter shall be considered as part of the event.

Flare Header	Event Threshold (scfh)	Meter Minimum Detection Level (scfh)
Hydrocarbon	500	45
Acid Gas	500	490

(1) All flaring not classified as an event pursuant to the above definition shall be aggregated as a single hourly, daily, quarterly and annual volume and recorded in the *Continuous – HC/AG Header, Baseline System Leakage* flaring category. Continuous flaring greater than the event thresholds listed above is prohibited for any flaring category

(ii) *Purge/Pilot Gas* - POPCO shall monitor the total sulfur and hydrogen sulfide content of the sales gas used in the thermal oxidizer as purge and pilot gas by (a) on an in-line continuous hydrogen sulfide analyzer for the POPCO sales, and (b) quarterly gas samples for third party lab analyses for hydrogen sulfide, total reduced sulfur compounds and higher heating value (HHV). The readings from the analyzer shall be adjusted upward to take into account the average non-hydrogen sulfide reduced sulfur compounds in the fuel gas from the last analysis. The District may require more frequent lab analyses upon request. POPCO shall utilize the District-approved *Fuel Gas Sulfur and HHV Reporting Plan*. (conditionally approved 10/29/98).

(iii) *Pilot Gas Flow Meter* - POPCO shall continuously monitor the combined pilot gas flow to the thermal oxidizer using a District-approved meter.

(iv) *Hydrocarbon and Acid Gas Meters* – POPCO shall continuously monitor the flare gas volumes in the hydrocarbon and acid gas flare headers using the District-approved *Flare Volume Metering System* meters (Re: ATC 9487). The Thermal Oxidizer Pilot Fuel Gas metering system output and all the Hydrocarbon and Acid

Gas flow metering system outputs will be tied into the facility's Distributed Control System (DCS) control/monitoring system. The DCS will be capable of tracking instantaneous flows, as well as recording cumulative flows measured by the above-specified meters. Six-minute average instantaneous flow rates (in units of scfh) and one-hour average flow rates shall be telemetered to the District's DAS.

(v) *Meter Calibrations* – The four (4) Flare Volume Meters and the Thermal Oxidizer Pilot Fuel Gas Meter shall be calibrated and maintained in accordance with the meter manufacturer's procedures and frequency. All meters shall be calibrated at least once every six-calendar months, not to exceed seven calendar months between calibrations.

(vi) *Compressor Seal Meters* – POPCO shall operate the District-approved gas flow meters for measuring compressor seal leakage flow rates.

(vii) *Purge Gas Flow Meters* – POPCO shall operate the District-approved flow indicator meters for measuring all purge gas flow to the hydrocarbon and acid gas flare headers.

(viii) *Data for Acid Gas Header Flaring Events* – During any flare event in the Acid Gas flare header system, measurement of the hydrogen sulfide content of the flared acid gas shall be measured by sorbent tube (or other District-approved method) within one hour of flare event initiation, and hourly thereafter for extended flaring events. For each flare event, a record of the date, start time, duration, hydrogen sulfide content(s), assumed flared gas high heating value in Btu/scf and the reason for the Acid Gas flaring event shall be kept.

(ix) *Data for Hydrocarbon Header Flaring Events* – During any flare event in the Hydrocarbon flare header system measurement of the hydrogen sulfide content of the flared hydrocarbon gas shall be measured by sorbent tube (or other District-approved method) within one hour of flare event initiation, and hourly thereafter for extended flaring events. For each flare event, a record of the date, start time, duration, hydrogen sulfide content(s), assumed flared gas high heating value in Btu/scf and the reason for the hydrocarbon-flaring event shall be kept.

(x) *Flaring Sulfur Content Correction* – During non-flaring events, POPCO shall sample, on a weekly basis, the hydrocarbon and acid gas flare headers to determine the hydrogen sulfide content using sorbent tubes. On an annual basis, gas samples shall be obtained from each flare header for third party lab analyses of hydrogen sulfide and total reduced sulfur compounds. To correct for the total sulfur content, POPCO shall add the prior year's non-hydrogen sulfide reduced sulfur compounds analysis result to the sorbent tube readings. This data shall be used to determine SO_x emissions associated with non-event flaring. POPCO shall perform additional testing of the sulfur content and hydrogen sulfide content, using approved test methods, as requested by the District.

(d) Recordkeeping: The equipment listed in this section is subject to all the recordkeeping requirements listed in Table 4.11 and Rule 359.H. POPCO shall record the emission and process parameters listed in Table 4.11. In addition, the following recordkeeping conditions apply to the thermal oxidizer:

(i) *Flare Event Logs* - All flaring events shall be recorded in a log. The log shall include: date; duration of flaring events (including start and stop times); quantity of gas flared; total sulfur content; hydrogen sulfide content; high heating value; reason for each flaring event, including the processing unit or equipment type involved; the total heat input (MMBtu) per event; the type of event as defined by District P&P 6100.004 (e.g., Planned - Continuous, –Planned – Frequent, Planned – Infrequent, etc.); and, the District Breakdown and/or Variance number for each Unplanned Flaring event. The volumes of gas combusted and resulting mass emissions of all criteria pollutants for each type of event shall also be summarized for a cumulative summary for each day, quarter and year.

(ii) *Pilot Gas Volumes/Mass Emissions* - The total volume of pilot fuel gas and resulting mass emissions of all criteria pollutants combusted in the thermal oxidizer shall be recorded on a daily, weekly, quarterly and annual basis. POPCO may petition the District to eliminate the requirement for daily recordkeeping. The petition shall include all daily records from the prior year and POPCO's analyses showing that weekly records provide an equivalent method of determining compliance with the daily volume limits. Upon approval of the petition by the District, the weekly data shall be used be used to record and report daily gas volumes and emissions.

(iii) *Purge Gas Volumes/Mass Emissions* - The volume of purge fuel gas and resulting mass emissions of all criteria pollutants combusted in the thermal oxidizer shall be recorded on a weekly, quarterly and annual basis. POPCO may petition the District to revise the recordkeeping frequency. The petition shall include all weekly records from the prior year and POPCO's analyses showing that monthly records provide an equivalent method of determining compliance with the daily volume limits. Upon approval of the petition by the District, the monthly data shall be used to record and report daily gas volumes and emissions.

(iv) *Compressor Seal Leakage Gas Volumes/Mass Emissions* - The volume of compressor seal leakage and resulting mass emissions of all criteria pollutants combusted in the thermal oxidizer shall be recorded on a weekly, quarterly and annual basis. POPCO may petition the District to eliminate the requirement for weekly recordkeeping. The petition shall include all weekly records from the prior year and POPCO's analyses showing that monthly records provide an equivalent method of determining compliance with the daily volume limits. Upon approval of the petition by the District, the monthly data shall be used to record and report daily gas volumes and emissions.

(v) *Baseline System Leakage Gas Volumes/Mass Emissions* - The volume of baseline system leakage [j] gas in both the hydrocarbon and acid gas headers and resulting mass emissions of all criteria pollutants combusted in the thermal oxidizer shall be recorded on a daily, quarterly and annual basis. POPCO shall use District-approved methods to measure and calculate the baseline system leakage in each flare header. The basis for each baseline system leakage volume calculation shall be clearly documented.

[j] As defined in §9.C.2.(b)(i)

(vi) *Hydrocarbon and Acid Gas Meters (Telemetered Data)* – POPCO shall telemeter both 6-minute average instantaneous and clock-hour average instantaneous flow rates (in units of scfh) to the District's DAS.

(vii) *Maintenance and Calibration Logs* – Maintenance and calibration logs of all the Flare Volume Metering system meters and Thermal Oxidizer Pilot Fuel Gas Metering system meters shall be kept on site by the permittee and made available for District inspection upon request.

(viii) *Rule 359 Planned Monthly Volumes* – POPCO shall record in a log the total planned flaring volumes for each month.

(e) Reporting: The equipment listed in this section are subject to all the reporting requirements listed in District Rule 359.H. 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: District Rules 359 and 1303, PTO 8092, ATC 9047, ATC 9487, ATC 9047-4, 40 CFR 70.6*)

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

Device Type	**POPCO ID**	**District Device No**
Fugitive Components - Gas/Light Liquid		
Valves - Unsafe		007070
Valves - Bellows / Background ppmv		007066
Valves - Category B		007068
Valves - Category C		106397
Valves - Category F		009712
Valves - Category J		007067
Flanges/Connections - Accessible/Inaccessible		007071
Flanges/Connections - Unsafe		007074
Flanges/Connections - Category B		007072
Flanges/Connections - Category C		007073
Flanges/Connections - Category F		133978
Compressor Seals - To VRS		007079
PSV - To Atm/Flare		007075
Pump Seals - Single		007081
Pump Seals - Dual/Tandem		007080

(a) Emission Limits: Mass emissions from the gas/condensate service (sub-total) components listed above shall not exceed the limits listed in Tables 5.3 and 5.4. Compliance with this condition shall be based on actual component-leak path counts as documented through the 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 331.D and E. Compliance with these limits shall be assessed through compliance with the monitoring, recordkeeping and reporting conditions in this permit. In addition, POPCO shall meet the following requirements:

(i) *VRS Use* - The vapor recovery and gas collection (VR & GC) systems at the POPCO Gas Plant shall be in operation when equipment connected to these systems are in use. These systems include piping, valves, and flanges associated with the VR & GC systems. The VR & GC systems shall be maintained and operated to minimize the release of emissions from all systems, including pressure relief valves and gauge hatches.

(ii) *I&M Program* - The District-approved I&M Plan for POPCO {*POPCO I&M Manual for Control of Reactive Organic Compound Emissions}* shall be implemented for the life of the project. The *I&M Plan* shall be consistent with the provisions of Tables 4.1 through 4.4 of this permit, District Rule 331, BACT requirements, NESHAP Subpart HH (*National Emission Standards for Hazardous Air Pollutants from Oil and Natural Gas Production Facilities*) and NSPS Subpart KKK (*Standards of Performance for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants*). Furthermore, POPCO shall implement a BACT component identification system, including the use of component tagging, recordkeeping and reporting. The *I&M Plan*, and any subsequent District approved revision, is incorporated by reference as an enforceable part of this permit.

(iii) *Leakpath Count* - The total component-leakpath count listed in POPCO's most recent I&M component-leakpath inventory shall not exceed the total component-leakpath count listed in Table 5.1 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.

(iv) *Venting* - All routine venting of hydrocarbons shall be routed to either a compressor, vapor recovery, flare header or other District-approved control device.

(v) *BACT* - POPCO shall apply BACT, as defined in Tables 4.1 and 4.2 through 4.4, to those component-leakpaths in hydrocarbon service installed pursuant to ATC 9047, ATC 9675, ATC 9047-2, ATC 9047-4, and ATC/PTO 11130 for the life of the project. This requirement applies to components subject to the *de minimis* exemption of Rule 202 as well as projects that do not trigger the BACT threshold of Rule 802 and equivalent routine replacements.

(vi) *NSPS KKK* - For all permitted and future component-leakpaths in hydrocarbon service and shown not to be in VHAP service, POPCO shall comply with the emission standard requirements of 40 CFR 60.632, as applicable.

(vii) *NESHAP HH* - For all permitted and future component-leakpaths in VHAP service for 300 hours or more per year, POPCO shall comply with the emission standard requirements of 40 CFR 63.764, as applicable. Each piece of ancillary equipment and compressors are presumed to be in VHAP service unless an owner or operator demonstrates that the process fluid in contact with the equipment can be reasonably expected to never exceed a VHAP content of 10.0 percent by weight using either test method 19 of 40 CFR Part 60 appendix A or ASTM D6420-99. POPCO will record and clearly identify, all ancillary equipment and compressors in VHAP service as part of the Fugitive Hydrocarbon Emissions Component inventory.

(viii) *Category B Requirements.* Component-leakpaths monitored quarterly at less than 500 ppmv shall achieve a mass emission control efficiency of 85 percent. Category B component-leakpaths are defined as components subject to enhanced fugitive inspection and maintenance programs for which screening values are also maintained at or below 500 ppmv as methane, monitored per EPA Reference Method 21. Category B component-leakpaths also include component-leakpaths associated with closed vent systems (e.g., vapor recovery systems, and Subpart Kb and Subpart HH vessels) for which screening values are maintained at or below 500 ppmv as methane, monitored per EPA Reference Method 21. For Category B components, screening values above 500 ppmv shall trigger the Rule 331 repair process per the minor leak schedule.

(ix) *Category C Requirements.* Component-leakpaths monitored quarterly at less than 100 ppmv shall achieve a mass emission control efficiency of 87 percent. Category C 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 such Category C components, screening values above 100 ppmv shall trigger the Rule 331 repair process per the minor leak schedule.

(x) *Category F Requirements.* Low-emitting design component-leakpaths monitored quarterly at less than 100 ppmv shall achieve a mass emission control efficiency of 90 percent. Category F component-leakpaths are subject to BACT per Rule 331 for which screening values are maintained at or below 100 ppmv as methane, monitored per EPA Reference Method 21. For such Category F components, screening values above 100 ppmv shall trigger the Rule 331 repair process per the minor leak schedule.

(xi) *Category J Requirements.* Low-emitting design component-leakpaths monitored quarterly at less than 500 ppmv shall achieve a mass emission control efficiency of 90 percent. Category J component-leakpaths are subject to BARCT per ATC 9047 and Rule 331 for which screening values are maintained at or below 500 ppmv as methane, monitored per EPA Reference Method 21. For such Category J components, screening values above 500 ppmv shall trigger the Rule 331 repair process per the minor leak schedule.

(xii) *Fugitive Emission Component BARCT Requirements* – In addition to the requirements specified in ATC 9047 to retrofit existing valves and connections during the expansion construction window, POPCO shall accomplish the following *Best Available Retrofit Control Technology* program to reduce and minimize fugitive hydrocarbon emissions from existing valves and connections that were permitted and/or were in service prior to the issuance of ATC 9047.

(1) Monitor all existing safe-to-monitor valves locations (whether retrofit to Category F or remaining a Category B valve) to a 500 ppmv minor leak threshold. Rule 331 protocol for repairing, removing from service or replacing minor leakers shall apply at this 500 ppmv threshold for Category B and J valves, and at the 100 ppmv threshold for the Category F valves;

(2) If a leaking Category B and/or Category J valve cannot be repaired to less than 500 ppmv, or is removed from service pursuant to Rule 331 protocols, that valve shall be irrevocably subject to retrofit as a Category F valve. The Category F retrofit shall be accomplished within one year from the date the repair does not restore the Category B valve to less than 500 ppmv leakage; and

(3) All Rule 331 BACT triggers apply to any valve not reduced to below 1,000 ppmv leakage.

(xiii) *Pump Seals* – Any pump installed in hydrocarbon service shall be equipped with a double mechanical seal.

(c) Monitoring: The equipment listed in this section are subject to all the monitoring requirements listed in District Rule 331.F, NESHAP Subpart HH and NSPS Subpart KKK as applicable. The test methods in Rule 331.H, NESHAP Subpart HH and NSPS Subpart KKK shall be used, when applicable.

(i) *ERCs for Platform Heritage Low/Intermediate Pressure and High Pressure Projects* **-** POPCO shall perform quarterly monitoring on a minimum of 434 standard (i.e., non-bellows seal and non-low emissions) valves and a minimum of 1,302 standard flanges/connections at 100 ppmv leak detection threshold in order to generate 0.263 tpq of ROC ERCs of the total required for projects permitted by ATC 11132. These components will be listed in a separate table in POPCO's I&M Plan. POPCO shall replace any component on the list with a replacement if the component is no longer in hydrocarbon service. The District shall be notified, in writing, of all such replacements within ninety (90) days after the replacement. The notification shall include complete equipment description information equivalent to the table in POPCO's District approved I&M Plan and the reason for the replacement. Subsequent I&M records and reports shall include the replacement component(s).

(d) Recordkeeping: The equipment listed in this section is subject to all the recordkeeping requirements listed in District Rule 331.G, NESHAP Subpart HH and NSPS Subpart KKK. In addition, POPCO shall:

(i) *I&M Log* **-** POPCO 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; and, a record of component repair actions including dates of component re-inspections.

For the purpose of the above paragraph, a leaking component is any component that exceeds the applicable limit:

(1) greater than 1,000 ppmv for minor leaks under Rule 331 (includes Accessible/Inaccessible components and Category A components);

(2) greater than 100 ppmv for components subject to current BACT (includes Bellows, Category F and Category G)

(3) greater than 100 ppmv for components subject to enhanced fugitive inspection and maintenance programs (Category C and Category E)

(4) greater than 500 ppmv for components subject to BARCT per ATC 9047 and/or enhanced fugitive inspection and maintenance programs (Category B, Category D, and Category J)

(ii) *BARCT* – POPCO shall record in a log all components that have been retrofit with BARCT per the requirements of 9.C.3.b(xi) above.

(iii) *Enhanced I&M* - For the 434 valves and 1,302 flanges/connections monitored quarterly at 100 ppmv as required by DOI 0034 and ATC/PTO 11130, maintain a record of information concerning leaks and repairs to include plant, P&ID number, tag number, component, measured emission rates (ppmv and drop-per-minute), date inspected, date of repair, days to repair, and re-inspection data and results. Further, maintain on a quarterly basis a record that all the valves were monitored in accordance with Permit Condition 9.C.3(c) above. The data will be made available to the District upon request.

(iv) *BARCT* **-** For valves monitored at 500 ppmv per ATC 9047, maintain a record of information concerning leaks and repairs to include plant, P&ID number, tag number, component, measured emission rates (ppmv and drop-per-minute), date inspected, date of repair, days to repair, and re-inspection data and results. Further, maintain on a quarterly basis a record that all the valves were monitored in accordance with Permit Condition 9.C.3(c) above. The data will be made available to the District upon request.

(e) Reporting: The equipment listed in this section are subject to all the reporting requirements listed in District Rule 331.G, NESHAP HH and NSPS KKK. POPCO shall provide an updated fugitive hydrocarbon component inventory due to changes in the component list or diagrams within one calendar quarter of any change, per Rule 331.I. 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 9047, ATC 9047-4, ATC 9047-2, ATC/PTO 9471, ATC 9471-1, ATC 9487*, *ATC 9675 PTO 8092, ATC/PTO 11130, PTO 8092-04*]

C.4 **Pigging Equipment.** The following equipment is included in this emissions category:

Device Type	POPCO ID	District Device No
Pigging		
Gas Pig Receiver	A-50	106398

(a) Emission Limits: With the exception of fugitive emissions from valves and connections, there are no permitted emissions allowed due to the opening and closing of the pig receiver. Compliance shall be based on the operational and monitoring limits of this permit.

(b) Operational Limits: Operation of the equipment listed in this section shall conform to the requirements listed in District Rule 325.E. In addition, POPCO shall meet the following requirement:

(i) *Pig Openings* - Access openings to the pig receiver shall be kept closed at all times, except when a pipeline pig is being placed into or removed from the receiver. Prior to opening the pig receiver, POPCO shall completely purge the vessel with nitrogen to eliminate ROC compounds. Purged gases shall be sent to the gas plant's vapor recovery system.

(ii) *Vapor Recovery Use Required* – No pigging receiver gases shall be vented to the atmosphere, for combustion in the Utility Boilers B-801A/B, or for combustion in the thermal oxidizer. All pigging receiver gases shall be vented either to the POPCO gas plant gas processing system, or to the PDS vapor recovery system.

(iii) *Blowdown Rate* – The rate in which gas from the pigging receiver can be blown down to the PDS vapor recovery system shall not exceed 10 SCF/min.

(c) Monitoring: POPCO shall monitor the blowdown rate from the pigging receiver using a District-approved flow meter.

(d) Recordkeeping: For each pigging event, POPCO shall record in a log the date, time, duration of the event, the blowdown rate and where the pigging and purge gases were directed.

(e) Reporting: none.

[*Re: ATC/PTO 9471, ATC 9471-1, ATC 9047]*

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

Device Type	POPCO ID	District Device No
Storage Tanks		
Methanol Tank	T-111	102620
Wastewater Tank	T-601	103103
Wastewater Tank	T-807	103104

(a) Operational Limits: Compliance with these limits shall be assessed through compliance with the monitoring, recordkeeping and reporting conditions in this permit. The methanol tank listed in this section shall meet the requirements of District Rule 326, Sections D.1.a and, D.2.a. Wastewater tank T-601 shall be equipped with a control device that meets the requirements of Rule 325. Wastewater tank T-807 shall meet the requirements of District Rule 325, Section H. In addition, POPCO shall:

(i) *Throughput and Vapor Pressure Limits* – The following tank throughput and vapor pressure limits shall not be exceeded:

Tank Name	Daily (gal/day)	Quarterly (gal/qtr)	Annual (gal/yr)	TVP (psia)
Methanol Tank	10,500	10,500	10,500	1.9

(ii) *Wastewater Tank Carbon Canisters* – The date that carbon was last replaced in each carbon canister shall be visibly marked on the canister. The carbon shall be replaced: (a) within 24-hours when there are indications that the carbon it is not performing as designed (defined as any indication of sulfur compounds emanating from the canister vents), or (b) within one year of the last carbon replacement, whichever is sooner.

(b) Monitoring: POPCO shall:

(i) On a per shipment basis, monitor the amount and vapor pressure of methanol loaded into the tank.

(ii) On a weekly basis, POPCO shall monitor the carbon canister vents for any indication of sulfur compounds emanating from the canister vents.

(iii) Wastewater tank T-601 shall be monitored in accordance with Rule 325.G or other District approved procedures to ensure compliance with the control requirements of Rule 325.

(iv) Wastewater tank T-807 is currently out of service. POPCO shall source test tank T-807 within sixty (60) days of its next use according to the Source Testing condition in this permit, and then every two years thereafter. If any source test does not demonstrate T-807 qualifies for an exemption in Section B of Rule 325, POPCO shall comply with the control requirements of the rule.

(v) The source test condition 9.C.18 shall be adhered to, and the source test plan shall address the following items:

(1) A process description of the tank and the flows into the tank.

(2) Operational conditions during the test, and how they will be representative of worst-case operations/throughputs

(3) The duration of the test and how it will address breathing and working losses

(4) Measurement of tank inflow rates

(5) The procedure for determining lb/hr ROC emission rates

(c) Recordkeeping: The methanol tank listed in this section shall meet the requirements of District Rule 326, Sections I.3, J and K. The wastewater tanks shall meet the requirements of District Rule 325, Section F. In addition, POPCO shall maintain hardcopy records for the information listed below:

(i) For each methanol shipment log: the date of shipment, the product name and supplier, amount of methanol loaded.

(ii) Maintain a copy of each manufacturer's MSDS sheet that document's the vapor pressure of the product. Log all changes in supplier and keep a copy of the MSDS sheet with the log.

(iii) For each carbon canister adsorber, the date of carbon change-out and the quantity and type of carbon recharged to the canister shall be recorded monthly in a log.

(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 *Compliance Verification Reports* condition of this permit. [*Re: PTO 8092, PTO 8092 Mod-03*]

C.6 **Solvent Usage.** The following equipment is included in this emissions unit category:

Device Type	POPCO ID	District Device No
Solvent Usage		
Cleaning/Degreasing		008662

(a) Emission Limits: Mass emissions from the solvent usage shall not exceed the limits listed in Tables 5.3 and 5.4. Compliance shall be based on the recordkeeping and reporting requirements of this permit. For short-term emissions, compliance shall be based on monthly averages.

(b) Operational Limits: Use of solvents for cleaning, degreasing, thinning and reducing shall conform to the requirements of District Rules 317 and 324. Compliance with these rules shall be assessed through compliance with the monitoring, recordkeeping and reporting conditions in this permit and facility inspections. In addition, POPCO shall comply with the following:

(i) *Containers* - Vessels or containers used for storing materials containing organic solvents shall be kept closed unless adding to or removing material from the vessel or container.

(ii) *Materials* - All materials that have been soaked with cleanup solvents shall be stored, when not in use, in closed containers that are equipped with tight seals.

(iii) *Solvent Leaks* - Solvent leaks shall be minimized to the maximum extent feasible or the solvent shall be removed to a sealed container and the equipment taken out of service until repaired. A solvent leak is defined as either the flow of three liquid drops per minute or a discernible continuous flow of solvent.

(iv) *Reclamation Plan* - POPCO shall abide by the procedures identified in the District approved Solvent Reclamation Plan that describes the proper disposal of any reclaimed solvent. All solvent disposed of pursuant to the District approved Plan will not be assumed to have evaporated as emissions into the air and, therefore, will not be counted as emissions from the source. The Plan details 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.

(v) *BACT* – POPCO shall implement the following BACT measures for solvent use at the facility: Use of Low-VOC or water-based solvents, where feasible. POPCO shall provide the District a list of all solvents (both BACT and non-BACT) used at the facility, the properties and general equipment and/or processes the solvents are used on. At the request of the District, POPCO shall provide the District the reason why it is not feasible to use BACT defined solvents for specific situations. This solvent list is hereby incorporated by reference as an enforceable part of this permit.

(c) Monitoring: None

(d) Recordkeeping: POPCO shall record in a log the following on a monthly basis for each solvent used: amount used; the percentage of ROC by weight (as applied); the solvent density; and the amount of solvent reclaimed for District-approved disposal according to the District-approved Solvent Reclamation Plan. Based on the District approved Solvent Reclamation Plan, POPCO shall also record whether the solvent is photochemically reactive; and, the resulting emissions of ROC to the atmosphere in units of pounds per month and the resulting emissions of photochemically reactive solvents to the atmosphere in units of pounds per month. Product sheets (MSDS or equivalent) detailing the constituents of all solvents shall be maintained in a readily accessible location at LFC.

(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 9047-4]

C.7 **Sulfur Recovery Unit/Stretford Tailgas Unit.** The following equipment is included in this emissions unit category:

Device Type	POPCO ID	District Device No
Sulfur Removal Unit		
Claus Plant		105162
Beavon Plant		105183
Stretford Tailgas Unit		105204

(a) Emission Limits: Except for startup and shutdown operations as defined in Table 4.5, mass emissions from the Sulfur Recovery Plant (SRU) and Tailgas Unit shall not exceed the limits specified in Tables 5.3, 5.4 and 5.5. During startup and shutdown operations, the emissions of SO_X (as SO_2) from the SRU listed as (*Combined B-801 A/B Stack Emissions)* shall not exceed the limits as listed in Table 5.5. Compliance shall be based on sliding-one hour readings of 15-minute averages (or less) through the use of process monitors (e.g., fuel use meters) and CEMS; and the monitoring, recordkeeping and reporting condition of this permit. For pollutants without CEMS monitors, the permitted emission factors in Table 5.2 shall be used. In addition, the following specific emission limits apply:

(i) *BACT* – Except during startup and shutdown operations as defined in Table 4.5, the emissions, after control, from the SRU shall not exceed the BACT limits listed below and in Table 4.5 (*BACT. Sulfur Recovery Unit (SRU)*). Compliance shall be based on the use of process monitors, analyzers and CEMS as detailed in Table 4.5 and Table 4.9 as well as annual source testing for all pollutants. Compliance with the efficiency limit shall be based on a twenty-four (24) hour average; compliance with the concentration limits shall be determined via the DAS on a six-minute basis. Compliance for the SO_X shall also be based on the District-approved *Sulfur Removal Efficiency Plan*.

BACT for the Removal of H_2S through the SRU	
Operational Mode	**Removal Efficiency (% by mass as H_2S)**
All SRU Inlet Feed Rates to 60 LTD [k]	✓ The more stringent of: i) 99.9% H_2S by mass across SRU; or ii) 100 ppmvd residual H_2S in Stretford Tailgas;
	and
	✓ No more than 2.89 lb/hr H_2S in Stretford Tailgas [l] (5.44 lb/hr SO_2 equivalent emissions @ boiler stacks)

(ii) *NSPS Subpart LLL* – Per 40 CFR 60.642(b), POPCO shall comply with the SO_2 emission reduction efficiencies as listed below and in Table 2 of the Subpart. Compliance with this Subpart shall be based on the monitoring, recordkeeping and reporting requirements of this permit, the District-approved Sulfur Removal Efficiency Plan, and NSPS Subpart LLL. Ongoing compliance requirements with this NSPS are summarized in Table 4.17. The Subpart LLL efficiency limits are enforced on a daily basis (24-hour average).

NSPS LLL for the Removal of Total Reduced Sulfur Removal by SRU	
Operational Mode	**Removal Efficiency (% by mass total sulfur) [m]**
≤ 20 LTD [n]	✓ 98.0
>20 LTD to 60 LTD [o]	✓ 99.9
or	
At any SRU throughput	✓ No more than 5.67 lb/hr SO_2 emissions from Combined B-801A&B Stacks [o]

(b) Operational Limits: All process operations from the equipment listed in this section shall meet the requirements of District Rule 311.A.2, the BACT requirements listed in Tables 4.5 and 4.6, and the requirements of NSPS Subpart LLL. Compliance with these limits shall be assessed through compliance with the monitoring, recordkeeping and reporting conditions in this permit. In addition, POPCO shall:

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[k] Expressed as long tons per day (LTD) of total elemental sulfur mass based on H_2S (only) in the acid gas feed to the SRU. This is a calculated value using the POPCO sour gas inlet feed gas H_2S analyzer (AI-172) and the sour gas feed volume meter (FIC-1). All plant inlet H_2S is assumed to be fed to the SRU.

[l] As measured by the calibrated Stretford Tailgas H_2S analyzer (AI-405) and Tailgas volumetric flow meter (FI-405).

[m] TRS removal efficiency across SRU is defined as the percent reduction of the plant inlet elemental sulfur in LTD (based on H_2S only) from the elemental sulfur emitted to the atmosphere as measured by the boiler stack SO_X CEMS.

[n] See footnote "l" above.

[o] SO_2 emissions in combined boiler stacks (including incineration fuel sulfur) as measured by the boiler stack SO_X CEM system.

(i) TGU tailgas Input Limits – POPCO shall comply with the following usage limits (HHV based):

(1) TGU tailgas to Boilers B-801A/B: 5.620 MMBtu/hr; 135 MMBtu/day; 12,308 MMBtu/quarter; 49,231 MMBtu/year

(ii) Compliance shall be based on the monitoring, recordkeeping and reporting requirements of this permit. POPCO shall use the most recent heating value analysis in conjunction with the TGU tailgas meter readings to calculate the heat input to the boilers.

(iii) *Sulfur Removal Unit Failure Mitigation System* –To comply with the POPCO expansion FDP, Condition E-5, and to eliminate the potential localized violation of the SO_2 ambient air quality standard which could occur from flaring acid gas generated during a SRU shutdown event, POPCO shall permanently install and operate an automatic shutdown system into the V-204 Sulfinol Stripper to prevent flared acid gas volumes in excess of 1480 SCF. This automatic shutdown system, and required equipment is fully described in POPCO's July 15, 1996 letter to the District, "Final Unplanned Flaring SO_2 Impact Modeling Report and Mitigation"; ATC Permit Application #9047.

(iv) To ensure the effectiveness of this system, POPCO shall implement the District-approved *SRU Failure Mitigation System Test Plan* for the life of the project. The Plan identifies and documents the procedures and testing protocol of this mitigation system, such that the test confirms, in the event of an actual SRU failure, no excess acid gas releases to the ZTOF shall occur at or below the maximum design SRU acid gas feed rate of 60 LTD of H_2S. Any SRU failure that activates this shutdown system shall be documented according to the reporting requirements of this permit (*SRU Shutdown Report*). The performance of this system shall be jointly evaluated by the District and POPCO after each incident of its use, or other District-specified frequency.

(v) *Minimum Boiler Incineration Temperature* – The average daily temperature of the gas leaving the boiler's combustion zone when tailgas is being incinerated shall be at or above 919 °F at all times. Compliance shall be based on at least 96 evenly spaced measurements of the combustion zone temperature over each 24 hour period and telemetry of that data to the District's DAS.

(1) POPCO may request that the minimum incinerator temperature be reestablished by conducting new performance tests under §60.8 of 40 CFR 60.

(c) Monitoring: POPCO shall monitor the emission and process parameters listed in Tables 4.9 through 4.12 for the life of the project. POPCO shall perform annual source testing of the SRU consistent with the requirements listed in Table 4.14 and the source testing permit condition below. In addition, POPCO shall:

(i) *Process Monitors* – POPCO shall install and maintain in-plant process monitors as shown in Figure 4.1 and Table 4.9 for the life of the project.

(ii) *Stretford Unit Oxidizer Tanks* – To ensure that hydrocarbon emissions associated with carry-under of hydrocarbons from the Beavon Tailgas into the Stretford unit oxidizers are within permitted limits, POPCO shall source test the tanks upon District request. The source test plan for this test shall include, but not necessarily be limited to the following parameters:

(1) Stretford oxidation air flow rates (i.e., inlet air to oxidation tanks);

(2) Bag samples of representative air flow emanating from the oxidizer tanks;

(3) Analysis of bag samples for reactive hydrocarbon speciation to C6+;

(4) A calculation of the apparent mass of reactive hydrocarbons emitted to the atmosphere from the oxidation tanks (lb/hr and tons/yr);

(5) Data on the Stretford solution and Beavon Tailgas temperatures where the solution contacts Beavon Tailgas; and

(6) The total Stretford Tailgas flow rate to the Utility Boilers.

(d) Recordkeeping: POPCO shall record the emission and process parameters listed in Tables 4.9 through 4.12. In addition, POPCO shall maintain the following:

(i) *Sulfur Recovery Unit/Stretford Tailgas Unit Report*– On a daily basis through the DAS:

(1) Inlet sour gas volume treated;

(2) The maximum H_2S concentration in sour gas inlet to the plant; and through written records;

(3) Amount of H_2S processed (LTD) through SRU;

(4) The percent H_2S reduction across the SRU;

(5) The percent total sulfur reduction across the SRU;

(6) The maximum H_2S mass flow rate (lb/hr) in the Stretford tailgas;

(7) The maximum Stretford tailgas H_2S concentration;

(8) The amount of sulfur production (LTD) (both Stretford and molten elemental sulfur production).

(9) The maximum peak SO_2 emission rate (lb/hr) from the combined Process Boiler stacks;

(10) The total SO_2 emissions (in lb/day) from the combined Process Boiler stacks.

(ii) *Inlet Sour Gas Feed H_2S Analyzer* – In the event that the inlet analyzer is non-operational for more than twenty four hours and deviations of permitted limits occur POPCO shall submit the sampling results and associated calculations for the data that would have been submitted through the DAS as defined in condition 9.C.7.d.i and ii with the deviation report.

(1) If no deviations occur during the period in which the back-up sampling method is used, the data that would have been submitted through the DAS will be included in the semi-annual compliance verification report with an asterisk denoting the dates in which the back-up sampling method was used.

(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 9047, ATC 9047-2, ATC 9047-4, PTO 8092*]

C.8 **Facility Throughput Limitations.** The POPCO gas processing facility shall be limited to the following processing limits:

(a) *60 MMSCFD Throughput Limit*: The volume of inlet sour gas to the plant containing a maximum of 26,700 ppmv (2.67%) H_2S shall not exceed 60 million standard cubic feet per calendar day. Compliance shall be based on the use of CEMS/DAS (daily average based on 6-minute average), process meters, lab analyses and field measurements;

(b) *80 MMSCFD Throughput Limit*: The volume of inlet sour gas to the plant containing a maximum of 7,000 ppmv (0.7%) H_2S shall not exceed 80 million standard cubic feet per calendar day. Compliance shall be based on the use of CEMS/DAS (daily average based on 6-minute average), process meters, lab analyses and field measurements;

(c) *Molten Sulfur Production Limit*: Maximum production of 60 long tons of molten sulfur on any given day;

(d) *Inlet Sour Gas H_2S Limits*: At no time shall the concentration of H_2S in the inlet sour gas to the plant exceed 26,700 ppmv (2.67%). In addition, when the inlet sour gas *rate* to the plant exceeds 60 MMSCFD, the concentration of H_2S in the inlet sour gas to the plant shall not exceed 7,000 ppmv (0.7%). Compliance shall be based on use of CEMS/DAS (6-minute average), process meters, lab analyses and field measurements. The *gas rate* applies on a 6-minute average; and

(e) *Sour Gas Pipeline Throughput Limit*: The offshore-to-onshore sour gas pipeline shall be limited to a maximum throughput of 90 MMSCFD; up to 80 MMSCFD of sour gas can be processed at the POPCO facility and up to 15 MMSCFD of sour gas can be processed at ExxonMobil's Stripping Gas Treating Plant (after being transported via the sour gas pipeline interconnect). The combined total throughput of both the volume of sour gas to the POPCO plant and the interconnect sour gas pipeline to the Stripping Gas Treating Plant shall not exceed a maximum of 90 MMSCFD at any time.

(f) POPCO shall track in a log, on a daily basis, the actual usage data of the parameters limited by this condition (using a District-approved format). [*Re: ATC 9047, ATC 9047-2, ATC 9047-5, PTO 8092*]

C.9 **Recordkeeping.** All records and logs required by this permit and any applicable District, state or federal rule or regulation shall be maintained for a minimum of five calendar years from the date of information collection and log entry at the POPCO facility. These records or logs shall be readily accessible and be made available to the District upon request. During this five year period, and pursuant to California Health & Safety Code Sections 42303 and 42304, such data shall be available to the District at the POPCO facility within a reasonable time period after request by the District. This requirement applies to data required by this permit and archived by POPCO's data-storage systems including but not limited to charts and manual logs. With the exception of CEMS data, prior to archiving any required data from the data-storage system, POPCO shall prepare written reports and maintain these reports in 3-ring binders at the POPCO facility. CEMS data shall be kept consistent with the requirements of POPCO's District-approved CEMS Plan. Failure to make such data available within the noted period shall be a violation of this condition. Further, retrieval of historical or archived data shall not jeopardize the logging of current data. [*Re: ATC 9047, PTO 9047*]

C.10 **Compliance Verification Reports.** Twice a year, POPCO shall submit a compliance verification report to the District. Each report shall document compliance with all permit, rule or other statutory requirements during the prior two calendar quarters. The first report shall cover calendar quarters 1 and 2 (January through June) and the second report shall cover calendar quarters 3 and 4 (July through December). The reports shall be submitted by March 1st and September 1st each year. Each report shall contain information necessary to verify compliance with the emission limits and other requirements of this permit and shall document compliance separately for each calendar quarter. These reports shall be in a format approved by the District, and shall be submitted in both hardcopy and electronic (PDF) format. The hardcopy submittal may be waived by the District with prior written approval. Compliance with all limitations shall be documented in the submittals. All logs and other basic source data not included in the report shall be made available to the District upon request. The second report shall also include an annual report for the prior four quarters. Pursuant to Rule 212, a completed *District Annual Emissions Inventory* questionnaire should be included in the annual report or submitted electronically via the District website. POPCO may use the Compliance Verification Report in lieu of the Emissions Inventory questionnaire if the format of the CVR is acceptable to the District's Emissions Inventory Group and if POPCO submits a statement signed by a responsible official stating that the information and calculations of quantifies of emissions of air pollutants presented in the CVR are accurate and complete to best knowledge of the individual certifying the statement. The report shall include the following information:

(a) *External Combustion.*

(1) The Boiler Fuel Gas Usage: For each utility boiler, the daily, quarterly and annual fuel use in units of million Btu and standard cubic feet. In addition, the five highest hourly heat input rates per month in units of million Btu/hr for each utility boiler.

(2) TGU Tailgas Usage: For each utility boiler, the daily, quarterly and annual amount of TGU tailgas combusted in the boiler in units of million Btu and standard cubic feet. In addition, the five highest hourly heat input rates per month in units of million Btu/hr.

(3) Boiler Fuel Gas Data: Results of the weekly sorbent tube readings of H_2S and the quarterly analyses of H_2S, total sulfur compounds and high heating value. Include copies of the quarterly lab analyses.

(4) Sales Fuel Gas Data: Results of the highest weekly reading observed from the H_2S analyzers and the quarterly analyses of H_2S, total sulfur compounds and high heating value. Include copies of the quarterly lab analyses.

(5) TGU Tailgas Data: Results of the quarterly analyses of high heating value. Include copies of the quarterly lab analyses.

(6) Source Testing: Summary results of all compliance emission source testing performed including information required by District Rule 342.J and Table 4.10.

(b) *Thermal Oxidizer*.

(1) Volumes/Mass Emissions: The volumes of gas combusted and resultant mass emissions for each flare category (i.e., Purge; Pilot; Continuous – HC/AG Header Baseline System Leakage; Continuous – AG Header Compressor Seal Leakage; Planned Other; and, Unplanned Other) shall be presented as a cumulative summary for each day, quarter and year. The report shall clearly indicate the basis for each data point presented, including supporting data for the baseline system leakage calculations.

(2) Volumes/Mass Emissions - Unplanned: The volumes of gas combusted and resultant mass emissions for each Unplanned Other flaring event. Include: the date, start time, duration, volume, H_2S and total sulfur content, HHV, specific reason/cause for flaring and the District Rule 505 breakdown number and/or Variance Order number. The report shall clearly indicate the basis for each data point presented.

(3) The highest total sulfur content and hydrogen sulfide content observed each week in the HC header, Acid Gas header, Sale Gas line and Boiler Fuel Gas line.

(4) A copy of Flare Event Log for the reporting period. Include a separate listing of all planned infrequent events that occurred more than four times per year from the same cause from the same processing unit or equipment type.

(5) Monthly Volumes Flared: A summary of the total amount of gas flared at the facility for each month for all planned flaring (event and non-events).

(6) Any other information required by District Rule 359.H.

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

(1) Inspection summary which includes a record of the total components inspected and the total number and percentage found leaking by component type, inspection frequency, and leak detection threshold (i.e. the component "Category" as defined in Permit Guideline Document 15).

(2) Record of leaking components (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) and associated component repair actions including dates of component re-inspections. The report shall clearly identify the corresponding leak thresholds for

each component category (i.e., Category A, Category B, etc.). The record shall also specify leaks from critical components.

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

(4) Listing of components installed as BACT under Rule 331 or the BACT requirement of Condition C.31, during the reporting year as approved by the District.

(5) Any other information required by District Rule 331.G, NESHAP Subpart HH and NSPS Subpart KKK.

(d) *Pigging*. The number of pigging events per quarter and per year along with a copy of the pigging log.

(e) *Tanks*.

(1) For each methanol shipment log: the date of shipment, the product name and supplier, amount of methanol loaded.

(2) The frequency of carbon change-out and the quantity and type of carbon recharged to the adsorbers.

(f) *Solvent Usage*. 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.

(g) *Sulfur Recovery Unit/Stretford Tailgas Unit*.

(1) Sulfur Recovery Unit/Stretford Tailgas Unit Report (on a daily basis through the DAS):

i. inlet sour gas volume treated;

ii. amount of H_2S processed (LTD) through SRU;

iii. the maximum H_2S concentration in sour gas inlet to the plant; and through written records;

iv. the amount of sulfur production (LTD) (both Stretford and molten elemental sulfur production);

v. the percent H_2S reduction across the SRU;

vi. the maximum H_2S mass flow rate (lb/hr) in the Stretford tailgas;

vii. the maximum Stretford tailgas H_2S concentration;

viii. the percent total sulfur reduction across the SRU;

ix. the maximum peak SO_2 emission rate (lb/hr) from the combined Utility Boiler stacks; and

x. the total SO_2 emissions (in lb/month) from the combined Utility Boiler stacks.

(2) SRU shutdown report (for any unplanned shutdowns include the date, shutdown time start, cause for shutdown, and estimated SRU acid gas volumes sent to the flare).

(3) Any other information required by NSPS Subpart LLL.

(h) *IC Engines*.

(1) Hours of operation each month for each engine.

(2) For each use: the start and stop times, the duration of use, the reason for use, and the aggregate number of minutes each engine is operated quarterly and annually.

(3) For each engine subject to the RICE MACT the following records shall be kept:

i. The date of each engine oil change, the number of hours of operation since the last oil change, and the date and results of each oil analysis.

ii. The date of each engine air filter inspection and the number of hours of operation since the last air filter inspection. Indicate if the air filter was replaced as a result of the inspection.

iii. The date of each engine's hose and belts inspection and the number of hours of operation since the last hose and belt inspection. Indicate if any hose or belt was replaced as a result of the inspection.

(i) *Wastewater Tank.*

(1) For each carbon canister adsorber, the results of weekly ROC and H_2S exhaust monitoring, the dates of any carbon change-out and the quantity and type of carbon recharged to the canister.

(j) *Facility Throughput Data*.

(1) The inlet rate of sour gas to the gas plant per day in units of million standard cubic feet.

(2) The highest recorded hydrogen sulfide content (ppmv) of the inlet sour gas on a daily basis.

(3) The annual average value of inlet sour gas to the gas plant in units of million standard cubic feet.

(4) The amount of sour gas transported in the offshore-to-onshore sour gas pipeline on a daily basis in units of million standard cubic feet.

(k) *General Reporting Requirements*.

(1) On quarterly basis, the emissions from each permitted emission unit for each criteria pollutant (along with the appropriate supporting data). The fourth quarter report shall include tons per year totals for all pollutants, by each emission unit and totaled.

(2) On quarterly basis, the emissions from each exempt emission unit including CARB certified equipment used at the facility, for each criteria pollutant (along with the appropriate supporting data). The fourth quarter report shall include tons per year totals for all pollutants, by each emission unit and totaled.

(3) POPCO shall submit with each required semi-annual report two quarterly CEMS Reports. The CEMS Reports shall follow the format and provide the information detailed in the District-approved CEMS Plan.

(4) A summary of each and every occurrence of non-compliance with the provisions of this permit, District rules, NSPS and any other applicable air quality requirement with the excess emissions that accompanied each occurrence.

(5) Information as required by the District-approved *Fuel Gas and HHV Reporting Plan*.

(6) Process stream analyses report (for Section 4.12.2 requirements).

(7) Maintenance and Calibration: Summary of all maintenance and calibration activities/logs performed on the utility boilers, thermal oxidizer, emission control systems, process meters, H_2S analyzers and CEMS.

(8) The monthly summary of the total volume (e.g., gallons) of NGL transferred from POPCO to the ExxonMobil facility shall be recorded and reported to the District.

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

[*Re: PTO 8092, ATC 9047, ATC 9047-4, PTO 9215, ATC/PTO 9471*, *ATC 9487, ATC 9675, ATC 9693]*

C.11 **BACT.** POPCO shall apply emission control and plant design measures which represent Best Available Control Technology (BACT), to the operation of the POPCO Gas Plant facilities as described in Section 4.10 and Tables 4.1, 4.2, 4. 3, 4. 4, 4. 5, 4. 6, 4.7, and 4.8 of this permit, as well as permit conditions C.2, C.3, C.6 and C.7 herein. BACT measures shall be in place and in operational at all times for the life of the project. [*Re: ATC 9047, ATC 9047-4*]

C.12 **Continuous Emission Monitoring (CEM).** POPCO shall implement a CEM program for emissions and process parameters as specified in Section 4.11 and Tables 4.9 through 4.12 of this permit. POPCO shall implement the District-approved CEM Plan. The CEM monitors shall be in place and functional for the life of the project. The District shall use the CEM data alone, or in combination with other data, to verify and enforce project conditions. Excess mass emissions indicated by the CEM systems shall be considered a violation of the applicable mass emission limits.

(a) The monitoring devices shall meet the requirements set forth in District Rule 328 and 40 CFR 51 and 40 CFR 60. Monitors must be installed, maintained, and operated in accordance with District and EPA requirements, as specified in the CFR and the District-approved CEM Plan and with manufacturer's specifications.

(b) Performance certification (relative accuracy testing and seven day calibration drift test) of the boiler SO_x & NO_x, inlet feed H_2S and Stretford Tailgas H_2S analyzers shall occur at least once per year, or more often if determined necessary by the District. POPCO shall perform quarterly quality assurance audits as per 40 CFR 60, Appendix F on these analyzers. Additional continuous monitors or redundant systems may be required by the District if problems with the facility or the continuous monitors develop which warrant additional monitoring.

(c) The required data will be consolidated and submitted to the District within forty-five (45) days after the close of each calendar quarter. More frequent reporting may be required if deemed necessary by the District. Minimum data reporting requirements shall be consistent with District Rule 328 and the approved CEM Plans and (as a minimum) must include the following:

(i) Data summaries for each parameter as per the District-approved CEM plan

(ii) Monitor downtime summary, including explanation and corrective action

(iii) Report on compliance with permit requirements, including any corrective action being taken

(d) In addition, operator log entries, strip charts, magnetic tapes, computer printouts, circular charts or diskettes, whichever is applicable, shall be provided upon request to the District.

(e) Pursuant to California HS&C §42706, POPCO shall report all emission exceedances detected by the CEMS to the District within 96 hours of each occurrence.

(f) POPCO shall maintain and operate continuous in stack monitoring equipment for the mass emissions (lb/hr basis) of nitrogen oxides (as NO_2) and sulfur oxides (as SO_2) from each Utility Boiler (B-801 A and B). POPCO shall compute and telemeter the sliding hourly average for nitrogen oxide emissions (lb/hr) and sulfur oxide emissions (lb/hr) individually from Utility Boiler B-801 A and B.

(g) *Inlet Sour Gas Feed H_2S Analyzer* – POPCO shall continuously monitor the inlet sour gas H_2S content per 40 CFR 60.646. In the event that the inlet analyzer is non-operational for more than twenty four (24) hours POPCO will follow the District-approved back-up sampling protocol defined in the updated District-approved CEM Plan. [*Re: PTO 8092, ATC 9047, PTO 9215*]

C.13 **Data Telemetry.** POPCO shall telemeter monitoring data to the District as specified by Conditions C.12 (*Continuous Emission Monitoring*) and C.16 (*Ambient Air Quality and Odor Monitoring Program*) of this permit. The data telemetry equipment shall be in place and functional for the life of the project consistent with the above-specified conditions. This telemetry equipment shall be compatible with the District’s Central Data Acquisition System. Table 9.1 (*CEMs Parameters To Be Telemetered To The Data Acquisition System (DAS)*), defines the parameters required to be telemetered to the DAS (excluding Ambient Air Quality and Odor Monitoring Program data). [*Re: PTO 8092, PTO 9215*]

Table 9.1 CEMs Parameters to be Telemetered to the DAS

DAS Variable	Parameter Monitored
INGASFLO	Sour Gas Inlet Flow Rate
INGASH2S	Mole % H_2S in Sour Gas Feed
TAILH2S	H2S from Stretford Unit
ATGGLOW	Flow Volume from Stretford Unit to B-801A
ABTGFLOW	Flow Volume from Stretford Unit to B-801B
ABSO2LB	Combined SO_X Stack Emissions
ASO2LB	Boiler A SO_X (lb/hr)
BSO2LB	Boiler B SO_X (lb/hr)
ATEMP	Boiler A Combustor Zone Temp
BTEMP	Boiler B Combustor Zone Temp
ANOXLB	Boiler A NO_X (lb/hr)
BNOXLB	Boiler B NO_X (lb/hr)
AFUELGAS	Fuel Flow to Boiler A
BFUELGAS	Fuel Flow to Boiler B
AGHDRFLO	Acid Gas Flare Flow Rate
HCHEADER	HC Flare Flow Rate
SALEH2S2	Sales Gas H_2S

<u>Notes</u>
1 NO_X as NO_2; SO_X as SO_2

C.14 **Central Data Acquisition System.** This system shall receive and analyze continuous emissions data from POPCO CEMs (as specified in Condition C.12), and odor monitoring (as specified in Condition C.16) and any other data necessary to evaluate observed and potential air quality impacts either site-specific or regional. [*Re: ATC 9047, PTO 8092, PTO 9215, ATC 9047-3*]

C.15 **Central Data Acquisition System Operation and Maintenance Fee.** By permit conditions C.12 and C.16, POPCO shall connect certain Continuous Emission Monitors (CEM) and all ambient, meteorological, and odor parameters to the District central data acquisition system (DAS). In addition, POPCO shall reimburse the District for the cost of operating and maintaining the DAS. POCPCO shall be assessed an annual fee, based on the District's fiscal year, collected semi-annually.

(a) Pursuant to Rule 210 III.A, POPCO shall pay fees specified in Table 9.2. 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.

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

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

Table 9.2 Fees for Data Acquisition System (DAS) Operation and Maintenance

FEE DESCRIPTION	FEE
Per CEM, ambient or meteorological parameter required by permit to be transmitted real-time to the District Central Data Acquisition System	$2,037 annually

(b) All ongoing costs and anticipated future capital upgrades will be 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 District into a share of the DAS costs {as outlined in the District's March 27, 1998 letter (*Fixed Fee Proposal for Monitoring and DAS Costs*)}. In the event that the assumptions used to establish this fee change substantially, the District may revisit and adjust the fee based on documentation of the cost of services. Adjusted fees will be implemented by transmitting a revised Table 9.2.

(c) 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. [*Re: ATC 9047-3, PTO 8092-1*]

C.16 **Ambient Air Quality and Odor Monitoring Program.** POPCO shall implement the following requirements:

(a) *Odor Monitoring Plan* – Implement the District-approved *Odor Monitoring Plan* (approved 9/13/93) for ambient odor monitoring and human olfactory verification programs for the life of the POPCO project.

(b) *Odor Monitoring Station* – Operate an odor monitoring station as listed in Sections 4.14 and 6.6 and Table 4.16 of this permit to continuously monitor ambient hydrogen sulfide (H_2S) concentrations to ensure that H_2S emissions emanating from the facility are in compliance with State and local ambient air quality standards and not causing a public nuisance. This station shall be located at the property boundary of the ExxonMobil LFC facility at a site approved by the District. For the purpose of compliance with District Rule 310 and the applicable ambient air standards, this odor monitoring station shall be assumed to be located at POPCO's property boundary. POPCO shall take over the maintenance and operation of the *LFC - Odor* station in the event ExxonMobil abandons or ceases to operate it. All monitoring equipment (H_2S and meteorological) shall be operated and maintained according to the *Air Quality and Meteorological Monitoring Protocol for Santa Barbara County*, dated October 1990, and all subsequent revisions. POPCO shall monitor and report the parameters listed in Table 4.16 in accordance with their District-approved *Odor Monitoring Plan*. All ambient monitoring data and records shall be submitted to the Air Pollution Control District in a form approved by the Air Pollution Control Officer. All data specified in Table 4.16 shall be telemetered to the District's Data Acquisition System on a real-time basis. Other odor-related pollutant-specific equipment may be added to the station, if deemed necessary by the District. POPCO shall reimburse the District's costs for the review and audit of the station's data in accordance with the cost reimbursement provisions of Rule 210.

(c) Up to two additional monitors may be required of POPCO to monitor odorous emissions emanating from the Las Flores Canyon facilities and offshore operations if the District determines that odor thresholds are being exceeded. [*Re: PTO 8092, ATC 9047, ATC 9047-3*]

C.17 **Offsets and Consistency with the Clean Air Plan.** POPCO shall comply with all the procedures and requirements specified in Section 7 of this document including all requirements for offsets, source testing and reporting (if applicable). POPCO shall provide the following offsets:

(a) POPCO shall offset the emission increases resulting from operation of the Las Flores Canyon facility as detailed in Section 7 and Tables 7.1, 7.2, 7.3 and 7.4.

(b) If offsets are not in place as required by this permit, POPCO shall provide replacement offsets and shall obtain variance relief. [*Re: ATC 9047-4*]

C.18 **Source Testing.** The following source testing provisions shall apply:

(a) POPCO shall conduct source testing of air emissions and process parameters listed in Section 4.12 and Tables 4.13, 4.14, and 4.15 of this permit. More frequent source testing may be required if the equipment does not comply with permitted limitations or if other compliance problems, as determined by the District, occur. Source testing shall be performed at the frequency specified in Table 4.13 using May-June as the anniversary date for the utility boilers and the SRU. The first semi-annual test of the POPCO boilers shall be completed in December 2009.

(b) POPCO shall submit a written source test plan to the District for approval at least thirty (30) days prior to initiation of each source test. The source test plan shall be prepared consistent with the District's Source Test Procedures Manual (revised May 1990 and any subsequent revisions). POPCO shall obtain written District approval of the source test plan prior to commencement of source testing. If the source testing procedure is identical to the previous source test, and the equipment to be source tested has not been modified since the previous source test, the most recent District approved source test plan can be used to conduct the source test. POPCO shall submit a letter at least 10 days before the source test (Attn: Engineering Supervisor) stating that the existing source test plan will be used for the planned source test. 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.

(c) Source test results shall be submitted to the District within forty-five (45) calendar days following the date of source test completion and shall be consistent with the requirements approved within the source test plan. Source test results shall document POPCO's compliance status with BACT requirements, mass emission rates in Section 5 and applicable permit conditions, rules and NSPS. All District costs associated with the review and approval of all plans and reports and the witnessing of tests shall be paid by POPCO as provided for by District Rule 210.

(d) 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 authorization 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.

(e) The inlet feed gas flow meters (FY1 and FT-196) and the tail gas flow meters (FT-817A and FT-831A) for the SRU, and the plant meters Ft-448 and FT-493 for the Stretford oxidizer tanks shall have been calibrated no more than two (2) months prior to the test. The calibration certificates shall be provided to the District at least three (3) days prior to the test.

(f) Gas sampling and flow measurement for the inlet feed gas flow and the tail gas flow shall be performed simultaneously for determining H_2S efficiency for the SRU.

(g) Calculations of H_2S efficiency for the SRU and ROC emission rates for the Stretford oxidizer tanks shall be documented in the test report.

(h) The timelines in (a), (b), and (c) above may be extended for good cause provided a written request is submitted to the District at least three (3) days in advance of the deadline, and approval for the extension is granted by the District. [Re: ATC 9047, PTO 9215, ATC 9693]

C.19 **Process Stream Sampling and Analysis.** POPCO shall sample and analyze the process streams listed in Section 4.12.2 of this permit consistent with the requirements of that section. All process stream samples shall be taken according to District-approved ASTM methods/procedures and must be follow traceable chain of custody procedures. POPCO shall maintain logs and records documenting the results from all process stream analyses (in a format approved by the District). [*Re: ATC 9047*]

C.20 **Process Monitoring Systems - Operation and Maintenance.** All facility process monitoring devices listed in Section 4.11.2 of this permit shall be properly operated and maintained according to manufacturer recommended specifications. POPCO shall implement the District approved *Process Monitor Calibration and Maintenance Plan* for the life of the project. This Plan details the manufacturer recommended maintenance and calibration schedules. Where manufacturer guidance is not available, the recommendation of comparable equipment manufacturers and good engineering judgment is utilized. [*Re: ATC 9047*]

C.21 **Fuel Gas Sulfur and HHV Reporting Plan.** POPCO shall implement the District-approved *Fuel Gas Sulfur and HHV Reporting Plan* for the life of the project. This Plan shall detail for each unique fuel supply: the monitoring equipment (and CEM protocol procedures if applicable), the adjustments to the hydrogen sulfide readings due to non-hydrogen sulfide reduced sulfur compounds and the reporting methods for compliance with the applicable limits. At a minimum, the non-H_2S total sulfur adjustment shall occur on a quarterly basis. POPCO shall maintain records of the daily fuel gas analyses in a log (using a District-approved format).

C.22 **Abrasive Blasting Equipment.** All abrasive blasting activities performed at the POPCO facility shall comply with the requirements of the California Administrative Code Title 17, Sub-Chapter 6, Sections 92000 through 92530. [*Re: ATC 9047*]

C.23 **Vacuum Truck Use.** During vacuum truck use, POPCO shall use a District-approved control device (i.e., carbon adsorption system or equivalent) to reduce emissions of reactive organic compounds (ROC) and odorous compounds from the vacuum truck vent. POPCO shall maintain a log of all vacuum truck operations. The log shall include for each use, the date, the location and equipment ID where vacuum truck operations occur, volume and description of material, reason for use, duration of the operation and any emission control maintenance activities. POPCO shall implement ExxonMobil's LFC District-approved *Vacuum Truck Operation & Maintenance Procedures Plan*. The District-approved Plan is an enforceable part of this permit. Except for non-hazardous wastewater, for each vacuum truckload transported offsite, the date of use, the quantity (bbl or gal) and type of fluid handled shall be recorded. [Re: ATC 9047-4, PTO 8092]

C.24 **Emergency Firewater Pump/Electrical Generator IC Engines.** The following equipment are included in this emissions unit category:

Device Type	**POPCO ID**	**District Device No**
Diesel Internal Combustion Engines		
Firewater Pump	P-805	002359
Firewater Pump	P-806	002356
Emergency Generator	G-801	390276
Emergency Air Generator	K-802	105147

(a) Operational Limits:

(i) Each engine shall be equipped with a non-resettable hour meter. POPCO shall not test these emergency engines concurrently with the testing of any emergency engine at ExxonMobil's LFC oil and gas plant.

(ii) *Particulate Matter Emissions:* To ensure compliance with District Rules 205.A, 302, 305, 309 and the California Health and Safety Code Section 41701, POPCO shall implement manufacturer recommended operational and maintenance procedures to ensure that all project diesel-fired engines minimize particulate emissions. POPCO shall implement the District-approved *IC Engine Particulate Matter Operation and Maintenance Plan* for the life of the project. This Plan details the manufacturer recommended maintenance and calibration schedules that POPCO will implement. Where manufacturer guidance is not available, the recommendations of comparable equipment manufacturers and good engineering judgment shall be utilized.

(iii) *Engine Maintenance:* Existing emergency standby compression ignition reciprocating internal combustion engines (RICE) must comply with the following operating requirements:

(1) Change the oil and filter every 500 hours of operation or annually, whichever comes first. Alternatively, the owner or operator may utilize an oil analysis program specified in 40 CFR 63 Subpart ZZZZ §63.6625(i). If all the requirements detailed in this section of the regulation are satisfied, the owner or operator shall not be required to change the oil. If any of the limits are exceeded the engine owner or operator must change the oil within 2 business days of receiving the results of the analysis. If the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 business days or before commencing operation, whichever is later;

(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.

(b) <u>Recordkeeping</u>: ExxonMobil shall keep the required logs, as applicable to this permit, which demonstrate compliance with emission limits, operation limits and monitoring requirements above. All logs shall be available to the District upon request. District Form ENF-92 (*Diesel-Fired Emergency Standby Engine Recordkeeping Form*) can be used for this requirement. Written information (logs) shall include:

(i) The hours of operation for the firewater pumps and emergency generators (by ID number). The log shall detail the number of operating hours on each day the engine is operated and the total monthly and cumulative annual hours. The log shall specify the following:

(1) emergency use hours of operation;

(2) maintenance and testing hours of operation;

(3) hours of operation for all uses other than those specified in items (1) and (2) above along with a description of what those hours were for.

(4) hours of operation to comply with the requirements of the NFPA for firewater pumps {if applicable}

(ii) If an operator's tag number is used in lieu of an IC engine identification plate, documentation which references the operator's unique IC engine ID number to a list containing the make, model, serial number, rated maximum BHP and the corresponding RPM.

(iii) For each engine with timing retard, a District Form –10 (*IC Engine Timing Certification Form*) must be completed each time the engine is serviced.

(iv) For each engine subject to the RICE MACT the following records shall be kept:

(1) The date of each engine oil change, the number of hours of operation since the last oil change, and the date and results of each oil analysis.

(2) The date of each engine air filter inspection and the number of hours of operation since the last air filter inspection. Indicate if the air filter was replaced as a result of the inspection.

(3) The date of each engine's hose and belts inspection and the number of hours of operation since the last hose and belt inspection. Indicate if any hose or belt was replaced as a result of the inspection.

(c) 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: District Rules 202, 205.A, 302, 304, 309, 311, and 1303, PTO 8092, ATC 9047, 40 CFR 70. 6, CCR Title 17, Section 93115*]

C.25 **Wastewater Tank.** The following equipment is included in this emissions unit category:

Device Type	POPCO ID	District Device No
Storage Tanks		
Wastewater Tank	T-601	103103

(a) Emission Limits:
(i) Mass emissions from the tank shall not exceed the limits listed in Tables 5.3 and 5.4.

(b) Operational Limits:

(i) Wastewater tank T-601 shall be equipped with two Calgon VENTSORB canisters in series, each containing 180 lb of Calgon AP4-60 activated carbon, Calgon Centaur LAD activated carbon, or District-approved equivalent to reduce the ROC emissions from the tank by at least 90% by weight. Compliance with this limit shall be assessed through the source testing condition in this permit.

(ii) The tank cover and carbon canister system shall be leak-free, properly installed, and properly maintained.

(iii) The hydrogen sulfide concentration in the exhaust to the atmosphere shall not exceed 13 ppmv.

(iv) The carbon in the upstream canister shall be replaced: (a) within one week of indications the carbon is not performing as designed, (b) within one week of monitoring if the ROC concentration in the exhaust of the upstream canister is greater than 200 ppmv as methane or greater than the range of the FID, or (c) within one year of the last carbon replacement, whichever is sooner. The carbon in the downstream canister shall be replaced: (a) within 24 hours of indications the carbon is not performing as designed, (b) within 24 hours of monitoring if the ROC concentration in the exhaust of the downstream canister is greater than 200 ppmv as methane or greater than the range of the FID, or (c) within one year of the last carbon replacement, whichever is sooner.

(v) If the upstream canister must be replaced, it may be replaced with the downstream canister. The carbon in the downstream canister shall be as new as, or newer than, the carbon in the upstream canister at all times.

(c) Monitoring:

(i) ExxonMobil shall monitor the exhaust of each carbon canister serving wastewater tank T-601 once per week in accordance with EPA Method 21, or other District approved methods. ExxonMobil shall take one reading at the exhaust of each carbon canister for THC and one reading for methane. If using an FID and charcoal filter, ExxonMobil shall replace the charcoal filter on the FID prior to each methane reading. The ROC concentration at the exhaust of each carbon canister shall be reported as the difference between the THC and methane concentrations. THC or methane concentrations beyond the measurable range of the instrument shall be assumed to be greater than 200 ppmv as methane.

(ii) ExxonMobil shall monitor the exhaust of the final carbon canister once per week for hydrogen sulfide using Draeger tubes or by taking a tedlar grab bag sample per EPA Method 18 and analyzing it within 24 hours of sample collection using GC-FPD or other District-approved analysis method. If the Draeger tube reading indicates a hydrogen sulfide concentration greater than 10 ppmv, a tedlar grab bag sample shall be taken per EPA Method 18 and analyzed within 24 hours of sample collection using GC-FPD or other District-approved analysis method.

(d) Recordkeeping: The wastewater tanks shall meet the requirements of District Rule 325, Section F. In addition, ExxonMobil shall maintain records of the information listed below:

(i) For each carbon canister adsorber, the results of weekly ROC and H_2S exhaust monitoring, the dates of any carbon change-out and the quantity and type of carbon recharged to the canister shall be recorded monthly in a log.

(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.

C.26 **Produced Gas and Purging of Vessels.** POPCO shall direct all produced gases to the sales compressors, vapor recovery, the flare header or other permitted control device when de-gassing, purging or blowing down any tank, vessel or container that contains reactive organic compounds or reduced sulfur compounds due to activities that include, but are not limited to, process or equipment turnarounds, process upsets or agency ordered safety tests. [*Re: ATC 9047*]

C.27 **Natural Gas Liquids (NGL).**

(a) *NGL Loading Rack* – The NGL loading rack shall be equipped with a vapor return system. Such vapor return system shall be capable of returning all vapors generated during loading to the NGL storage tanks. In the event of a malfunction in the vapor return system, all vapors shall be sent to the emergency flare where they will be combusted before release to the atmosphere. Such malfunctions shall be reported to the District as a breakdown pursuant to District Rule 505 or variance relief shall be obtained.

(b) *NGL Flowline* – POPCO shall transport NGLs from its gas plant to Exxon's Stripping Gas Treating plant via the NGL flowline in accordance with the requirements of Condition P-14 of the Santa Barbara County Final Development Plan 93-DP-015. A monthly summary of the total volume (e.g., gallons) of NGL transferred from POPCO to the ExxonMobil facility shall be recorded and reported to the District.

(c) *NGL Storage Tanks* – POPCO shall remove from NGL service two of the five NGL storage tanks. These units shall be locked out of service in a manner that is satisfactory to the Air Pollution Control Officer. POPCO shall provide the District, in writing, with the following information on the out of service tanks: a) the tank numbers; b) the contents (e.g., hydrocarbon, water, nitrogen) within each; and c) the method(s) by which each is prevented from being placed back into service. [*Re: ATC 9047, ATC 9675*]

C.28 **PDS/TDS/SDS/Pig Receiver Eductor Vapor Recovery System.** The PDS/TDS/SDS eductor system shall be equipped with a high-pressure alarm set to alarm at 5.5 psig. Any high-pressure alarm indicated by this sensor shall be recorded by the plant Distributed Control System (DCS), and be reported to the District.

(a) Lean-Sulfinol shall continually flow through eductor J-203 at all times when POPCO is processing sour gas and the PDS is operational. This shall be evidenced by the upstream and downstream lean-Sulfinol valves being configured to the open positions during the conditions described above.

(b) Maintenance logs of the eductor and pressure controller systems shall be kept on site by the permittee and made available for District inspection upon request. This permit requires no other recordkeeping, if the Operational Limitations of this permit are adhered to by the permittee at all times. [*Re: ATC/PTO 9471, ATC 9471-1*]

C.29 **Fuel Gas Sampling**. POPCO shall provide means of sampling the fuel gas to any combustion equipment that vents to the atmosphere. Such sample access shall be compatible with a Draeger or Kitigawa-type gas detector, or other District approved sampling method. [*Re: PTO 8092*]

C.30 **Cold Facility Startup and Shutdown**. The District shall be provided reasonable advance notification of a cold facility startup following a planned facility shutdown. Such notification shall provide sufficient time to allow the District opportunity to schedule District staff or their designee to witness the startup activities. [*Re: PTO 8092*]

(a) POPCO shall submit a letter to the District twenty-four (24) hours prior to any scheduled complete depressurization of the plant. The letter shall identify the purpose of the shutdown, the units to be shut down, and the anticipated period the unit will be inoperable. At the conclusion of the shutdown, POPCO shall submit a letter to the District identifying the startup date, no later than one week after startup.

C.31 **Mass Emission Limitations**. Except as noted in Conditions 9.C.2 and 9.C.3, mass emissions for each equipment item (i.e., emissions unit) associated with the POPCO Gas Plant shall not exceed the limits listed in Tables 5.3 and 5.4. Emissions from the entire facility shall not exceed the total limits listed in Table 5.5. In addition, POPCO shall not exceed the device capacity specification values for each emission unit as listed in Table 5.1. Compliance with, and enforcement of the device-specific emission limits, and capacities listed in this permit shall be determined through the monitoring, reporting and recordkeeping requirements of this permit. [*Re: ATC 9047, PTO 8092, ATC/PTO 9471, ATC 9471-1, ATC 9487, ATC 9675*]

C.32 **Permitted Equipment.** Only those equipment items listed in Attachment 10.4 are covered by the requirements of this permit and District Rule 201.E. [*Re: ATC 9047*]

C.33 **Emission Factor Revisions.** The District may update the emission factors for any calculation based on USEPA AP-42 or District P&P emission factors at the next permit modification or permit reevaluation to account for USEPA and/or District revisions to the underlying emission factors. Further, POPCO shall modify its permit via an ATC application if compliance data shows that an emission factor used to develop the permit's potential to emit is lower than that documented in the field. The ATC permit shall, at a minimum, adjust the emission factor to that documented by the compliance data consistent with applicable rules, regulations and requirements. [*Re: ATC 9047-4*]

C.34 **As-Built Drawings.** POPCO shall maintain current "as-built" drawings (P&IDs and PFDs) for the POPCO facility and make them available for inspection upon request. [*Re: ATC 9047*]

C.35 **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 the Project and shall be made available to District inspection staff upon request.

(a) *1983 Flaring Analysis* (as revised July 1984)

(b) *Vacuum Truck Plan* (approved 6/14/1993)

(c) *CEMS Plan* (approved 09/29/05)

(d) *The Odor Monitoring Plan* (approved 9/1993)

(e) *Rule 359 Flare Minimization Plan* (approved 01/05/1996)

(f) *POPCO I&M Manual for Control of Reactive Organic Compound Emissions* (submitted 9/1998)

(g) *Process Monitor and Calibration Maintenance Plan* (approved 11/13/2001)

(h) *Fuel Gas Sulfur and HHV Reporting Plan* (approved 07/16/2004)

(i) *Diesel IC Engine Particulate Matter Operation and Maintenance Plan* (approved 3/13/1998)

(j) *SRU Failure Mitigation System Test Plan* (approved 3/13/1998)

(k) *Emergency Episode Plan* (approved 1/17/2003)

(l) *Solvent Reclamation Plan* (approved 9/29/2005)

(m) *Thermal Oxidizer Combustor Maintenance Plan* (approved 9/5/2000)

(n) *Steam Injection Operating and Monitoring Plan* (approved 9/8/2004)

(o) *Rule 331 Fugitive Hydrocarbon Inspection and Maintenance Plan* (approved 8/7/2000)

(p) *Shutdown and Depressurization Plan* (approved 3/9/2001)

(q) *PSD Air Quality Monitoring Plan* (approved 3/1993) [*Re: ATC 9047, ATC 9047-4]*

C.36 **Visible Emissions – Rule 302**

(a) Planned and Unplanned Flaring (Thermal Oxidizer*)*: No visible emissions shall occur from any planned or unplanned flaring events. POPCO shall perform a visible emissions observation for a one-minute period once per quarter during a planned intermittent flaring event occurring during daylight hours. If a daylight planned-intermittent flaring event does not occur during the calendar quarter, no monitoring is required. For each unplanned flaring event during daylight hours that is greater than six-minutes in duration, a visible emissions observation for a one-minute period shall be performed. The observation shall begin no later than six-minutes after the time the unplanned flaring event begins, and if the total flare event is less than 7 minutes, the observation may be less than the full one minute. The start-time and end-time of each visible emissions inspection shall be recorded in a log, along with a notation identifying whether visible emissions were detected. All records shall be maintained consistent with the recordkeeping condition of this permit.

(b) Boilers (B-801A & B-801B): No visible emissions shall occur from Boiler B-801A or B-801B. Once per calendar quarter, ExxonMobil shall perform a visible emissions inspection for a one-minute period from each boiler. The start-time and end-time of each visible emissions inspection shall be recorded in a log, along with a notation identifying whether visible emissions were detected. All records shall be maintained consistent with the recordkeeping condition of this permit.

(c) Diesel Fueled IC Engines: No visible emissions shall occur from any diesel fueled engines. Once per calendar quarter, POPCO shall perform a visible emissions inspection for a one-minute period on each diesel engine when operating, except for diesel engine powered vehicles on-site and diesel engines that qualify as non-road engines per the definition in 40 CFR 89.2. For the firewater pump, POPCO shall perform a one-minute visible emission inspection each time the firewater pump is operated longer than 15 minutes during any testing or emergency drills (otherwise no inspection is required). The start-time and end-time of each visible emissions inspection shall be recorded in a log, along with a notation identifying whether visible emissions were detected. All records shall be maintained consistent with the recordkeeping condition of this permit.

C.37 **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 temporary 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 temporary 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, with the exception of source testing conditions, relative accuracy test audit and relative accuracy audit shall be considered fully enforceable immediately upon startup of facility operations. All permit conditions related to source testing, relative accuracy test audit and relative accuracy audit shall be enforceable 90 calendar days following startup of facility operations. For the purposes of this condition, startup of facility operations shall be defined as the date that the facility resumes produced gas processing. The permittee shall submit a written notification to the District no less than 60 calendar days prior to the startup of facility operations. 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.

Table 9.3: Permit Conditions

Condition	Condition Name	Sub-Condition Name	Permit Requirement
9.B.12	Continuous Emissions Monitoring	N/A	N/A
9.C.1(b)(iii)(2)(a)	External Combustion	Operational Limits	Utility Boiler B-801B - Fuel Gas Usage Limits
9.C.1(b)(iv)(1)	External Combustion	Operational Limits	Utility Boiler –TGU Tailgas Input Limits
9.C.1(c)	External Combustion	Monitoring	N/A
9.C.1(d)	External Combustion	Recordkeeping	N/A
9.C.2(c)(ii)	Thermal Oxidizer	Monitoring	Purge/Pilot Gas
9.C.2(c)(iii)	Thermal Oxidizer	Monitoring	Pilot Gas Flow Meter
9.C.2(c)(iv)	Thermal Oxidizer	Monitoring	Hydrocarbon and Acid Gas Meters
9.C.2(c)(v)	Thermal Oxidizer	Monitoring	Meter Calibrations
9.C.2(c)(vi)	Thermal Oxidizer	Monitoring	Compressor Seal Meters
9.C.2(c)(vii)	Thermal Oxidizer	Monitoring	Purge Gas Flow Meters
9.C.2(c)(x)	Thermal Oxidizer	Monitoring	Flaring Sulfur Content Correction
9.C.2(d)	Thermal Oxidizer	Recordkeeping	N/A
9.C.3(b)(i)	Fugitive Hydrocarbon Emissions Components	Operational Limits	VRS Use
9.C.3(c)(i)	Fugitive Hydrocarbon Emissions Components	Monitoring	ERC
9.C.5(a)(ii)	Tanks	Operational Limits	Wastewater Tank Carbon Canisters
9.C.5(b)(ii)	Tanks	Monitoring	Carbon Canisters
9.C.5(b)(v)	Tanks	Monitoring	Source Testing
9.C.7(a)	Sulfur Recovery Unit/ Stretford Tailgas Unit	Emission Limits	Startup and Shutdown Operations
9.C.7(b)(ii)	Sulfur Recovery Unit/ Stretford Tailgas Unit	Operational Limits	Compliance Basis
9.C.7(b)(v)	Sulfur Recovery Unit/ Stretford Tailgas Unit	Operational Limits	Minimum Boiler Incineration Temperature
9.C.7(c)	Sulfur Recovery Unit/ Stretford Tailgas Unit	Monitoring	N/A
9.C.7(d)(i)	Sulfur Recovery Unit/ Stretford Tailgas Unit	Recordkeeping	Sulfur Recovery Unit/Stretford Tailgas Unit Report
9.C.8(f)	Facility Throughput Limitations	N/A	Daily Log
9.C.10(a)	Compliance Verification Reports	External Combustion	N/A
9.C.10(b)	Compliance Verification Reports	Thermal Oxidizer	N/A

Condition	Condition Name	Sub-Condition Name	Permit Requirement
9.C.10(d)	Compliance Verification Reports	Pigging	N/A
9.C.10(g)	Compliance Verification Reports	Sulfur Recovery Unit/ Stretford Tailgas Unit	N/A
9.C.10(j)	Compliance Verification Reports	Facility Throughput Data	N/A
9.C.10(k)(5)	Compliance Verification Reports	General Reporting Requirements	Fuel Gas and HHV Reporting Plan
9.C.10(k)(6)	Compliance Verification Reports	General Reporting Requirements	Process Stream Analyses Report
9.C.10(k)(7)	Compliance Verification Reports	General Reporting Requirements	Maintenance and Calibration
9.C.10(k)(8)	Compliance Verification Reports	General Reporting Requirements	Monthly NGL Volume
9.C.12	Continuous Emission Monitoring (CEM)	N/A	N/A
9.C.13	Data Telemetry	N/A	N/A
9.C.14	Central Data Acquisition System	N/A	N/A
9.C.16	Ambient Air Quality and Odor Monitoring Program	N/A	N/A
9.C.17	Offsets and Consistency with the Clean Air Plan	N/A	N/A
9.C.18(a)	Source Testing	N/A	N/A
9.C.19	Process Stream Sampling and Analysis	N/A	N/A
9.C.20	Process Monitoring Systems - Operation and Maintenance	N/A	N/A
9.C.21	Fuel Gas Sulfur and HHV Reporting Plan	N/A	N/A
9.C.25(b)	Wastewater Tank	Operational Limits	N/A
9.C.25(c)	Wastewater Tank	Monitoring	N/A
9.C.27(a)	Natural Gas Liquids (NGL)	NGL Loading Rack	N/A
9.C.27(b)	Natural Gas Liquids (NGL)	NGL Flowline	N/A
9.C.28	PDS/TDS/SDS/Pig Receiver Eductor Vapor Recovery System	N/A	N/A
9.C.35(d)	Documents Incorporated by Reference	Odor Monitoring Plan	N/A
9.C.36(b)	Visible Emissions – Rule 302	Boilers (B-801A and B-801B)	N/A
9.D.3(c)	External Combustion	Monitoring	N/A

Table 9.4: Rules and Regulations

Rule	Rule Name	Sections	Section Name
311	Sulfur Content of Fuels	B	N/A
325	Crude Oil Production and Separation	F.4	Requirements – Recordkeeping
328	Continuous Emission Monitoring	F.2 G.1, G.2, G.3, G.4	Records Maintenance Reporting Requirements
331	Fugitive Emissions Inspection and Maintenance	D.2, D.3 F G	Requirements – General Requirements – Inspection Recordkeeping and Reporting
342	Boilers, Steam Generators, and Process Heaters (5 MMBtu/hr and Greater)	G.1 I.1, I.3, I.4 J.1	Requirements – Source Testing Requirements – Recordkeeping Requirements – Reporting
359	Flares and Thermal Oxidizers	D.2.b.1, D.2.b.2 F G H	Requirements Source Testing Monitoring and Recordkeeping Reporting

Within 60 days of permit issuance, the permittee shall submit a list of all equipment units or processing areas subject to this condition due to nonoperation during temporary facility shutdown caused by the failure and shutdown of Plains All American Pipeline Lines 901 and 903. The list shall identify the specific permit conditions and/or Rule sections from Tables 9.5 and 9.6 that do not apply to each listed equipment unit.

C.38 **Facility Restart Reporting.** For the equipment units that are temporarily nonoperational due to the pipeline failure, the permittee shall submit a facility start-up schedule 30 calendar days prior to the first facility/plant restart. The schedule shall identify the planned timing and sequencing of startup activities related to the SYU plants and facilities for the upcoming month. Following submittal of this initial schedule, the permittee shall provide to the District a semi-monthly report summarizing the prior period's restart activities, and a description of the restart activities planned for the next half month period. The report shall be submitted to the District on the 1st and 16th each month. The permittee shall notify the District when the facility restart is complete and semi-monthly reporting described in this condition shall cease.

C.39 **Facility Restart Fugitive Emissions Inspection.** For the equipment units that are temporarily nonoperational due to the pipeline failure, the permittee shall initiate all I&M inspections required under Condition 9.C.3, in accordance with the facility's approved I&M Plan, with the first inspection commencing within 7 days of the start of operations. For the first three calendar months of operation, where no inspections are otherwise required under Condition 9.C.3, optical imaging screening procedures described under Health and Safety Code Section 95669 shall be performed on all fugitive components subject to Condition 9.C.3. Method 21 shall be used to quantify all potential leaks identified by the optical screening procedure. Any confirmed leaks shall be repaired, recorded and reported following Condition 9.C.3 and Rule 331. All screening inspections shall be recorded and reported following Condition 9.C.3 (d) and (e) respectively. After the initial three (3) months of operation, the inspection frequency for fugitive components subject to Condition 9.C.3 shall revert to the inspection schedule identified for the component category in Condition 9.C.3.b(ix) – (xii).

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 facility 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.

D.1 **Tanks.** The following equipment is included in this emissions category:

Device Type	POPCO ID	District Device No
Storage Tanks		
Methanol Tank	T-111	102620
Wastewater Tank	T-807	103104

(a) Emission Limits: Mass emissions from the storage tanks listed in the Device Type table above shall not exceed the limits listed in Tables 5.3 and 5.4. Compliance with this condition shall be based on the monitoring, recordkeeping and reporting conditions in this permit. Emissions from the storage tanks shall be determined using the emission factors in Table 5.2. Emissions from the methanol tank shall also be determined using actual throughput data.

D.2 **Diesel Internal Combustion Engines**. The following equipment is included in this emissions category:

Device Type	POPCO ID#	District Device ID#
Diesel Internal Combustion Engines		
Firewater Pump	P-805	002359
Firewater Pump	P-806	002356
Emergency Air Generator	K-802	105147
Emergency Backup Generator	G-801	390276

(a) Emission Limitations. The mass emissions from the emergency generator (Device No 105147) shall not exceed the values listed in Table 5.3 and 5.4. 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 listed below. Emergency use operations, as defined in Section (d)(25) of the ATCM[p], have no operational hours limitations.

[p] 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

(i) *Maintenance & Testing Use Limit* - The stationary emergency standby diesel-fueled CI engine(s) subject to this permit, except for in-use firewater pump engines, shall limit maintenance and testing[q] operations to no more than the hours listed in Table 5.1.

(ii) *Impending Rotating Outage Use* - The stationary emergency standby diesel-fueled CI engine(s) subject to this permit may be operated in response to the notification of an impending rotating outage if all the conditions cited in Section (e)(2)(A)(2) or Section (e)(2)(B)(1) of the ATCM are met, as applicable.

(iii) *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. This provision may be delayed pursuant to the provisions of Section (c)(19) of the ATCM.

(iv) *Firewater Pumps* - The stationary emergency standby diesel-fueled CI engines (DeviceNo 002356 and 002359) are operated as firewater pumps 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*".

(v) *Temporary Engine Replacements - DICE ATCM* - Any reciprocating internal combustion engine subject to this permit and the stationary diesel ATCM may be replaced temporarily only if the requirements (1 – 7) listed herein are satisfied.

(1) The permitted engine is in need of routine repair or maintenance.

(2) The permitted engine that is undergoing routine repair or maintenance is returned to its original service within 180 days of installation of the temporary engine.

(3) 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 that is being temporarily replaced. At the written request of the permittee, the District may approve a replacement engine with a larger rated horsepower than the permitted engine 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.

(4) The temporary replacement engine shall comply with all rules and permit requirements that apply to the permitted engine that is undergoing routine repair or maintenance.

(5) 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 shall be sent electronically to: *enfr@sbcapcd.org*.

[q] "maintenance and testing" is defined in Section (d)(41) of the ATCM

(6) Within 14 days upon return of the original permitted engine to service, the permittee shall submit a completed *Temporary IC Engine Replacement Report* form (Form ENF-95). This form shall be sent electronically to: enfr@sbcapcd.org.

(7) 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. This condition does not apply to engines that have experienced a cracked block (unless under manufacturer's warranty), to engines for which replacement parts are no longer available, or new engine replacements {including "reconstructed" engines as defined in Section (d)(44) of the ATCM}. Such engines are subject to the provisions of New Source Review and the new engine requirements of the ATCM.

(vi) *Permanent Engine Replacements* - Any E/S engine, firewater pump engine or engine used for an essential public service that breaks down and cannot be repaired may install a new replacement engine without first obtaining an ATC permit only if the requirements (1 – 6) listed herein are satisfied.

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

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

(3) 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*).

(4) 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).

(5) 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: enfr@sbcapcd.org.

(6) 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.

(vii) *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) of the ATCM shall notify the District immediately upon detection of the violation and shall be subject to District enforcement action.

(viii) *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) from all or part of the requirements of Section (e)(2), 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.

(ix) *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.

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

(i) *Non-Resettable Hour Meter* - Each stationary emergency standby diesel-fueled CI engine(s) subject to this permit 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) {if specifically allowed for under this permit}

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

(v) The owner or operator shall document 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) Fuel purchase records or a written statement on the fuel supplier's letterhead signed by an authorized representative of the company confirming that the fuel purchased is 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 *(Reference Stationary Diesel ATCM and Title 13, CCR, Sections 2281 and 2282)*.

(2) Amount of fuel purchased;

(3) Date when the fuel was purchased;

(4) Signature of owner or operator or representative of owner or operator who received the fuel;

(5) Signature of fuel provider indicating fuel was delivered.

(vi) Hours of operation to comply with the requirements of the NFPA for healthcare facilities or firewater pumps (for DeviceNo 2356 and 2359)

(e) Reporting**.** By March 1st of each year, a written report documenting compliance with the terms and conditions of this permit and the ATCM for the previous calendar year shall be provided by the permittee to the District (Attn: *Annual Report Coordinator*). 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 and may be submitted with the CVR required per Condition C.10 of this permit.

D.3 **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.4 **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.5 **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.

AIR POLLUTION CONTROL OFFICER

February 15, 2023
Date

Attachments:

10.1 - Emission Calculation Documentation
10.2 - Equipment List
10.3 - ExxonMobil Comments on the Draft Permit and District Responses
10.4 - Fee Statement

Notes:

Reevaluation Due Date: April 2024
Semi-Annual reports are due by March 1st and September 1st of each year
This permit supersedes: PT-70 Reeval 8092-R9 issued 04/26/2018, PTO Mod 8092-05 issued 07/10/2019, PTO Mod 8092-06 issued 09/26/2019, PT-70 ADM 15423 issued 09/06/2019, and PT-70 ADM 15563 issued 07/22/2020.
This permit incorporates: PT-70 ADM 15698

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10.0 Attachments

10.1. Emissions Calculation Documentation

This attachment contains emission calculation spreadsheets and other supporting calculations used for the emission tables in Section 5 and permit conditions in Section 9. Refer to Section 4 for the general equations, assumptions and emission factor basis used.

Table 10.1 Calculations for Estimated Exempt Emissions

A. Exempt IC Engine Calcs

Description	Device Specifications				NO_X	ROC	CO	SO_X	PM	PM_{10}	$PM_{2.5}$
	District ID#	Exemption Claimed	bhp	hrs/yr	Tons Per Year (TPY)[a]						
Crane (200 ton) Hydraulic		202.D.5	200.0	25.7	0.08	0.01	0.02	0.01	0.01	0.01	0.01
CAT 416 C Backhoe		202.F.1.c	75.0	59.6	0.07	0.00	0.01	0.01	0.00	0.00	0.00
Crane (25 ton)		202.F.1.c	210.0	8.8	0.03	0.00	0.01	0.00	0.00	0.00	0.00
Crane (300 ton) #103958		202.F.1.c	360.0	13.0	0.07	0.00	0.02	0.01	0.01	0.01	0.01
Crane (35 ton)		202.F.1.c	205.0	12.5	0.04	0.00	0.01	0.00	0.00	0.00	0.00
Crane (75 ton) #102006		202.F.1.c	190.0	87.2	0.26	0.02	0.06	0.03	0.02	0.02	0.02
Crane (8 ton)		202.F.1.c	76.0	8.4	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Manlift - 60 ft		202.F.1.c	50.0	30.0	0.02	0.00	0.01	0.00	0.00	0.00	0.00
Manlift - 65 ft		202.F.1.c	56.0	27.0	0.02	0.00	0.01	0.00	0.00	0.00	0.00
#1 Light Tower		202.F.1.e	10.7	54.0	0.01	0.00	0.00	0.00	0.00	0.00	0.00
#2 Light Tower		202.F.1.e	10.7	54.0	0.01	0.00	0.00	0.00	0.00	0.00	0.00
#3 Light Tower		202.F.1.e	10.7	54.0	0.01	0.00	0.00	0.00	0.00	0.00	0.00
#4 Light Tower		202.F.1.e	10.7	54.0	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Welder - Lincoln Portable		202.F.1.e	38.2	27.0	0.02	0.00	0.00	0.00	0.00	0.00	0.00
Welder - Lincoln Portable		202.F.1.e	38.2	8.5	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Air Compressor		202.F.2	460.0	37.0	0.26	0.02	0.06	0.03	0.02	0.02	0.02
Dust Collector		202.F.2	18.0	30.9	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Dust Collector		202.F.2	25.0	41.0	0.02	0.00	0.00	0.00	0.00	0.00	0.00
WaterBlaster (HydroPress)		202.F.2	174.0	18.9	0.05	0.00	0.01	0.01	0.00	0.00	0.00
Pump - N2 #101589			478.0	3.0	0.02	0.00	0.00	0.00	0.00	0.00	0.00
Sum of Engines with 20 < bhp < 100			**358.4**	**654.5**	**1.02**	**0.07**	**0.22**	**0.12**	**0.07**	**0.07**	**0.07**

B. Exempt External Combustion Calcs

Description	Device Specifications				NO_X	ROC	CO	SO_X	PM	PM_{10}	$PM_{2.5}$
	District ID#	Exemption Claimed	MMBtu/hr	hrs/yr	Tons Per Year (TPY)[b]						
TEG Reboiler E-121	002353	202.G.1	1.200	8,760	0.52	0.03	0.43	0.07	0.04	0.04	0.04
TEG Reboiler E-251	002352	202.G.1	1.400	8,760	0.60	0.03	0.51	0.08	0.05	0.05	0.05
Forced Air Furnace	008792	202.G.1	0.050	8,760	0.02	0.00	0.02	0.00	0.00	0.00	0.00
Sum of External Combustion Equipment			**2.650**		**1.137**	**0.063**	**0.956**	**0.154**	**0.087**	**0.087**	**0.087**

C. Other Exemption Calcs

Description	Device Specifications			NO_X	ROC	CO	SO_X	PM	PM_{10}	$PM_{2.5}$
	District ID#	Exemption Claimed	hrs/yr	Tons Per Year (TPY)						
Surface Coating-Maintenance		202.D.8		0.00	0.20	0.00	0.00	0.00	0.00	0.00
Abrasive Blasting		202.H.3		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sum of Other Exempt Equipment				**0.00**	**0.20**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Notes:

[a]Annual Emissions calculated using emission factors from AP-42, Table 3.3-1

[b]Annual Emissions for external combustion equipment calculated using emission factors from AP-42, Table 1.4-1 and Table 1.4-2

10.2 Equipment List

A PERMITTED EQUIPMENT

1 Boiler A

Device ID #	**002350**	***Device Name***	**Boiler A**
Rated Heat Input	41.000 MMBtu/Hour	*Physical Size*	
Manufacturer	Babcock-Wilcox	*Operator ID*	B-801A
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description			

2 Boiler Systems (800)

2.1 Amine Injection Package

Device ID #	**105500**	***Device Name***	**Amine Injection Package**
Rated Heat Input		*Physical Size*	400.00 Gallons
Manufacturer		*Operator ID*	A-812
Model		*Serial Number*	
Location Note	D-972-28C, POPCO Gas Plant		
Device Description	Includes injection pumps @ 16.5 gpm		

2.2 Boiler B

Device ID #	**002351**	***Device Name***	**Boiler B**
Rated Heat Input	41.000 MMBtu/Hour	*Physical Size*	
Manufacturer	Babcock-Wilcox	*Operator ID*	B-801B
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description			

2.3 Boiler Off-Gas Knockout Drum

Device ID #	**105524**	***Device Name***	**Boiler Off-Gas Knockout Drum**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-814
Model		*Serial Number*	
Location Note	D-972-28SS, POPCO Gas Plant		
Device Description	Boiler Off-Gas System; 6' ID x 8.58'+		

2.4 Chelant/Dispersant Injection Package

Device ID #	**105501**	***Device Name***	**Chelant/Dispersant Injection Package**
Rated Heat Input		*Physical Size*	150.00 Gallons
Manufacturer		*Operator ID*	A-811
Model		*Serial Number*	
Location Note	D-972-28E, POPCO Gas Plant		
Device Description	Includes day tank and injection pumps (5 gpm)		

2.5 Fuel Gas Knockout Drum

Device ID #	**105508**	***Device Name***	**Fuel Gas Knockout Drum**
Rated Heat Input		*Physical Size*	140.00 PSIG
Manufacturer		*Operator ID*	V-804
Model		*Serial Number*	
Location Note	D-972-28N, POPCO Gas Plant		
Device Description	2.5' ID x 8'		

3 Condensate System (800)

3.1 Condensate Coolers

Device ID #	**105503**	***Device Name***	**Condensate Coolers**
Rated Heat Input	1.780 MMBtu/Hour	*Physical Size*	230.00 PSIG
Manufacturer		*Operator ID*	E-802 A/B
Model		*Serial Number*	
Location Note	D-972-28J, POPCO Gas Plant		
Device Description	Duty: 1.55 x 1.15 MMBtu/hr		

4 Firewater/Stormwater System (800)

4.1 Firewater Pump (805)

Device ID #	**002359**	***Device Name***	**Firewater Pump (805)**
Rated Heat Input	3.230 MMBtu/Hour	*Physical Size*	420.00 Brake Horsepower
Manufacturer	Caterpillar	*Operator ID*	P-805
Model	3408 AT	*Serial Number*	67U10191
Location Note	D-972-28L, POPCO Gas Plant		
Device Description	420 hp diesel engine, Model Year 1982		

4.2 Firewater Pump (806)

Device ID #	**002356**	***Device Name***	**Firewater Pump (806)**
Rated Heat Input	3.230 MMBtu/Hour	*Physical Size*	420.00 Brake Horsepower
Manufacturer	Caterpillar	*Operator ID*	P-806
Model	3408 TA	*Serial Number*	67U10229
Location Note	D-972-28L, POPCO Gas Plant		
Device Description	420 bhp diesel engine, Model Year 1982		

4.3 Storm Water/Oil Water Separator

Device ID #	**105515**	***Device Name***	**Storm Water/Oil Water Separator**
Rated Heat Input		*Physical Size*	10000.00 gal/Minute
Manufacturer		*Operator ID*	V-813
Model		*Serial Number*	
Location Note	D-972-28Y,, POPCO Gas Plant		
Device Description	8' ID x 19'		

4.4 Stormwater Separator Pump

Device ID #	**105516**	***Device Name***	**Stormwater Separator Pump**
Rated Heat Input		*Physical Size*	20.00 gal/Minute
Manufacturer		*Operator ID*	P-820
Model		*Serial Number*	
Location Note	D-972-28Y, POPCO Gas Plant		
Device Description	1.5 hp electric motor, delta 23.9 psi		

5 Flare (800)

5.1 Flare KO Drum (Acid)

Device ID #	**105157**	***Device Name***	**Flare KO Drum (Acid)**
Rated Heat Input		*Physical Size*	1460.00 Gallons
Manufacturer		*Operator ID*	V-803
Model		*Serial Number*	
Location Note	D-972-28K, POPCO Gas Plant		
Device Description	5' x 9'		

5.2 Flare KO Drum (HC)

Device ID #	**105158**	***Device Name***	**Flare KO Drum (HC)**
Rated Heat Input		*Physical Size*	2180.00 Gallons
Manufacturer		*Operator ID*	V-802
Model		*Serial Number*	
Location Note	D-972-28K, POPCO Gas Plant		
Device Description			

5.3 Planned Continuous Flaring (Baseline System Leakage)

Device ID #	**107202**	***Device Name***	**Planned Continuous Flaring (Baseline System Leakage)**
Rated Heat Input		*Physical Size*	600.00 scf/Hour
Manufacturer	John Zink	*Operator ID*	A-803
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	Hydrocarbon and acid gas headers		

5.4 Planned Continuous Flaring (Compressor Seal Leakage)

Device ID #	**102615**	***Device Name***	**Planned Continuous Flaring (Compressor Seal Leakage)**
Rated Heat Input	1.080 MMBtu/Hour	*Physical Size*	311.00 scf/Hour
Manufacturer	John Zink	*Operator ID*	A-803
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	Acid Gas Header		

5.5 Planned Other - Startups/Maintenance

Device ID #	**102616**	***Device Name***	**Planned Other - Startups/Maintenance**
Rated Heat Input	900.930 MMBtu/Hour	*Physical Size*	0.76 MMscf/Hour
Manufacturer	John Zink	*Operator ID*	A-803
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	Startups (first 12 hours of SRU operation) and Maintenance		

5.6 Planned Pilot/Purge Flare

Device ID #	**102614**	***Device Name***	**Planned Pilot/Purge Flare**
Rated Heat Input	2.620	*Physical Size*	2200.00 scf/Hour
Manufacturer	John Zink	*Operator ID*	A-803
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description			

5.7 Unplanned Other - SRU Failure

Device ID #	**102617**	***Device Name***	**Unplanned Other - SRU Failure**
Rated Heat Input		*Physical Size*	1480.00
Manufacturer	John Zink	*Operator ID*	
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	SRU Failure, Max 1480 scf/event		

6 Fugitive HC Components - CLP - Gas/Cond Svc

6.1 Compressor Seals to Flare/VRU

Device ID #	**007079**	*Device Name*	**Compressor Seals to Flare/VRU**
Rated Heat Input		*Physical Size*	6.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description			

6.2 Flanges/Connections: Category F

Device ID #	**113978**	*Device Name*	**Flanges/Connections: Category F**
Rated Heat Input		*Physical Size*	156.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	Connections - Category F		

6.3 Gas Flanges/Connections

Device ID #	**007071**	*Device Name*	**Gas Flanges/Connections**
Rated Heat Input		*Physical Size*	7168.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	Moved 1302 f/c to Category C for enhanced inspection and maintenance per AP 11130		

6.4 Gas Flanges/Connections: Category B

Device ID #	**007072**	***Device Name***	**Gas Flanges/Connections: Category B**
Rated Heat Input		*Physical Size*	4375.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	AP 11130 changed naming convention from "E500" to Category B.		

6.5 Gas Flanges/Connections: Category C

Device ID #	**007073**	***Device Name***	**Gas Flanges/Connections: Category C**
Rated Heat Input		*Physical Size*	1875.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	Merged 1302 accessible and 573 "E100" F/C which are subject to 100 ppmv LDAR at 87% control efficiency per AP 11130.		

6.6 Gas Flanges/Connections: Unsafe

Device ID #	**007074**	***Device Name***	**Gas Flanges/Connections: Unsafe**
Rated Heat Input		*Physical Size*	615.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description			

6.7 Gas Relief Valves to Flare

Device ID #	**007075**	***Device Name***	**Gas Relief Valves to Flare**
Rated Heat Input		*Physical Size*	154.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description			

6.8 Gas Valves: Category B

Device ID #	**007068**	***Device Name***	**Gas Valves: Category B**
Rated Heat Input		*Physical Size*	1905.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	AP 11130 changed naming convention to "Category B". Also moved 434 clp to Category C per DOI 0034.		

6.9 Gas Valves: Category C

Device ID #	**106397**	***Device Name***	**Gas Valves: Category C**
Rated Heat Input		*Physical Size*	434.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	DOI 0034 and AP 11130 moved 434 Cat B to Cat C for enhanced monitoring.		

6.10 Gas Valves: Category F

Device ID #	**009712**	***Device Name***	**Gas Valves: Category F**
Rated Heat Input		*Physical Size*	269.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	Combines clps from the "E100", "LEV Accessible", and "LEV Inaccessible" groups which are subject to BACT at 100 ppmv LDAR with an assumed 90% control efficiency.		

6.11 Gas Valves: Category J

Device ID #	**007067**	***Device Name***	**Gas Valves: Category J**
Rated Heat Input		*Physical Size*	1100.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	A portion of the clps previously identified as "LEV Accessible"; which are subject to BARCT at 500 ppmv LDAR with 90% control efficiency.		

6.12 Gas Valves: Sealess (Bellows)

Device ID #	**007066**	***Device Name***	**Gas Valves: Sealess (Bellows)**
Rated Heat Input		*Physical Size*	631.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description			

6.13 Gas Valves: Unsafe

Device ID #	**007070**	***Device Name***	**Gas Valves: Unsafe**
Rated Heat Input		*Physical Size*	32.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	Includes low-emitting (10) and standard valves considered unsafe.		

6.14 Pump Seals - Single

Device ID #	**007081**	***Device Name***	**Pump Seals - Single**
Rated Heat Input		*Physical Size*	2.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description			

6.15 Pump Seals - Tandem

Device ID #	**007080**	***Device Name***	**Pump Seals - Tandem**
Rated Heat Input		*Physical Size*	10.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description			

7 Fugitive HC Components - CLP - Oil Service

7.1 Oil Service Flanges/Connections: Accessible/Inaccessible

Device ID #	**113980**	***Device Name***	**Oil Service Flanges/Connections: Accessible/Inaccessible**
Rated Heat Input		*Physical Size*	6.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	New Category Created:		

7.2 Oil Service Valves: Accessible/Inaccessible

Device ID #	**113979**	***Device Name***	**Oil Service Valves: Accessible/Inaccessible**
Rated Heat Input		*Physical Size*	2.00 Component Leakpath
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description			

8 Gas Pig Receiver

Device ID #	**106398**	***Device Name***	**Gas Pig Receiver**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	A-50
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description			

9 Gas Processing Unit (100)

9.1 Bypass Separator

Device ID #	**105230**	*Device Name*	**Bypass Separator**
Rated Heat Input		*Physical Size*	9386.00 Gallons
Manufacturer		*Operator ID*	V-105
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	7' ID x 30'		

9.2 Feed Gas Water Separator

Device ID #	**105221**	*Device Name*	**Feed Gas Water Separator**
Rated Heat Input		*Physical Size*	1600.00 Gallons
Manufacturer		*Operator ID*	V-100 A/B
Model		*Serial Number*	
Location Note	D-972-21B, POPCO Gas Plant		
Device Description	4' ID x 15'8"		

9.3 Flare Knockout Pot

Device ID #	**105229**	*Device Name*	**Flare Knockout Pot**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-103
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	1' x 2.25'		

9.4 Gas Chillers

Device ID #	**105226**	*Device Name*	**Gas Chillers**
Rated Heat Input	2.250 MMBtu/Hour	*Physical Size*	
Manufacturer		*Operator ID*	E-103 A/B
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description			

9.5 Gas/Gas Exchanger

Device ID #	**105224**	*Device Name*	**Gas/Gas Exchanger**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	E-101 A/B/C/D
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description			

9.6 Gas/Stabilizer Feed Exchanger

Device ID #	**105225**	*Device Name*	**Gas/Stabilizer Feed Exchanger**
Rated Heat Input	0.880 MMBtu/Hour	*Physical Size*	
Manufacturer		*Operator ID*	E-102 A
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description			

9.7 Main Separators

Device ID #	**105227**	*Device Name*	**Main Separators**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-102 A/B
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	6' ID x 30'		

9.8 Methanol Injection Pumps

Device ID #	**105273**	***Device Name***	**Methanol Injection Pumps**
Rated Heat Input		*Physical Size*	25.00 gal/Minute
Manufacturer		*Operator ID*	P-103 A/B
Model		*Serial Number*	
Location Note	D-972-21BB, POPCO Gas Plant		
Device Description	1000 psig max		

9.9 Methanol Tank

Device ID #	**102620**	***Device Name***	**Methanol Tank**
Rated Heat Input		*Physical Size*	146100.00 Gallons
Manufacturer		*Operator ID*	T-111
Model		*Serial Number*	
Location Note	D-972-21BB , POPCO Gas Plant		
Device Description	10' ID x 21', 250 bbl		

9.10 NGL Booster Pump

Device ID #	**105274**	***Device Name***	**NGL Booster Pump**
Rated Heat Input		*Physical Size*	40.00 gal/Minute
Manufacturer		*Operator ID*	P-105
Model		*Serial Number*	
Location Note	D-972-21EE, POPCO Gas Plant		
Device Description	230 delta psi		

9.11 NGL Product Pumps

Device ID #	**105272**	***Device Name***	**NGL Product Pumps**
Rated Heat Input		*Physical Size*	518.00 gal/Minute
Manufacturer		*Operator ID*	P-102 A/B
Model		*Serial Number*	
Location Note	D-972-21W, POPCO Gas Plant		
Device Description	39.8 delta psi		

9.12 NGL Storage Tank #1

Device ID #	**105267**	***Device Name***	**NGL Storage Tank #1**
Rated Heat Input		*Physical Size*	89000.00 Gallons
Manufacturer		*Operator ID*	T-101
Model		*Serial Number*	
Location Note	D-972-21V, POPCO Gas Plant		
Device Description	10' 10" ID x 122', 130 psig @ 300 deg F		

9.13 NGL Storage Tank #2

Device ID #	**105268**	***Device Name***	**NGL Storage Tank #2**
Rated Heat Input		*Physical Size*	89000.00 Gallons
Manufacturer		*Operator ID*	T-102
Model		*Serial Number*	
Location Note	D-972-21V, POPCO Gas Plant		
Device Description	10' 10" ID x 122', 130 psig @ 300 deg F		

9.14 NGL Storage Tank #3

Device ID #	**105269**	***Device Name***	**NGL Storage Tank #3**
Rated Heat Input		*Physical Size*	89000.00 Gallons
Manufacturer		*Operator ID*	T-103
Model		*Serial Number*	
Location Note	D-972-21V, POPCO Gas Plant		
Device Description	10' 10" ID x 122', 130 psig @ 300 deg F		

9.15 NGL Storage Tank #4

Device ID #	**105270**	***Device Name***	**NGL Storage Tank #4**
Rated Heat Input		*Physical Size*	89000.00 Gallons
Manufacturer		*Operator ID*	T-104
Model		*Serial Number*	
Location Note	D-972-21V, POPCO Gas Plant		
Device Description	10' 10" ID x 122', 130 psig @ 300 deg F		

9.16 NGL Storage Tank #5

Device ID #	**105271**	***Device Name***	**NGL Storage Tank #5**
Rated Heat Input		*Physical Size*	89448.00 Gallons
Manufacturer		*Operator ID*	T-105
Model		*Serial Number*	
Location Note	D-972-21W, POPCO Gas Plant		
Device Description	10' 10" ID x 122', 130 psig @ 300 deg F		

9.17 NGL Transfer Pump

Device ID #	**105275**	***Device Name***	**NGL Transfer Pump**
Rated Heat Input		*Physical Size*	40.00 gal/Minute
Manufacturer		*Operator ID*	P-106
Model		*Serial Number*	
Location Note	D-972-21FF, POPCO Gas Plant		
Device Description	445 delta psi		

9.18 Stabilizer

Device ID #	**105233**	***Device Name***	**Stabilizer**
Rated Heat Input		*Physical Size*	10293.00 Gallons
Manufacturer		*Operator ID*	V-106
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	4.5' ID x 85'		

9.19 Stabilizer Feed/Bottoms Exchanger

Device ID #	**105232**	***Device Name***	**Stabilizer Feed/Bottoms Exchanger**
Rated Heat Input	1.330 MMBtu/Hour	*Physical Size*	
Manufacturer		*Operator ID*	E-104 A
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description			

9.20 Stabilizer Overhead Condenser

Device ID #	**105235**	***Device Name***	**Stabilizer Overhead Condenser**
Rated Heat Input	1.610 MMBtu/Hour	*Physical Size*	
Manufacturer		*Operator ID*	E-105 A
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description			

9.21 Stabilizer Pumps

Device ID #	**105237**	***Device Name***	**Stabilizer Pumps**
Rated Heat Input		*Physical Size*	39.20 gal/Minute
Manufacturer		*Operator ID*	P-101 A/B
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	Rated @ 53.5 psi		

9.22 Stabilizer Reboiler

Device ID #	**105234**	***Device Name***	**Stabilizer Reboiler**
Rated Heat Input	4.360 MMBtu/Hour	*Physical Size*	
Manufacturer		*Operator ID*	E-106 A/B
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description			

9.23 Stabilizer Reflux Accumulator

Device ID #	**105236**	***Device Name***	**Stabilizer Reflux Accumulator**
Rated Heat Input		*Physical Size*	1676.00 Gallons
Manufacturer		*Operator ID*	V-107
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	4' ID x 16.5'		

9.24 TEG Contactor

Device ID #	**105222**	***Device Name***	**TEG Contactor**
Rated Heat Input		*Physical Size*	4320.00 Gallons
Manufacturer		*Operator ID*	V-101
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	4.5' ID x 33'		

9.25 Water Separator

Device ID #	**105228**	***Device Name***	**Water Separator**
Rated Heat Input		*Physical Size*	7245.00 Gallons
Manufacturer		*Operator ID*	V-104 A
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	6' ID x 30'		

10 Glycol Dehydrator: Regenerator Vent

Device ID #	**002360**	***Device Name***	**Glycol Dehydrator: Regenerator Vent**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description			

11 Housekeeping Drain System (800)

11.1 Housekeeping Drain Pump

Device ID #	**105507**	***Device Name***	**Housekeeping Drain Pump**
Rated Heat Input		*Physical Size*	20.00 gal/Minute
Manufacturer		*Operator ID*	P-819
Model		*Serial Number*	
Location Note	D-972-28M, POPCO Gas Plant		
Device Description	delta 16.8 psi, 1 hp electric motor		

11.2 Housekeeping Drain Vessel

Device ID #	**105506**	***Device Name***	**Housekeeping Drain Vessel**
Rated Heat Input		*Physical Size*	50.00 PSIG
Manufacturer		*Operator ID*	V-812
Model		*Serial Number*	
Location Note	D-972-28M, POPCO Gas Plant		
Device Description	5' ID x 6',		

12 Instrument Air (800)

12.1 Emergency Air Generator

Device ID #	**002357**	***Device Name***	**Emergency Air Generator**
Rated Heat Input		*Physical Size*	111.00 Brake Horsepower
Manufacturer	Duetz	*Operator ID*	K-802
Model	F6L912HO	*Serial Number*	152182 U85 942
Location Note	D-972-28S, POPCO Gas Plant		
Device Description	Manufacture date: 12/09/1985; Compressor delivery of 375 CFM @ 100 PSIG. Ingersoll Rand, P-375-WD		

13 Plant Refrigeration/GPU (150)

13.1 1st Stage Refrigerant Scrubber

Device ID #	**105261**	***Device Name***	**1st Stage Refrigerant Scrubber**
Rated Heat Input		*Physical Size*	1800.00 Gallons
Manufacturer		*Operator ID*	V-152
Model		*Serial Number*	
Location Note	D-972-21P, POPCO Gas Plant		
Device Description	4.5' ID x 13.5'; 135 psig		

13.2 1st Stage Suction Pulsation Bottle

Device ID #	**105263**	***Device Name***	**1st Stage Suction Pulsation Bottle**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-155 A/B
Model		*Serial Number*	
Location Note	D-972-21R and D-972-21S, POPCO Gas Plant		
Device Description	2' OD x 8' 4"		

13.3 2nd Stage Refrigerant Scrubber

Device ID #	**105262**	***Device Name***	**2nd Stage Refrigerant Scrubber**
Rated Heat Input		*Physical Size*	1800.00 Gallons
Manufacturer		*Operator ID*	V-153
Model		*Serial Number*	
Location Note	D-972-21P, POPCO Gas Plant		
Device Description	4.5' ID x 13.5'; 135 psig		

13.4 2nd Stage Suction Pulsation Bottle

Device ID #	**105264**	***Device Name***	**2nd Stage Suction Pulsation Bottle**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-156 A/B
Model		*Serial Number*	
Location Note	D-972-21R and D-972-21S, POPCO Gas Plant		
Device Description	2' OD x 5' 4"		

13.5 Flash/Gas Refrigerant Exchanger

Device ID #	**105231**	***Device Name***	**Flash/Gas Refrigerant Exchanger**
Rated Heat Input	0.360 MMBtu/Hour	*Physical Size*	
Manufacturer		*Operator ID*	E-152 A
Model		*Serial Number*	
Location Note	D-972-21J, POPCO Gas Plant		
Device Description			

13.6 Refrigerant Compressor

Device ID #	**105265**	*Device Name*	**Refrigerant Compressor**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	K-150 A/B
Model		*Serial Number*	
Location Note	D-972-21R and D-972-21S, POPCO Gas Plant		
Device Description	1st stage: 2441 scfm, 63 psi; 2nd stage: 5508 scfm;, 80.5 psi; 3rd stage: 5508 scfm, 131.1 psi		

13.7 Refrigerant Condenser

Device ID #	**105266**	*Device Name*	**Refrigerant Condenser**
Rated Heat Input	5.560 MMBtu/Hour	*Physical Size*	
Manufacturer		*Operator ID*	E-151 A/B
Model		*Serial Number*	
Location Note	D-972-21U, POPCO Gas Plant		
Device Description	Duty: 4.84 x 1.15 MMBtu/hr		

13.8 Refrigerant Flash Tank

Device ID #	**105260**	*Device Name*	**Refrigerant Flash Tank**
Rated Heat Input		*Physical Size*	1204.00 Gallons
Manufacturer		*Operator ID*	V-154
Model		*Serial Number*	
Location Note	D-972-21N, POPCO Gas Plant		
Device Description	4' ID x 13.5'		

13.9 Refrigerant Make-Up Pump

Device ID #	**105258**	*Device Name*	**Refrigerant Make-Up Pump**
Rated Heat Input		*Physical Size*	55.00 gal/Minute
Manufacturer		*Operator ID*	P-151
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description			

13.10 Refrigerant Surge Tank

Device ID #	**105259**	*Device Name*	**Refrigerant Surge Tank**
Rated Heat Input		*Physical Size*	13900.00 Gallons
Manufacturer		*Operator ID*	V-151
Model		*Serial Number*	
Location Note	D-972-21N, POPCO Gas Plant		
Device Description	8.5' ID x 30'		

14 Pressure Drain System (800)

14.1 Pressure Drain Pump

Device ID #	**105511**	*Device Name*	**Pressure Drain Pump**
Rated Heat Input		*Physical Size*	75.00 gal/Minute
Manufacturer		*Operator ID*	P-811
Model		*Serial Number*	
Location Note	D-972-28V, POPCO Gas Plant		
Device Description	3 hp electric motor, delta 22.7 psi		

14.2 Pressure Drain Vessel

Device ID #	**105510**	***Device Name***	**Pressure Drain Vessel**
Rated Heat Input		*Physical Size*	50.00 PSIG
Manufacturer		*Operator ID*	V-809
Model		*Serial Number*	
Location Note	D-972-28V, POPCO Gas Plant		
Device Description	5.5' ID x 8'		

15 Recompression (220)

15.1 1st Stage Discharge Pulsation Bottle

Device ID #	**105456**	***Device Name***	**1st Stage Discharge Pulsation Bottle**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-221 A
Model		*Serial Number*	
Location Note	D-972-22N, POPCO Gas Plant		
Device Description	1.5' OD x 7.5'		

15.2 1st Stage Discharge Pulsation Bottle B

Device ID #	**105464**	***Device Name***	**1st Stage Discharge Pulsation Bottle B**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-221 B
Model		*Serial Number*	
Location Note	D-972-22P, POPCO Gas Plant		
Device Description	1.5' OD x 7.5'		

15.3 1st Stage Suction Pulsation Bottle

Device ID #	**105451**	***Device Name***	**1st Stage Suction Pulsation Bottle**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-220 A
Model		*Serial Number*	
Location Note	D-972-22N, POPCO Gas Plant		
Device Description	1.5' OD x 9.5'		

15.4 1st Stage Suction Pulsation Bottle B

Device ID #	**105463**	***Device Name***	**1st Stage Suction Pulsation Bottle B**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-220 B
Model		*Serial Number*	
Location Note	D-972-22P, POPCO Gas Plant		
Device Description	1.5' OD x 9.5'		

15.5 2nd Stage Discharge Pulsation Bottle

Device ID #	**105459**	***Device Name***	**2nd Stage Discharge Pulsation Bottle**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-223 A
Model		*Serial Number*	
Location Note	D-972-22N, POPCO Gas Plant		
Device Description	1.2' OD x 8.67'		

15.6 2nd Stage Discharge Pulsation Bottle B

Device ID #	**105467**	***Device Name***	**2nd Stage Discharge Pulsation Bottle B**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-223 B
Model		*Serial Number*	
Location Note	D-972-22P, POPCO Gas Plant		
Device Description	1.2' OD x 8.67'		

15.7 2nd Stage Suction Disentrainment Separator

Device ID #	**105461**	***Device Name***	**2nd Stage Suction Disentrainment Separator**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-224 A
Model		*Serial Number*	
Location Note	D-972-22N, POPCO Gas Plant		
Device Description	K-220 Interstage Knockout Vessel; 1.2' OD x 12'		

15.8 2nd Stage Suction Disentrainment Separator B

Device ID #	**105469**	***Device Name***	**2nd Stage Suction Disentrainment Separator B**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-224 B
Model		*Serial Number*	
Location Note	D-972-22P, POPCO Gas Plant		
Device Description	1.2' OD x 6.9'		

15.9 2nd Stage Suction Pulsation Bottle

Device ID #	**105470**	***Device Name***	**2nd Stage Suction Pulsation Bottle**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-222 A
Model		*Serial Number*	
Location Note	D-972-22N, POPCO Gas Plant		
Device Description	1.2' OD x 9.67'		

15.10 2nd Stage Suction Pulsation Bottle B

Device ID #	**105466**	***Device Name***	**2nd Stage Suction Pulsation Bottle B**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-222 B
Model		*Serial Number*	
Location Note	D-972-22P, POPCO Gas Plant		
Device Description	1.5' OD x 7.5'		

15.11 Recompressor A

Device ID #	**105462**	***Device Name***	**Recompressor A**
Rated Heat Input		*Physical Size*	4087.00 scf/Minute
Manufacturer		*Operator ID*	K-220 A
Model		*Serial Number*	
Location Note	D-972-22N, POPCO Gas Plant		
Device Description	1st and 2nd stages		

15.12 Recompressor B

Device ID #	**105465**	***Device Name***	**Recompressor B**
Rated Heat Input		*Physical Size*	4087.00 scf/Minute
Manufacturer		*Operator ID*	K-220 B
Model		*Serial Number*	
Location Note	D-972-22P, POPCO Gas Plant		
Device Description			

15.13 Recompressor Gas Cooler

Device ID #	**105471**	***Device Name***	**Recompressor Gas Cooler**
Rated Heat Input	0.790 MMBtu/Hour	*Physical Size*	
Manufacturer		*Operator ID*	E-220 A/B
Model		*Serial Number*	
Location Note	D-972-22S, POPCO Gas Plant		
Device Description	Duty: 0.691 x 1.15 MMBtu/hr		

15.14 Recompressor Intercooler

Device ID #	**105460**	***Device Name***	**Recompressor Intercooler**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	E-221 A
Model		*Serial Number*	
Location Note	D-972-22N, POPCO Gas Plant		
Device Description			

15.15 Recompressor Intercooler B

Device ID #	**105468**	***Device Name***	**Recompressor Intercooler B**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	E-221 B
Model		*Serial Number*	
Location Note	D-972-22P, POPCO Gas Plant		
Device Description			

16 Sales Gas Compression (300)

16.1 Coalescing Filter

Device ID #	**105478**	***Device Name***	**Coalescing Filter**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	A-301
Model		*Serial Number*	
Location Note	D-972-23A, POPCO Gas Plant		
Device Description	20" ID x 7' 8"; Knockout Separator		

16.2 Discharge Pulsation Bottle A

Device ID #	**105486**	***Device Name***	**Discharge Pulsation Bottle A**
Rated Heat Input		*Physical Size*	1150.00 PSIG
Manufacturer		*Operator ID*	V-301 A
Model		*Serial Number*	
Location Note	D-972-23A, POPCO Gas Plant		
Device Description	1.33' OD x 27.67'		

16.3 Discharge Pulsation Bottle B

Device ID #	**105487**	***Device Name***	**Discharge Pulsation Bottle B**
Rated Heat Input		*Physical Size*	1150.00 PSIG
Manufacturer		*Operator ID*	V-301 B
Model		*Serial Number*	
Location Note	D-972-23B, POPCO Gas Plant		
Device Description	1.33' OD x 21.67'		

16.4 Knockout Drum

Device ID #	**105472**	***Device Name***	**Knockout Drum**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-302
Model		*Serial Number*	
Location Note	D-972-23A, POPCO Gas Plant		
Device Description	7' ID x 10'		

16.5 Sales Gas Compressor A

Device ID #	**105480**	***Device Name***	**Sales Gas Compressor A**
Rated Heat Input		*Physical Size*	29.30 MMscf/Day
Manufacturer		*Operator ID*	K-300 A
Model		*Serial Number*	
Location Note	D-972-23A, POPCO Gas Plant		
Device Description	600 hp electric motor		

16.6 Sales Gas Compressor B

Device ID #	**105482**	***Device Name***	**Sales Gas Compressor B**
Rated Heat Input		*Physical Size*	29.30 MMscf/Day
Manufacturer		*Operator ID*	K-300 B
Model		*Serial Number*	
Location Note	D-972-23B, POPCO Gas Plant		
Device Description	electric motor 600 hp, delta 214 psig		

16.7 Sales Gas Cooler A

Device ID #	**105483**	***Device Name***	**Sales Gas Cooler A**
Rated Heat Input	1.070 MMBtu/Hour	*Physical Size*	1125.00 PSIG
Manufacturer		*Operator ID*	E-300 A
Model		*Serial Number*	
Location Note	D-972-23D, POPCO Gas Plant		
Device Description	Duty: 0.934 x 1.15 MMBtu/hr		

16.8 Sales Gas Coolers

Device ID #	**105484**	***Device Name***	**Sales Gas Coolers**
Rated Heat Input	2.230 MMBtu/Hour	*Physical Size*	1125.00 PSIG
Manufacturer		*Operator ID*	E-301 A/B
Model		*Serial Number*	
Location Note	D-972-23D, POPCO Gas Plant		
Device Description	Duty: 1.946 x 1.15 MMBtu/hr		

16.9 Sales Gas Evaporative Cooler Water Pump

Device ID #	**105485**	***Device Name***	**Sales Gas Evaporative Cooler Water Pump**
Rated Heat Input		*Physical Size*	50.00 gal/Minute
Manufacturer		*Operator ID*	P-301
Model		*Serial Number*	
Location Note	D-972-23D, POPCO Gas Plant		
Device Description	delta 21 psig		

16.10 Suction Pulsation Bottle A/B

Device ID #	**105479**	***Device Name***	**Suction Pulsation Bottle A/B**
Rated Heat Input		*Physical Size*	955.00 PSIG
Manufacturer		*Operator ID*	V-300 A/B
Model		*Serial Number*	
Location Note	D-972-23A, POPCO Gas Plant		
Device Description	1.5' OD x 9.67'		

16.11 Suction Pulsation Bottle C/D

Device ID #	**105481**	***Device Name***	**Suction Pulsation Bottle C/D**
Rated Heat Input		*Physical Size*	955.00 PSIG
Manufacturer		*Operator ID*	V-300 C/D
Model		*Serial Number*	
Location Note	D-972-23B, POPCO Gas Plant		
Device Description	1.5' OD x 9.67'		

17 Section 500

17.1 Contact Condenser Cooler

Device ID #	**105528**	***Device Name***	**Contact Condenser Cooler**
Rated Heat Input	5.050 MMBtu/Hour	*Physical Size*	
Manufacturer		*Operator ID*	E-A503
Model		*Serial Number*	
Location Note	D-11-MP-3, POPCO Gas Plant		
Device Description			

17.2 Contact Condenser Pump & Common Spare

Device ID #	**105530**	***Device Name***	**Contact Condenser Pump & Common Spare**
Rated Heat Input		*Physical Size*	350.00 gal/Minute
Manufacturer		*Operator ID*	P-A503, A504
Model		*Serial Number*	
Location Note	D-11-MP-3, POPCO Gas Plant		
Device Description	10 hp electric motor		

17.3 Desuperheater Pump

Device ID #	**105529**	***Device Name***	**Desuperheater Pump**
Rated Heat Input		*Physical Size*	350.00 gal/Minute
Manufacturer		*Operator ID*	P-A502
Model		*Serial Number*	
Location Note	D-11-MP-3. POPCO Gas Plant		
Device Description	15 hp electric motor, delta 26.7 psi		

17.4 Desuperheater/Contact Condenser

Device ID #	**105527**	*Device Name*	**Desuperheater/Contact Condenser**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-A501
Model		*Serial Number*	
Location Note	D-11-MP-3, POPCO Gas Plant		
Device Description	4.5' ID x 46'		

17.5 Hydrogenation Reactor

Device ID #	**105525**	*Device Name*	**Hydrogenation Reactor**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	R-A501
Model		*Serial Number*	
Location Note	D-11-MP-2, POPCO Gas Plant		
Device Description	7' ID x 12'		

17.6 Reactor Effluent Cooler

Device ID #	**105526**	*Device Name*	**Reactor Effluent Cooler**
Rated Heat Input	2.850 MMBtu/Hour	*Physical Size*	
Manufacturer		*Operator ID*	E-A501
Model		*Serial Number*	
Location Note	D-11-MP-2, POPCO Gas Plant		
Device Description			

17.7 Steam Generator

Device ID #	**105492**	***Device Name***	**Steam Generator**
Rated Heat Input	2.040 MMBtu/Hour	*Physical Size*	75.00 PSIG
Manufacturer		*Operator ID*	E-A502
Model		*Serial Number*	
Location Note	D-972-26B, POPCO Gas Plant		
Device Description	A part of SWS Unit		

18 Solvent Usage

18.1 Solvent Usage: Cleaning/Degreasing

Device ID #	**008662**	***Device Name***	**Solvent Usage: Cleaning/Degreasing**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description			

19 Sour Gas Treating Unit (Sulfinol) (200)

19.1 Absorber

Device ID #	**105300**	***Device Name***	**Absorber**
Rated Heat Input		*Physical Size*	2550.00 Gallons
Manufacturer		*Operator ID*	A-204
Model		*Serial Number*	
Location Note	D-972-22E1, POPCO Gas Plant		
Device Description	7' Diameter x 7.66'; 150 psig @ 300 deg F; 8000 lb carbon capacity		

19.2 Antifoam Injection Tank

Device ID #	**105284**	***Device Name***	**Antifoam Injection Tank**
Rated Heat Input		*Physical Size*	5.00 Gallons
Manufacturer		*Operator ID*	V-218
Model		*Serial Number*	
Location Note	D-972-22C1, POPCO Gas Plant		
Device Description	10" sch 80 pipe x 1'; 250 psig @ 100 deg F		

19.3 Chemical Fill Pot

Device ID #	**105342**	***Device Name***	**Chemical Fill Pot**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-216
Model		*Serial Number*	
Location Note	D-972-22H, POPCO Gas Plant		
Device Description	10' ID x 12"; 250 psig @ 100 deg F		

19.4 Fuel Gas Contactor

Device ID #	**104832**	***Device Name***	**Fuel Gas Contactor**
Rated Heat Input		*Physical Size*	549.00 Gallons
Manufacturer		*Operator ID*	V-203
Model		*Serial Number*	
Location Note	D-972-22C1, POPCO Gas Plant		
Device Description	1.5 ft diameter by 37 ft high		

19.5 GPU TEG Flash Gas KO Pot

Device ID #	**104830**	***Device Name***	**GPU TEG Flash Gas KO Pot**
Rated Heat Input		*Physical Size*	13.70 Gallons
Manufacturer		*Operator ID*	V-215
Model		*Serial Number*	
Location Note	D-972-22B, POPCO Gas Plant		
Device Description	12' x 18'; 175 psig @ 300 deg F		

19.6 High Pressure Contactor

Device ID #	**105278**	***Device Name***	**High Pressure Contactor**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-201
Model		*Serial Number*	
Location Note	D-972-22A, POPCO Gas Plant		
Device Description	5.5' ID x 93'; 1155 psig @ 300 deg F		

19.7 Knockout Drum

Device ID #	**105277**	***Device Name***	**Knockout Drum**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-210
Model		*Serial Number*	
Location Note	D-972-22A, POPCO Gas Plant		
Device Description	7.5' ID x 10'; 1210 psig @ 171 deg F		

19.8 Lean Solvent Booster Pumps

Device ID #	**105302**	***Device Name***	**Lean Solvent Booster Pumps**
Rated Heat Input		*Physical Size*	715.00 gal/Minute
Manufacturer		*Operator ID*	P-202 A/B/C
Model		*Serial Number*	
Location Note	D-972-22E1, POPCO Gas Plant		
Device Description	Delta 384.2 psi		

19.9 Lean Solvent Pumps

Device ID #	**105285**	***Device Name***	**Lean Solvent Pumps**
Rated Heat Input		*Physical Size*	400.00 gal/Minute
Manufacturer		*Operator ID*	P-201 A/B/C
Model		*Serial Number*	
Location Note	D-972-22C2, POPCO Gas Plant		
Device Description	delta 604.8 psi		

19.10 Lean Solver Cooler

Device ID #	**105286**	***Device Name***	**Lean Solver Cooler**
Rated Heat Input	16.200 MMBtu/Hour	*Physical Size*	
Manufacturer		*Operator ID*	E-201 A/B/C/D
Model		*Serial Number*	
Location Note	D-972-22D1, POPCO Gas Plant		
Device Description	Duty: 14.09 x 1.15 MMBtu/hr		

19.11 Lean/Rich Solvent Exchanger

Device ID #	**105287**	***Device Name***	**Lean/Rich Solvent Exchanger**
Rated Heat Input	22.480 MMBtu/Hour	*Physical Size*	
Manufacturer		*Operator ID*	E-202 A/B/C/D/E/F
Model		*Serial Number*	
Location Note	D-972-22D2, POPCO Gas Plant		
Device Description	Duty: 19.55 x 1.15 MMBtu/hr		

19.12 Low Pressure Contactor

Device ID #	**105280**	***Device Name***	**Low Pressure Contactor**
Rated Heat Input		*Physical Size*	14290.00 Gallons
Manufacturer		*Operator ID*	V-202
Model		*Serial Number*	
Location Note	D-972-22B, POPCO Gas Plant		
Device Description	4.5' ID x 103.5'; 400 psig @ 300 deg F		

19.13 Low Pressure Flash Tank

Device ID #	**104833**	***Device Name***	**Low Pressure Flash Tank**
Rated Heat Input		*Physical Size*	4413.00 Gallons
Manufacturer		*Operator ID*	V-211
Model		*Serial Number*	
Location Note	D-972-22C1, POPCO Gas Plant		
Device Description	5.5 ft dia by 24 ft high; 175 psig @ 250 deg F		

19.14 Low Pressure Scrubber

Device ID #	**105281**	***Device Name***	**Low Pressure Scrubber**
Rated Heat Input		*Physical Size*	321.00 Gallons
Manufacturer		*Operator ID*	V-207
Model		*Serial Number*	
Location Note	D-972-22B, POPCO Gas Plant		
Device Description	2.5' ID x 8'; 400 psig @ 250 deg F		

19.15 PDS/TDS/SDS Sour Gas Eductor

Device ID #	**105282**	***Device Name***	**PDS/TDS/SDS Sour Gas Eductor**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	J-203
Model		*Serial Number*	
Location Note	D-972-22C1, POPCO Gas Plant		
Device Description			

19.16 Reclaimer

Device ID #	**105341**	***Device Name***	**Reclaimer**
Rated Heat Input		*Physical Size*	254.00 Gallons
Manufacturer		*Operator ID*	V-205
Model		*Serial Number*	
Location Note	D-972-22G, POPCO Gas Plant		
Device Description	14" sch 40 pipe x 23' plus 20" sch 40 pipe x 6'; 100 psig @ 500 deg F		

19.17 Reflux SuperHeater

Device ID #	**105340**	*Device Name*	**Reflux SuperHeater**
Rated Heat Input		*Physical Size*	38.75 Kilowatts
Manufacturer		*Operator ID*	E-206
Model		*Serial Number*	
Location Note	D-972-22G, POPCO Gas Plant		
Device Description	Duty: 33.7 x 1.15 kW		

19.18 Reflux Vaporizer

Device ID #	**105339**	*Device Name*	**Reflux Vaporizer**
Rated Heat Input	1.790 MMBtu/Hour	*Physical Size*	
Manufacturer		*Operator ID*	E-205
Model		*Serial Number*	
Location Note	D-972-22G, POPCO Gas Plant		
Device Description	Duty: 1.56 x 1.15 MMBtu/hr		

19.19 Solvent Drain Filter

Device ID #	**105344**	*Device Name*	**Solvent Drain Filter**
Rated Heat Input		*Physical Size*	80.00 gal/Minute
Manufacturer		*Operator ID*	A-202
Model		*Serial Number*	
Location Note	D-972-22H, POPCO Gas Plant		
Device Description	delta 5 psi clean, 30 psi dirty; 140 psig @ 200 deg F		

19.20 Sour Gas Eductor

Device ID #	**105303**	*Device Name*	**Sour Gas Eductor**
Rated Heat Input		*Physical Size*	12.50 scf/Minute
Manufacturer		*Operator ID*	J-201
Model		*Serial Number*	
Location Note	D-972-22E2, POPCO Gas Plant		
Device Description	12.5 scfm @ 14 psia		

19.21 Sour Gas Eductor

Device ID #	**104834**	***Device Name***	**Sour Gas Eductor**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	J-202 A/B
Model		*Serial Number*	
Location Note	D-972-22C1, POPCO Gas Plant		
Device Description			

19.22 Stripper

Device ID #	**105304**	***Device Name***	**Stripper**
Rated Heat Input		*Physical Size*	31900.00 Gallons
Manufacturer		*Operator ID*	V-204
Model		*Serial Number*	
Location Note	D-972-22E2, POPCO Gas Plant		
Device Description	7.5' ID x 72'		

19.23 Stripper Overhead Condenser

Device ID #	**105306**	***Device Name***	**Stripper Overhead Condenser**
Rated Heat Input	6.820 MMBtu/Hour	*Physical Size*	
Manufacturer		*Operator ID*	E-203 A/B
Model		*Serial Number*	
Location Note	D-972-22F, POPCO Gas Plant		
Device Description	Duty: 5.93 x 1.15 MMBtu/hr		

19.24 Stripper Reboiler

Device ID #	**105305**	***Device Name***	**Stripper Reboiler**
Rated Heat Input	22.480 MMBtu/Hour	*Physical Size*	
Manufacturer		*Operator ID*	E-204 A/B
Model		*Serial Number*	
Location Note	D-972-22E2, POPCO Gas Plant		
Device Description	Duty: 19.55 x 1.15 MMBtu/hr		

19.25 Stripper Reflux Accumulator

Device ID #	**105308**	***Device Name***	**Stripper Reflux Accumulator**
Rated Heat Input		*Physical Size*	621.00 Gallons
Manufacturer		*Operator ID*	V-209
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	3.5' ID x 8'; 100 psig @ 325 deg F		

19.26 Stripper Reflux Pumps

Device ID #	**105307**	***Device Name***	**Stripper Reflux Pumps**
Rated Heat Input		*Physical Size*	20.00 gal/Minute
Manufacturer		*Operator ID*	P-203 A/B
Model		*Serial Number*	
Location Note	D-972-22F, POPCO Gas Plant		
Device Description	Delta 56.76 psi		

19.27 Sulfinol Carbon Filters

Device ID #	**105301**	***Device Name***	**Sulfinol Carbon Filters**
Rated Heat Input		*Physical Size*	150.00 gal/Minute
Manufacturer		*Operator ID*	A-205 A/B
Model		*Serial Number*	
Location Note	D-972-22E1, POPCO Gas Plant		
Device Description	300 psig @ 500 deg F		

19.28 Sulfinol Drain Pump

Device ID #	**105345**	***Device Name***	**Sulfinol Drain Pump**
Rated Heat Input		*Physical Size*	20.00 gal/Minute
Manufacturer		*Operator ID*	P-205
Model		*Serial Number*	
Location Note	D-972-22H, POPCO Gas Plant		
Device Description	delta 93.7 psi		

19.29 Sulfinol Drain Vessel

Device ID #	**105343**	***Device Name***	**Sulfinol Drain Vessel**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-214
Model		*Serial Number*	
Location Note	D-972-22H, POPCO Gas Plant		
Device Description	5' ID x 5'; 50 psig & 12" H20 vacuum @ 350 deg F		

19.30 TEG Contactor

Device ID #	**105346**	***Device Name***	**TEG Contactor**
Rated Heat Input		*Physical Size*	4320.00 Gallons
Manufacturer		*Operator ID*	V-212
Model		*Serial Number*	
Location Note	D-972-22J, POPCO Gas Plant		
Device Description	4.5' ID x 33'; 1045 psig @ 300 deg F		

19.31 TEG Disentrainment Separator

Device ID #	**105348**	***Device Name***	**TEG Disentrainment Separator**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	A-203
Model		*Serial Number*	
Location Note	D-972-22J, POPCO Gas Plant		
Device Description	20" OD x 4.166'; 1203 psig @ 300 deg F		

19.32 Treated Fuel Gas Scrubber

Device ID #	**105283**	***Device Name***	**Treated Fuel Gas Scrubber**
Rated Heat Input		*Physical Size*	30.00 Gallons
Manufacturer		*Operator ID*	V-208
Model		*Serial Number*	
Location Note	D-972-22C1, POPCO Gas Plant		
Device Description	10" sch 80 pipe x 8' FDF; 175 psig @ 250 deg F		

19.33 Treated Gas Wash Column

Device ID #	**105276**	***Device Name***	**Treated Gas Wash Column**
Rated Heat Input		*Physical Size*	3590.00 Gallons
Manufacturer		*Operator ID*	V-206
Model		*Serial Number*	
Location Note	D-972-22A, POPCO Gas Plant		
Device Description	4' ID x 36'; 1045 psig @ 200 deg F		

19.34 Wash Column Pumps

Device ID #	**105279**	***Device Name***	**Wash Column Pumps**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	P-204 A/B
Model		*Serial Number*	
Location Note	D-972-22A, POPCO Gas Plant		
Device Description			

20 Sour Water Stripping Unit (600)

20.1 Sour Water Stripper

Device ID #	**105493**	*Device Name*	**Sour Water Stripper**
Rated Heat Input		*Physical Size*	65.00 PSIG
Manufacturer		*Operator ID*	V-601
Model		*Serial Number*	
Location Note	D-972-26B, POPCO Gas Plant		
Device Description	1.67' OD x 43'		

20.2 SWS Bottoms Cooler

Device ID #	**105498**	*Device Name*	**SWS Bottoms Cooler**
Rated Heat Input	0.770 MMBtu/Hour	*Physical Size*	75.00 PSIG
Manufacturer		*Operator ID*	E-603
Model		*Serial Number*	
Location Note	D-972-26D, POPCO Gas Plant		
Device Description	Duty: 0.67 x 1.15 MMBtu/hr		

20.3 SWS Bottoms Pumps

Device ID #	**105494**	*Device Name*	**SWS Bottoms Pumps**
Rated Heat Input		*Physical Size*	12.50 gal/Minute
Manufacturer		*Operator ID*	P-604 A/B
Model		*Serial Number*	
Location Note	D-972-26B. POPCO Gas Plant		
Device Description	delta 23.1 psi		

20.4 SWS Feed Cooler

Device ID #	**105489**	***Device Name***	**SWS Feed Cooler**
Rated Heat Input	0.600 MMBtu/Hour	*Physical Size*	125.00 PSIG
Manufacturer		*Operator ID*	E-604
Model		*Serial Number*	
Location Note	D-972-26A, POPCO Gas Plant		
Device Description	Duty: 0.529 x 1.15 MMBtu/hr		

20.5 SWS Feed Pumps

Device ID #	**105490**	***Device Name***	**SWS Feed Pumps**
Rated Heat Input		*Physical Size*	11.30 gal/Minute
Manufacturer		*Operator ID*	P-602 A/B
Model		*Serial Number*	
Location Note	D-972-26A, POPCO Gas Plant		
Device Description	5 hp electric motor		

20.6 SWS Feed Surge Drum

Device ID #	**105488**	***Device Name***	**SWS Feed Surge Drum**
Rated Heat Input		*Physical Size*	16646.00 Gallons
Manufacturer		*Operator ID*	V-603
Model		*Serial Number*	
Location Note	D-972-26A, POPCO Gas Plant		
Device Description	10' ID x 25'		

20.7 SWS Overhead Accumulator

Device ID #	**105496**	***Device Name***	**SWS Overhead Accumulator**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-602
Model		*Serial Number*	
Location Note	D-972-26C, POPCO Gas Plant		
Device Description	2' OD x 8'		

20.8 SWS Overhead Condenser

Device ID #	**105495**	***Device Name***	**SWS Overhead Condenser**
Rated Heat Input	0.290 MMBtu/Hour	*Physical Size*	65.00 PSIG
Manufacturer		*Operator ID*	E-602
Model		*Serial Number*	
Location Note	D-972-26C, POPCO Gas Plant		
Device Description	Duty: 0.26 x 1.15 MMBtu/hr		

20.9 SWS Reflux Pumps

Device ID #	**105497**	***Device Name***	**SWS Reflux Pumps**
Rated Heat Input		*Physical Size*	1.00 gal/Minute
Manufacturer		*Operator ID*	P-603 A/B
Model		*Serial Number*	
Location Note	D-972-26C, POPCO Gas Plant		
Device Description	delta 23.5 psi		

21 Sulfur Removal Unit

21.1 Beavon Plant

21.1.1 Absorber Tower

Device ID #	**105190**	***Device Name***	**Absorber Tower**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-A504
Model		*Serial Number*	
Location Note	D-11-MP-5B, POPCO Gas Plant		
Device Description	Top: 5.5' x 78.5'; Bottom: 10' x 11.5' 15 psig @ 125 deg F		

21.1.2 Citric Acid Tank

Device ID #	105193	*Device Name*	Citric Acid Tank
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	T-A511
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	6' OD x 14'		

21.1.3 Oxidizer Tank No. 1

Device ID #	105191	*Device Name*	Oxidizer Tank No. 1
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	T-A501
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	18' 6" x 23'		

21.1.4 Oxidizer Tank No. 2

Device ID #	105192	*Device Name*	Oxidizer Tank No. 2
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	T-A509
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	12' x 23'		

21.1.5 Reaction Tank

Device ID #	105147	*Device Name*	Reaction Tank
Rated Heat Input		*Physical Size*	Brake Horsepower
Manufacturer		*Operator ID*	V-A503
Model		*Serial Number*	
Location Note	D-11-MP-5A, POPCO Gas Plant		
Device Description	RxnTank: 13' ID x 25'; 15 psig @ 125 deg F		

21.1.6 Reducing Gas Generator

Device ID #	**105184**	***Device Name***	**Reducing Gas Generator**
Rated Heat Input	4.600 MMBtu/Hour	*Physical Size*	
Manufacturer		*Operator ID*	F-A501
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	15 psig @ 650 deg F		

21.1.7 Rinse Water Receiver

Device ID #	**105210**	***Device Name***	**Rinse Water Receiver**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-A505
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	16" ID x 24"		

21.1.8 Solution Circulation Pumps

Device ID #	**105188**	***Device Name***	**Solution Circulation Pumps**
Rated Heat Input		*Physical Size*	1900.00 gal/Minute
Manufacturer		*Operator ID*	P-A505 C/D
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	@ 110 psi		

21.1.9 Spray Tower

Device ID #	**105187**	***Device Name***	**Spray Tower**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-A503
Model		*Serial Number*	
Location Note	D-11-MP-5A, POPCO Gas Plant		
Device Description	Spray Tower: 4.5' ID x 20';		

21.1.10 Venturi Contactor

Device ID #	**105185**	***Device Name***	**Venturi Contactor**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	J-A501 A/B
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	Tail pipe: 14" ID x 20' long		

21.1.11 Venturi Contactor No. 1

Device ID #	**105186**	***Device Name***	**Venturi Contactor No. 1**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	J-A501
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	18" ID x 20' long		

21.1.12 Venturi Contactor No. 2

Device ID #	**105189**	***Device Name***	**Venturi Contactor No. 2**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	J-A502
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description			

21.2 Claus Plant

21.2.1 Acid Gas KO Drum

Device ID #	**105163**	***Device Name***	**Acid Gas KO Drum**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	VA-401
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	5.5' x 17'		

21.2.2 Ammonia Injection System

Device ID #	**105166**	***Device Name***	**Ammonia Injection System**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	A-A401
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description			

21.2.3 Converters

Device ID #	**105171**	***Device Name***	**Converters**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	R-A401
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	Includes converters for 1st, 2nd, and 3rd stages; 7' x 10' 4"		

21.2.4 Reaction Cooler

Device ID #	**105168**	***Device Name***	**Reaction Cooler**
Rated Heat Input	16.560 MMBtu/Hour	*Physical Size*	
Manufacturer		*Operator ID*	E-A412
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	Shell: 330 psig @ 650 deg F, Tube: 15 psig @ 700 deg F		

21.2.5 Reheat Burner No. 1

Device ID #	**105170**	***Device Name***	**Reheat Burner No. 1**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	F-A403
Model		*Serial Number*	
Location Note	D-10-MP-7, POPCO Gas Plant		
Device Description	15 psig @ 650 deg F		

21.2.6 Reheat Burner No. 2

Device ID #	**105173**	***Device Name***	**Reheat Burner No. 2**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	F-A404
Model		*Serial Number*	
Location Note	D-10-MP-8, POPCO Gas Plant		
Device Description	15 psig @ 650 deg F		

21.2.7 Reheat Burner No. 3

Device ID #	**105175**	*Device Name*	**Reheat Burner No. 3**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note	D-10-M-9, POPCO Gas Plant		
Device Description	15 psig @ 650 deg F		

21.2.8 Sour Water Pumps

Device ID #	**105165**	*Device Name*	**Sour Water Pumps**
Rated Heat Input		*Physical Size*	20.00 gal/Minute
Manufacturer		*Operator ID*	P-A401 A/B
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	Powered by a 1.5 bhp electric motor		

21.2.9 SRU Reaction Furnace

Device ID #	**105167**	*Device Name*	**SRU Reaction Furnace**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description			

21.2.10 Steam Condenser

Device ID #	**105177**	*Device Name*	**Steam Condenser**
Rated Heat Input	0.870 MMBtu/Hour	*Physical Size*	
Manufacturer		*Operator ID*	E-A403
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	75 psig @ 300 deg F		

21.2.11 Sulfur Charge Pump

Device ID #	**105179**	***Device Name***	**Sulfur Charge Pump**
Rated Heat Input		*Physical Size*	3.00 gal/Minute
Manufacturer		*Operator ID*	P-A402 A
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	Pump driven by a 20 hp electric motor		

21.2.12 Sulfur Condenser No. 1

Device ID #	**105169**	***Device Name***	**Sulfur Condenser No. 1**
Rated Heat Input	1.510 MMBtu/Hour	*Physical Size*	
Manufacturer		*Operator ID*	C-A401
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	Shell: 80 psig @ 324 deg F; Tube: 15 psig @ 750 deg F		

21.2.13 Sulfur Condenser No. 2

Device ID #	**105172**	***Device Name***	**Sulfur Condenser No. 2**
Rated Heat Input	2.420 MMBtu/Hour	*Physical Size*	
Manufacturer		*Operator ID*	C-A402
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	Shell: 80 psig @ 324 deg F, Tube: 15 psig @ 710 deg F		

21.2.14 Sulfur Degassing Pumps

Device ID #	**105181**	***Device Name***	**Sulfur Degassing Pumps**
Rated Heat Input		*Physical Size*	32.00 gal/Minute
Manufacturer		*Operator ID*	P-A404 A/B/C
Model		*Serial Number*	
Location Note	D-10-MP-12, POPCO Gas Plant		
Device Description			

21.2.15 Sulfur Loading Pumps

Device ID #	**105182**	***Device Name***	**Sulfur Loading Pumps**
Rated Heat Input		*Physical Size*	100.00 gal/Minute
Manufacturer		*Operator ID*	P-A403 A/B
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description			

21.2.16 Sulfur Pit

Device ID #	**105178**	***Device Name***	**Sulfur Pit**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SP-A401
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	20' x 40' x 10'		

21.2.17 Sulfur Pit Vent Blower

Device ID #	**105180**	***Device Name***	**Sulfur Pit Vent Blower**
Rated Heat Input		*Physical Size*	200.00 scf/Minute
Manufacturer		*Operator ID*	K-A402 A/B
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description			

21.3 Stretford Plant

21.3.1 Balance Tank

Device ID #	**105198**	*Device Name*	**Balance Tank**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	T-A510
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	21' ID x 18'; 0 psig @ 12.5 deg F		

21.3.2 Chemical Make-Up Pit

Device ID #	**105206**	*Device Name*	**Chemical Make-Up Pit**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	SP-A502
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	5' sq x 5' deep		

21.3.3 Evaporative Cooler

Device ID #	**105199**	*Device Name*	**Evaporative Cooler**
Rated Heat Input	7.950 MMBtu/Hour	*Physical Size*	7500.00 lb/Hour
Manufacturer		*Operator ID*	E-A506
Model		*Serial Number*	
Location Note	D-11-MP-6, POPCO Gas Plant		
Device Description			

21.3.4 Evaporative Cooler Pump

Device ID #	**105201**	***Device Name***	**Evaporative Cooler Pump**
Rated Heat Input		*Physical Size*	1000.00 gal/Minute
Manufacturer		*Operator ID*	P-A512
Model		*Serial Number*	
Location Note	D-11-MP-6, POPCO Gas Plant		
Device Description	Rated at 34 psi		

21.3.5 Make-Up Pump

Device ID #	**105205**	***Device Name***	**Make-Up Pump**
Rated Heat Input		*Physical Size*	25.00 gal/Minute
Manufacturer		*Operator ID*	P-A509
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description			

21.3.6 Solution Circulation Pumps

Device ID #	**105202**	***Device Name***	**Solution Circulation Pumps**
Rated Heat Input		*Physical Size*	1900.00 gal/Minute
Manufacturer		*Operator ID*	P-A505 A/B
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	Rated @ 110 psi		

21.3.7 Solution Heater

Device ID #	**105200**	*Device Name*	**Solution Heater**
Rated Heat Input	10.400 MMBtu/Hour	*Physical Size*	
Manufacturer		*Operator ID*	E-A507
Model		*Serial Number*	
Location Note	D-11-MP-6, POPCO Gas Plant		
Device Description	Pipe: 255 psig @ 165 deg F; Jacket: 80 psig @ 324 deg F		

21.3.8 Stretford Sewer Pit Pump

Device ID #	**105203**	*Device Name*	**Stretford Sewer Pit Pump**
Rated Heat Input		*Physical Size*	75.00 gal/Minute
Manufacturer		*Operator ID*	P-A513
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description			

21.3.9 Sulfur Melter/Storage Tank

Device ID #	**105208**	*Device Name*	**Sulfur Melter/Storage Tank**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	T-A507
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	8' ID x 8'		

21.3.10 Sulfur Meter Pump

Device ID #	**105209**	*Device Name*	**Sulfur Meter Pump**
Rated Heat Input		*Physical Size*	50.00 gal/Minute
Manufacturer		*Operator ID*	P-A511
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	Rated @ 28.1 psi		

21.3.11 Sulfur Slurry Tank

Device ID #	**105207**	*Device Name*	**Sulfur Slurry Tank**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	T-A502
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	10' ID x 18'		

22 TEG Drain System (800)

22.1 TEG Drain Pump

Device ID #	**105514**	*Device Name*	**TEG Drain Pump**
Rated Heat Input		*Physical Size*	20.00 gal/Minute
Manufacturer		*Operator ID*	P-818
Model		*Serial Number*	
Location Note	D-972-28X, POPCO Gas Plant		
Device Description	10 hp electric motor, delta 107 psi		

22.2 TEG Drain Vessel

Device ID #	**105513**	***Device Name***	**TEG Drain Vessel**
Rated Heat Input		*Physical Size*	50.00 PSIG
Manufacturer		*Operator ID*	V-811
Model		*Serial Number*	
Location Note	D-972-28X, POPCO Gas Plant		
Device Description	5' ID x 6'		

23 TEG Regeneration (120)

23.1 GPU TEG Flash Drum

Device ID #	**104831**	***Device Name***	**GPU TEG Flash Drum**
Rated Heat Input		*Physical Size*	0.37 Gallons
Manufacturer		*Operator ID*	V-121
Model		*Serial Number*	
Location Note	D-972-21Y, POPCO Gas Plant		
Device Description	2.5 ft diameter by 10 high; 135 psig @ 225 deg F		

23.2 Lean TEG Feed Pumps

Device ID #	**105213**	***Device Name***	**Lean TEG Feed Pumps**
Rated Heat Input		*Physical Size*	256.00 Gallons/Hour
Manufacturer		*Operator ID*	P-121 A/B/C
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description			

23.3 Lean TEG Surge/Storage Drum

Device ID #	**105218**	***Device Name***	**Lean TEG Surge/Storage Drum**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-122
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	42" OD x 16'; stress relief		

23.4 Lean/Rich TEG Exchanger

Device ID #	**105215**	***Device Name***	**Lean/Rich TEG Exchanger**
Rated Heat Input	0.380 MMBtu/Hour	*Physical Size*	
Manufacturer		*Operator ID*	E-123
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	Shell: 150 psig @ 500 deg F; Tube: 150 psig @ 500 deg F		

23.5 Rich TEG Carbon Filter

Device ID #	**105212**	***Device Name***	**Rich TEG Carbon Filter**
Rated Heat Input		*Physical Size*	263.20 Gallons/Hour
Manufacturer		*Operator ID*	F-122 A/B
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	135 psig @ 225 deg F		

23.6 Rich TEG Particulate Filter

Device ID #	**105211**	***Device Name***	**Rich TEG Particulate Filter**
Rated Heat Input		*Physical Size*	263.20 Gallons/Hour
Manufacturer		*Operator ID*	F-121 A/B
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	135 psig @ 225 deg F		

23.7 Sample Return Pot

Device ID #	**105219**	***Device Name***	**Sample Return Pot**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-125
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	10" ID x 1'		

23.8 Stripper Overhead Condenser

Device ID #	**105217**	***Device Name***	**Stripper Overhead Condenser**
Rated Heat Input	0.280 MMBtu/Hour	*Physical Size*	
Manufacturer		*Operator ID*	E-122
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	150 psig @ 250 deg F; 1.5 hp motor		

23.9 Stripper Reflux Accumulator

Device ID #	**105216**	***Device Name***	**Stripper Reflux Accumulator**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-123
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	12.75" OD x 6'		

23.10 TEG Stripper Reflux Pumps

Device ID #	**105220**	***Device Name***	**TEG Stripper Reflux Pumps**
Rated Heat Input		*Physical Size*	31.80 gal/Minute
Manufacturer		*Operator ID*	P-122 A/B
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description			

23.11 TEG Stripping Column

Device ID #	**105214**	***Device Name***	**TEG Stripping Column**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-124
Model		*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	12.75" D x 9'		

23.12 TEG/Gas Exchanger

Device ID #	**105223**	*Device Name*	**TEG/Gas Exchanger**
Rated Heat Input	0.080 MMBtu/Hour	*Physical Size*	
Manufacturer		*Operator ID*	E-124
Model		*Serial Number*	
Location Note	D-972-21C, POPCO Gas Plant		
Device Description	Stress relieve		

24 TEG Regeneration (Sulfinol) (250)

24.1 High Pressure Particulate Filter

Device ID #	**105351**	*Device Name*	**High Pressure Particulate Filter**
Rated Heat Input		*Physical Size*	1172.00 gal/Minute
Manufacturer		*Operator ID*	F-253 C/D
Model		*Serial Number*	
Location Note	D-972-22K, POPCO Gas Plant		
Device Description	2000 psig @ 120 deg F		

24.2 Lean TEG Feed Pump

Device ID #	**105353**	*Device Name*	**Lean TEG Feed Pump**
Rated Heat Input		*Physical Size*	450.00 gal/Minute
Manufacturer		*Operator ID*	P-251 A
Model		*Serial Number*	
Location Note	D-972-22K, POPCO Gas Plant		
Device Description	delta 9 psia		

24.3 Lean TEG Feed Pumps

Device ID #	**105352**	*Device Name*	**Lean TEG Feed Pumps**
Rated Heat Input		*Physical Size*	570.00 gal/Minute
Manufacturer		*Operator ID*	P-251 C/D
Model		*Serial Number*	
Location Note	D-972-22K, POPCO Gas Plant		
Device Description	delta 917 psia		

24.4 Lean TEG Surge/Storage Drum

Device ID #	**105355**	*Device Name*	**Lean TEG Surge/Storage Drum**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-252
Model		*Serial Number*	
Location Note	D-972-22L, POPCO Gas Plant		
Device Description	4' OD x 30'; 50 psig @ 450 deg F relieve		

24.5 Lean/Rich TEG Exchanger

Device ID #	**105354**	*Device Name*	**Lean/Rich TEG Exchanger**
Rated Heat Input	1.360 MMBtu/Hour	*Physical Size*	
Manufacturer		*Operator ID*	E-253
Model		*Serial Number*	
Location Note	D-972-22L, POPCO Gas Plant		
Device Description	Duty: 0.9776 x 1.4 MMBtu/hr		

24.6 Rich TEG Carbon Filter

Device ID #	**105350**	***Device Name***	**Rich TEG Carbon Filter**
Rated Heat Input		*Physical Size*	1172.00 gal/Minute
Manufacturer		*Operator ID*	F-252 A/B
Model		*Serial Number*	
Location Note	D-972-22K, POPCO Gas Plant		
Device Description	135 psig @ 225 deg F		

24.7 Rich TEG Flash Drum

Device ID #	**104836**	***Device Name***	**Rich TEG Flash Drum**
Rated Heat Input		*Physical Size*	1500.00 Gallons
Manufacturer		*Operator ID*	V-251
Model		*Serial Number*	
Location Note	D-972-22K, POPCO Gas Plant		
Device Description	4' OD x 16 '; 135 psig @ 225 deg F		

24.8 Rich TEG Particulate Filter

Device ID #	**105349**	***Device Name***	**Rich TEG Particulate Filter**
Rated Heat Input		*Physical Size*	1172.00 gal/Minute
Manufacturer		*Operator ID*	F-251 A/B
Model		*Serial Number*	
Location Note	D-972-22K, POPCO Gas Plant		
Device Description	delta 5 psi clean; 135 psig @ 225 deg F		

24.9 Stripper Overhead Condenser

Device ID #	**104838**	*Device Name*	**Stripper Overhead Condenser**
Rated Heat Input	0.900 MMBtu/Hour	*Physical Size*	
Manufacturer		*Operator ID*	E-252
Model		*Serial Number*	
Location Note	D-972-22M, POPCO Gas Plant		
Device Description	40 psig @ 250 deg F		

24.10 Stripper Reflux Accumulator

Device ID #	**105448**	*Device Name*	**Stripper Reflux Accumulator**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-253
Model		*Serial Number*	
Location Note	D-972-22M, POPCO Gas Plant		
Device Description	50 psig @ 225 deg F		

24.11 TEG Gas Exchanger

Device ID #	**105347**	*Device Name*	**TEG Gas Exchanger**
Rated Heat Input	0.200 MMBtu/Hour	*Physical Size*	
Manufacturer		*Operator ID*	E-254 A/B
Model		*Serial Number*	
Location Note	D-972-22J, POPCO Gas Plant		
Device Description	Duty: 0.1464 x 1.4 MMBtu/hr		

24.12 TEG Stripper Reflux Pumps

Device ID #	**105449**	***Device Name***	**TEG Stripper Reflux Pumps**
Rated Heat Input		*Physical Size*	103.60 Gallons/Hour
Manufacturer		*Operator ID*	P-252 A/B
Model		*Serial Number*	
Location Note	D-972-22M, POPCO Gas Plant		
Device Description	delta P = 20 psi, electric motor 0.75 hp		

24.13 TEG Stripping Column

Device ID #	**104837**	***Device Name***	**TEG Stripping Column**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	V-254
Model		*Serial Number*	
Location Note	D-972-22L, POPCO Gas Plant		
Device Description	1.5 ft dia by 9 ft high		

25 Waste Liquid System (800)

25.1 T-601 Carbon Canisters

Device ID #	**113429**	***Device Name***	**T-601 Carbon Canisters**
Rated Heat Input		*Physical Size*	100.00 Cubic Feet/Minute
Manufacturer	Calgon	*Operator ID*	
Model	Ventsorb	*Serial Number*	
Location Note	POPCO Gas Plant		
Device Description	Two 55 gallon canisters, each containing 180 lbs of activated carbon. Connected in series.		

25.2 Waste Liquid Storage Tank (601)

Device ID #	**103103**	***Device Name***	**Waste Liquid Storage Tank (601)**
Rated Heat Input		*Physical Size*	91800.00 Gallons
Manufacturer		*Operator ID*	T-601
Model		*Serial Number*	
Location Note	D-972-28Z, POPCO Gas Plant		
Device Description	P&ID D-972-28Z		

25.3 Waste Liquid Storage Tank (807)

Device ID #	**103104**	***Device Name***	**Waste Liquid Storage Tank (807)**
Rated Heat Input		*Physical Size*	8812.00 Gallons
Manufacturer		*Operator ID*	T-807
Model		*Serial Number*	
Location Note	D-972-28Z, POPCO Gas Plant		
Device Description	P&ID D-972-28Z		

25.4 Waste Liquid Transfer Pump

Device ID #	**105160**	***Device Name***	**Waste Liquid Transfer Pump**
Rated Heat Input		*Physical Size*	20.00 gal/Minute
Manufacturer		*Operator ID*	P-821
Model		*Serial Number*	
Location Note	D-972-28Z, POPCO Gas Plant		
Device Description	Powered by a 1.5 bhp electric motor		

B EXEMPT EQUIPMENT

1 Batch Tank

Device ID #	**102621**	***Device Name***	**Batch Tank**
Rated Heat Input		*Physical Size*	5.00 Gallons
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.Q.1 Batch Mixers <5cf Rated Working Capacity	
Location Note	POPCO Gas Plant		
Device Description	also includes a metering pump.		

2 Solvent Usage: Surface Coating - Maintenance

Device ID #	**008795**	***Device Name***	**Solvent Usage: Surface Coating - Maintenance**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.I.3 Surface Coating Equipment using < 55g/yr	
Location Note	POPCO Gas Plant		
Device Description			

3 Acid Gas Preheater

Device ID #	**105164**	***Device Name***	**Acid Gas Preheater**
Rated Heat Input	0.730 MMBtu/Hour	*Physical Size*	
Manufacturer		*Operator ID*	E-A401
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.G.1 Combustion Equipment <= 2 MMBtu/hr	
Location Note	POPCO Gas Plant		
Device Description			

4 Degreasing Equipment

Device ID #	**115226**	***Device Name***	**Degreasing Equipment**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.U.2.a. Degreasing Equipment W/Lqd Surf Area <929 Cm2	
Location Note	POPCO Gas Plant		
Device Description	Single pieces of degreasing equipment that have a liquid area less than one square foot and where the total aggregate liquid surface area of all such units at the stationary source is less than 10 square feet,		

5 Forced Air Furnace

Device ID #	**008792**	***Device Name***	**Forced Air Furnace**
Rated Heat Input	0.050 MMBtu/Hour	*Physical Size*	0.05 MMBtu/Hour
Manufacturer		*Operator ID*	F-A412
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.G.1 Combustion Equipment <= 2 MMBtu/hr	
Location Note	D-10-MP-6, POPCO Gas Plant		
Device Description	Fired exclusively on PUC quality gas		

6 Diesel Fuel Storage Tanks

Device ID #	**115227**	***Device Name***	**Diesel Fuel Storage Tanks**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.V.2 Storage Of Refined Fuel Oil W/Grav <=40 Api	
Location Note	POPCO Gas Plant		
Device Description			

7 TEG Regenerator Reboiler

Device ID #	**002353**	*Device Name*	**TEG Regenerator Reboiler**
Rated Heat Input	1.400 MMBtu/Hour	*Physical Size*	0.42 MMBtu/Hour
Manufacturer		*Operator ID*	E-121
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.G.1 Combustion Equipment <= 2 MMBtu/hr	
Location Note	D-972-21Z, POPCO Gas Plant		
Device Description	Permit includes the burner (B-121) plus the TEG Reboiler (E-121) which should equal 0.92 MMBtu/hr per the PID: D-972-21Z		

8 Refrigerant Make-up Tank

Device ID #	**102622**	*Device Name*	**Refrigerant Make-up Tank**
Rated Heat Input		*Physical Size*	10000.00 Gallons
Manufacturer		*Operator ID*	T-151
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 201.A No Potential To Emit Air Contaminants	
Location Note	D-972-21M, POPCO Gas Plant		
Device Description	7' x 30' 10"; 250 psig @ 200 deg F		

9 Sulfinol TEG Reboiler

Device ID #	**002352**	*Device Name*	**Sulfinol TEG Reboiler**
Rated Heat Input	1.400 MMBtu/Hour	*Physical Size*	
Manufacturer		*Operator ID*	E-251
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.G.1 Combustion Equipment <= 2 MMBtu/hr	
Location Note	PID D-972-221, POPCO Gas Plant		
Device Description	Fired with PUC quality gas; Includes burner (B-251) plus TEG Reboiler (E-251);		

10 IC Engines: Other (Diesel)

Device ID #	**008794**	***Device Name***	**IC Engines: Other (Diesel)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.F.1.e. Compression ignition engines w/ bhp 50 or less	
Location Note	POPCO Gas Plant		
Device Description	Miscellaneous exempt diesel fired engines, whose fuel use is reported by Exxon in the annual emissions inventory		

11 Sulfur Condenser No. 3

Device ID #	**105174**	***Device Name***	**Sulfur Condenser No. 3**
Rated Heat Input	0.750 MMBtu/Hour	*Physical Size*	
Manufacturer		*Operator ID*	C-A403
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.G.1 Combustion Equipment <= 2 MMBtu/hr	
Location Note	POPCO Gas Plant		
Device Description	Shell: 80 psig @ 324 deg F; Tube: 15 psig @ 650 deg F		

12 Sulfur Condenser No. 4

Device ID #	**105176**	***Device Name***	**Sulfur Condenser No. 4**
Rated Heat Input	0.870 MMBtu/Hour	*Physical Size*	
Manufacturer		*Operator ID*	C-A404
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.G.1 Combustion Equipment <= 2 MMBtu/hr	
Location Note	POPCO Gas Plant		
Device Description	Shell: 75 psig @ 320 deg F; Tube: 15 psig @ 650 deg F		

13 Lube Oil Storage Tanks

Device ID #	**115228**	***Device Name***	**Lube Oil Storage Tanks**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.V.3 Storage Of Lubricating Oils	
Location Note	POPCO Gas Plant		
Device Description			

14 Portable Abrasive Blasting Equipment

Device ID #	**008796**	***Device Name***	**Portable Abrasive Blasting Equipment**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.H.3 Portable Abrasive Blast Equipment	
Location Note	POPCO Gas Plant		
Device Description	Does not include associated IC Engine.		

15 Refrigerant Make-up Tank

Device ID #	**115229**	***Device Name***	**Refrigerant Make-up Tank**
Rated Heat Input		*Physical Size*	10000.00 Gallons
Manufacturer		*Operator ID*	T-151
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 202.V.8 Storage Of Liquefied/Compressed Gases	
Location Note	POPCO Gas Plant		
Device Description	Contains Propane		

E DE-PERMITTED EQUIPMENT

1 Emergency Generator (G-800)

Device ID #	**002358**	***Device Name***	**Emergency Generator (G-800)**
Rated Heat Input		*Physical Size*	52.00 Brake Horsepower
Manufacturer	Waukesha	*Operator ID*	G-800
Model	VRD220U	*Serial Number*	350933
Depermitted		*Facility Transfer*	
Device Description			

10.3 ExxonMobil Comments on the Draft Permit and District Responses

Subject	Section	ExxonMobil Comment	District Response
Fugitive Hydrocarbon Emissions Components	9.C.3.b	Condition 9.C.3.b.v and vi should be combined into a single condition.	Change made as requested.
Facility Shutdown Due to Pipeline Failure	9.C.37	Facility Shutdown Due to Pipeline Failure. *please add underlined text to proposed condition* Within 60 days of permit issuance, the permittee shall submit a list of all equipment units <u>or processing area</u> subject to this condition due to nonoperation during temporary facility shutdown caused by the failure and shutdown of Plains All American Pipeline Lines 901 and 903.	Change made as requested.
Facility Restart Reporting	9.C.38	Facility Restart Reporting. For the equipment units that are temporarily nonoperational due to the pipeline failure, the permittee shall submit a facility start-up schedule 30 calendar days prior to the first facility/plant restart. The schedule shall identify the planned timing and sequencing of startup activities related to the SYU plants and facilities for the upcoming month. Following submittal of this initial schedule, the permittee shall provide to the District a semi-monthly report summarizing the prior period's restart activities, and a description of the restart activities planned for the next half month period. The report shall be submitted to the District on the 1st and 16th each month. The permittee shall notify the District when the facility restart is complete and semi-monthly reporting described in this condition shall cease.	Change made as requested.
Facility Restart Fugitive Emissions Inspection	9.C.39	Facility Restart Fugitive Emissions Inspection. For the equipment units that are temporarily nonoperational due to the pipeline failure, the permittee shall initiate all I&M inspections required under Condition 9.C.3, in accordance with the facility's approved I&M Plan, with the first inspection commencing within 7 days of the start of operations. For the first three calendar months of operation, where no inspections are otherwise required under Condition 9.C.3, optical imaging screening procedures described under Health and Safety Code Section 95669 shall be performed on all fugitive components subject to Condition 9.C.3. Method 21 shall be used to quantify all potential leaks identified by the optical	Change made as requested.

		screening procedure. Any confirmed leaks shall be repaired, recorded and reported following Condition 9.C.3 and Rule 331. All screening inspections shall be recorded and reported following Condition 9.C.3 (d) and (e) respectively. After the initial three (3) months of operation, the inspection frequency for fugitive components subject to Condition 9.C.3 shall revert to the inspection schedule identified for the component category in Condition 9.C.3.b(xi) – (xii).	

10.4 Fee Statement

air pollution control district
SANTA BARBARA COUNTY

FEE STATEMENT
PT-70/Reeval No. 08092 - R10
FID: 03170 POPCO / SSID: 01482

Device Fee

Device No.	Device Name	Fee Schedule	Qty of Fee Units	Fee per Unit	Fee Units	Max or Min. Fee Apply?	Number of Same Devices	Pro Rate Factor	Device Fee	Penalty Fee?	Fee Credit	Total Fee per Device
002350	Boiler A	A3	41.000	598.34	Per 1 million Btu input	Max	1	1.000	8,006.06	0.00	0.00	8,006.06
105500	Amine Injection Package	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
002351	Boiler B	A3	41.000	598.34	Per 1 million Btu input	Max	1	1.000	8,006.06	0.00	0.00	8,006.06
105524	Boiler Off-Gas Knockout Drum	A6	1.820	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105501	Chelant/Dispersant Injection Package	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105508	Fuel Gas Knockout Drum	A6	0.290	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105503	Condensate Coolers	A1.a	1.000	79.76	Per equipment	No	2	1.000	159.52	0.00	0.00	159.52
002359	Firewater Pump (805)	A1.a	3.234	79.76	Per equipment	No	1	1.000	257.94	0.00	0.00	257.94
002356	Firewater Pump (806)	A1.a	3.234	79.76	Per equipment	No	1	1.000	257.94	0.00	0.00	257.94
105515	Storm Water/Oil Water Separator	A6	7.140	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105516	Stormwater Separator Pump	A2	1.500	41.35	Per total rated hp	Min	1	1.000	79.24	0.00	0.00	79.24
105157	Flare KO Drum (Acid)	A6	1.460	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105158	Flare KO Drum (HC)	A6	2.180	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
106398	Gas Pig Receiver	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105230	Bypass Separator	A6	9.386	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105221	Feed Gas Water Separator	A6	1.600	4.57	Per 1000 gallons	Min	2	1.000	158.48	0.00	0.00	158.48
105229	Flare Knockout Pot	A6	0.010	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105226	Gas Chillers	A1.a	1.000	79.76	Per equipment	No	2	1.000	159.52	0.00	0.00	159.52
105224	Gas/Gas Exchanger	A1.a	1.000	79.76	Per equipment	No	4	1.000	319.04	0.00	0.00	319.04
105225	Gas/Stabilizer Feed Exchanger	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105227	Main Separators	A6	6.350	4.57	Per 1000 gallons	Min	2	1.000	158.48	0.00	0.00	158.48
105273	Methanol Injection Pumps	A2	25.000	41.35	Per total rated hp	No	2	1.000	2,067.50	0.00	0.00	2,067.50

102620	Methanol Tank	A6	14.610	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105274	NGL Booster Pump	A2	25.000	41.35	Per total rated hp	No	1	1.000	1,033.75	0.00	0.00	1,033.75
105272	NGL Product Pumps	A2	20.000	41.35	Per total rated hp	No	2	1.000	1,654.00	0.00	0.00	1,654.00
105267	NGL Storage Tank #1	A6	83.730	4.57	Per 1000 gallons	No	1	1.000	382.65	0.00	0.00	382.65
105268	NGL Storage Tank #2	A6	83.730	4.57	Per 1000 gallons	No	1	1.000	382.65	0.00	0.00	382.65
105269	NGL Storage Tank #3	A6	83.730	4.57	Per 1000 gallons	No	1	1.000	382.65	0.00	0.00	382.65
105270	NGL Storage Tank #4	A6	83.730	4.57	Per 1000 gallons	No	1	1.000	382.65	0.00	0.00	382.65
105271	NGL Storage Tank #5	A6	83.730	4.57	Per 1000 gallons	No	1	1.000	382.65	0.00	0.00	382.65
105275	NGL Transfer Pump	A2	50.000	41.35	Per total rated hp	No	1	1.000	2,067.50	0.00	0.00	2,067.50
105233	Stabilizer	A6	10.290	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105232	Stabilizer Feed/Bottoms Exchanger	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105235	Stabilizer Overhead Condenser	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105237	Stabilizer Pumps	A2	7.500	41.35	Per total rated hp	No	2	1.000	620.25	0.00	0.00	620.25
105234	Stabilizer Reboiler	A1.a	1.000	79.76	Per equipment	No	2	1.000	159.52	0.00	0.00	159.52
105236	Stabilizer Reflux Accumulator	A6	1.676	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105222	TEG Contactor	A6	4.321	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105228	Water Separator	A6	7.245	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105507	Housekeeping Drain Pump	A2	1.000	41.35	Per total rated hp	Min	1	1.000	79.24	0.00	0.00	79.24
105506	Housekeeping Drain Vessel	A6	0.880	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
002357	Emergency Air Generator	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105261	1st Stage Refrigerant Scrubber	A6	1.800	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105263	1st Stage Suction Pulsation Bottle	A6	0.190	4.57	Per 1000 gallons	Min	2	1.000	158.48	0.00	0.00	158.48
105262	2nd Stage Refrigerant Scrubber	A6	1.800	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105264	2nd Stage Suction Pulsation Bottle	A6	0.190	4.57	Per 1000 gallons	Min	2	1.000	158.48	0.00	0.00	158.48

105231	Flash/Gas Refrigerant Exchanger	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105265	Refrigerant Compressor	A2	900.000	41.35	Per total rated hp	Max	2	1.000	16,012.12	0.00	0.00	16,012.12
105266	Refrigerant Condenser	A1.a	1.000	79.76	Per equipment	No	2	1.000	159.52	0.00	0.00	159.52
105260	Refrigerant Flash Tank	A6	1.200	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105258	Refrigerant Make-Up Pump	A2	20.000	41.35	Per total rated hp	No	1	1.000	827.00	0.00	0.00	827.00
105259	Refrigerant Surge Tank	A6	13.900	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105511	Pressure Drain Pump	A2	3.000	41.35	Per total rated hp	No	1	1.000	124.05	0.00	0.00	124.05
105510	Pressure Drain Vessel	A6	1.420	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105456	1st Stage Discharge Pulsation Bottle	A6	0.100	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105464	1st Stage Discharge Pulsation Bottle B	A6	0.100	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105451	1st Stage Suction Pulsation Bottle	A6	0.130	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105463	1st Stage Suction Pulsation Bottle B	A6	0.130	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105459	2nd Stage Discharge Pulsation Bottle	A6	0.070	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105467	2nd Stage Discharge Pulsation Bottle B	A6	0.070	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105461	2nd Stage Suction Disentrainment Separator	A6	0.060	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105469	2nd Stage Suction Disentrainment Separator B	A6	0.040	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105470	2nd Stage Suction Pulsation Bottle	A6	0.080	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105466	2nd Stage Suction Pulsation Bottle B	A6	0.060	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105462	Recompressor A	A2	600.000	41.35	Per total rated hp	Max	1	1.000	8,006.06	0.00	0.00	8,006.06
105465	Recompressor B	A2	600.000	41.35	Per total rated hp	Max	1	1.000	8,006.06	0.00	0.00	8,006.06
105471	Recompressor Gas Cooler	A1.a	1.000	79.76	Per equipment	No	2	1.000	159.52	0.00	0.00	159.52
105460	Recompressor Intercooler	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105468	Recompressor Intercooler B	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105478	Coalescing Filter	A6	0.130	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24

105486	Discharge Pulsation Bottle A	A6	0.290	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105487	Discharge Pulsation Bottle B	A5	0.230	99.70	Per sq ft of inside x-sec	Min	1	1.000	79.24	0.00	0.00	79.24
105472	Knockout Drum	A6	2.870	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105480	Sales Gas Compressor A	A2	600.000	41.35	Per total rated hp	Max	1	1.000	8,006.06	0.00	0.00	8,006.06
105482	Sales Gas Compressor B	A2	600.000	41.35	Per total rated hp	Max	1	1.000	8,006.06	0.00	0.00	8,006.06
105483	Sales Gas Cooler A	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105484	Sales Gas Coolers	A1.a	1.000	79.76	Per equipment	No	2	1.000	159.52	0.00	0.00	159.52
105485	Sales Gas Evaporative Cooler Water Pump	A2	3.000	41.35	Per total rated hp	No	1	1.000	124.05	0.00	0.00	124.05
105479	Suction Pulsation Bottle A/B	A6	0.130	4.57	Per 1000 gallons	Min	2	1.000	158.48	0.00	0.00	158.48
105481	Suction Pulsation Bottle C/D	A6	0.130	4.57	Per 1000 gallons	Min	2	1.000	158.48	0.00	0.00	158.48
105528	Contact Condenser Cooler	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105530	Contact Condenser Pump & Common Spare	A2	10.000	41.35	Per total rated hp	No	2	1.000	827.00	0.00	0.00	827.00
105529	Desuperheater Pump	A2	15.000	41.35	Per total rated hp	No	1	1.000	620.25	0.00	0.00	620.25
105527	Desuperheater/Contact Condenser	A6	5.450	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105525	Hydrogenation Reactor	A6	3.440	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105526	Reactor Effluent Cooler	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105492	Steam Generator	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105300	Absorber	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105284	Antifoam Injection Tank	A6	0.005	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105342	Chemical Fill Pot	A6	0.004	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
104832	Fuel Gas Contactor	A6	0.549	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
104830	GPU TEG Flash Gas KO Pot	A6	0.013	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105278	High Pressure Contactor	A6	16.460	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105277	Knockout Drum	A6	4.390	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24

105302	Lean Solvent Booster Pumps	A2	300.000	41.35	Per total rated hp	Max	3	1.000	24,018.18	0.00	0.00	24,018.18
105285	Lean Solvent Pumps	A2	250.000	41.35	Per total rated hp	Max	3	1.000	24,018.18	0.00	0.00	24,018.18
105286	Lean Solver Cooler	A1.a	1.000	79.76	Per equipment	No	4	1.000	319.04	0.00	0.00	319.04
105287	Lean/Rich Solvent Exchanger	A1.a	1.000	79.76	Per equipment	No	6	1.000	478.56	0.00	0.00	478.56
105280	Low Pressure Contactor	A6	14.290	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
104833	Low Pressure Flash Tank	A6	4.413	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105281	Low Pressure Scrubber	A6	0.320	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105282	PDS/TDS/SDS Sour Gas Eductor	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105341	Reclaimer	A5	0.254	99.70	Per sq ft of inside x-sec	Min	1	1.000	79.24	0.00	0.00	79.24
105340	Reflux SuperHeater	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105339	Reflux Vaporizer	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105344	Solvent Drain Filter	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105303	Sour Gas Eductor	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
104834	Sour Gas Eductor	A1.a	1.000	79.76	Per equipment	No	2	1.000	159.52	0.00	0.00	159.52
105304	Stripper	A6	31.900	4.57	Per 1000 gallons	No	1	1.000	145.78	0.00	0.00	145.78
105306	Stripper Overhead Condenser	A1.a	1.000	79.76	Per equipment	No	2	1.000	159.52	0.00	0.00	159.52
105305	Stripper Reboiler	A1.a	1.000	79.76	Per equipment	No	2	1.000	159.52	0.00	0.00	159.52
105308	Stripper Reflux Accumulator	A6	0.620	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105307	Stripper Reflux Pumps	A2	5.000	41.35	Per total rated hp	No	2	1.000	413.50	0.00	0.00	413.50
105301	Sulfinol Carbon Filters	A1.a	1.000	79.76	Per equipment	No	2	1.000	159.52	0.00	0.00	159.52
105345	Sulfinol Drain Pump	A2	10.000	41.35	Per total rated hp	No	1	1.000	413.50	0.00	0.00	413.50
105343	Sulfinol Drain Vessel	A6	0.800	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105346	TEG Contactor	A6	4.320	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105348	TEG Disentrainment Separator	A6	0.070	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24

105283	Treated Fuel Gas Scrubber	A6	0.030	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105276	Treated Gas Wash Column	A6	3.950	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105279	Wash Column Pumps	A2	10.000	41.35	Per total rated hp	No	2	1.000	827.00	0.00	0.00	827.00
105493	Sour Water Stripper	A6	0.637	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105498	SWS Bottoms Cooler	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105494	SWS Bottoms Pumps	A2	3.000	41.35	Per total rated hp	No	2	1.000	248.10	0.00	0.00	248.10
105489	SWS Feed Cooler	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105490	SWS Feed Pumps	A2	5.000	41.35	Per total rated hp	No	2	1.000	413.50	0.00	0.00	413.50
105488	SWS Feed Surge Drum	A6	16.646	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105496	SWS Overhead Accumulator	A6	0.184	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105495	SWS Overhead Condenser	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105497	SWS Reflux Pumps	A2	0.500	41.35	Per total rated hp	Min	2	1.000	158.48	0.00	0.00	158.48
105190	Absorber Tower	A6	20.620	4.57	Per 1000 gallons	No	1	1.000	94.23	0.00	0.00	94.23
105193	Citric Acid Tank	A6	0.210	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105191	Oxidizer Tank No. 1	A6	46.060	4.57	Per 1000 gallons	No	1	1.000	210.49	0.00	0.00	210.49
105192	Oxidizer Tank No. 2	A6	0.840	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105147	Reaction Tank	A6	24.720	4.57	Per 1000 gallons	No	1	1.000	112.97	0.00	0.00	112.97
105184	Reducing Gas Generator	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105210	Rinse Water Receiver	A6	0.020	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105188	Solution Circulation Pumps	A2	150.000	41.35	Per total rated hp	No	2	1.000	12,405.00	0.00	0.00	12,405.00
105187	Spray Tower	A6	2.250	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105185	Venturi Contactor	A1.a	1.000	79.76	Per equipment	No	2	1.000	159.52	0.00	0.00	159.52
105186	Venturi Contactor No. 1	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105189	Venturi Contactor No. 2	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76

105163	Acid Gas KO Drum	A6	3.010	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105166	Ammonia Injection System	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105171	Converters	A6	8.890	4.57	Per 1000 gallons	Min	3	1.000	237.72	0.00	0.00	237.72
105168	Reaction Cooler	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105170	Reheat Burner No. 1	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105173	Reheat Burner No. 2	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105175	Reheat Burner No. 3	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105165	Sour Water Pumps	A2	1.500	41.35	Per total rated hp	Min	2	1.000	158.48	0.00	0.00	158.48
105167	SRU Reaction Furnace	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105177	Steam Condenser	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105179	Sulfur Charge Pump	A2	20.000	41.35	Per total rated hp	No	1	1.000	827.00	0.00	0.00	827.00
105169	Sulfur Condenser No. 1	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105172	Sulfur Condenser No. 2	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105181	Sulfur Degassing Pumps	A2	20.000	41.35	Per total rated hp	No	3	1.000	2,481.00	0.00	0.00	2,481.00
105182	Sulfur Loading Pumps	A2	5.000	41.35	Per total rated hp	No	2	1.000	413.50	0.00	0.00	413.50
105178	Sulfur Pit	A6	59.520	4.57	Per 1000 gallons	No	1	1.000	272.01	0.00	0.00	272.01
105180	Sulfur Pit Vent Blower	A2	3.000	41.35	Per total rated hp	No	2	1.000	248.10	0.00	0.00	248.10
105198	Balance Tank	A6	2.580	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105206	Chemical Make-Up Pit	A6	0.010	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105199	Evaporative Cooler	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105201	Evaporative Cooler Pump	A2	20.000	41.35	Per total rated hp	No	1	1.000	827.00	0.00	0.00	827.00
105205	Make-Up Pump	A2	2.000	41.35	Per total rated hp	No	1	1.000	82.70	0.00	0.00	82.70
105202	Solution Circulation Pumps	A2	150.000	41.35	Per total rated hp	No	2	1.000	12,405.00	0.00	0.00	12,405.00
105200	Solution Heater	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76

105203	Stretford Sewer Pit Pump	A2	2.000	41.35	Per total rated hp	No	1	1.000	82.70	0.00	0.00	82.70
105208	Sulfur Melter/Storage Tank	A6	3.010	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105209	Sulfur Meter Pump	A2	5.000	41.35	Per total rated hp	No	1	1.000	206.75	0.00	0.00	206.75
105207	Sulfur Slurry Tank	A6	10.580	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105514	TEG Drain Pump	A2	10.000	41.35	Per total rated hp	No	1	1.000	413.50	0.00	0.00	413.50
105513	TEG Drain Vessel	A6	0.880	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
104831	GPU TEG Flash Drum	A6	0.370	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105213	Lean TEG Feed Pumps	A2	3.000	41.35	Per total rated hp	No	3	1.000	372.15	0.00	0.00	372.15
105218	Lean TEG Surge/Storage Drum	A6	1.150	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105215	Lean/Rich TEG Exchanger	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105212	Rich TEG Carbon Filter	A1.a	1.000	79.76	Per equipment	No	2	1.000	159.52	0.00	0.00	159.52
105211	Rich TEG Particulate Filter	A1.a	1.000	79.76	Per equipment	No	2	1.000	159.52	0.00	0.00	159.52
105219	Sample Return Pot	A6	0.004	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105217	Stripper Overhead Condenser	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105216	Stripper Reflux Accumulator	A6	0.040	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105220	TEG Stripper Reflux Pumps	A2	3.000	41.35	Per total rated hp	No	2	1.000	248.10	0.00	0.00	248.10
105214	TEG Stripping Column	A6	0.060	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105223	TEG/Gas Exchanger	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105351	High Pressure Particulate Filter	A1.a	1.000	79.76	Per equipment	No	2	1.000	159.52	0.00	0.00	159.52
105353	Lean TEG Feed Pump	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105352	Lean TEG Feed Pumps	A1.a	1.000	79.76	Per equipment	No	2	1.000	159.52	0.00	0.00	159.52
105355	Lean TEG Surge/Storage Drum	A6	2.810	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105354	Lean/Rich TEG Exchanger	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105350	Rich TEG Carbon Filter	A1.a	1.000	79.76	Per equipment	No	2	1.000	159.52	0.00	0.00	159.52

104836	Rich TEG Flash Drum	A6	1.500	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105349	Rich TEG Particulate Filter	A1.a	1.000	79.76	Per equipment	No	2	1.000	159.52	0.00	0.00	159.52
104838	Stripper Overhead Condenser	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105448	Stripper Reflux Accumulator	A1.a	1.000	79.76	Per equipment	No	1	1.000	79.76	0.00	0.00	79.76
105347	TEG Gas Exchanger	A1.a	1.000	79.76	Per equipment	No	2	1.000	159.52	0.00	0.00	159.52
105449	TEG Stripper Reflux Pumps	A2	0.750	41.35	Per total rated hp	Min	2	1.000	158.48	0.00	0.00	158.48
104837	TEG Stripping Column	A6	0.120	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
103103	Waste Liquid Storage Tank (601)	A6	91.800	4.57	Per 1000 gallons	No	1	1.000	419.53	0.00	0.00	419.53
103104	Waste Liquid Storage Tank (807)	A6	8.800	4.57	Per 1000 gallons	Min	1	1.000	79.24	0.00	0.00	79.24
105160	Waste Liquid Transfer Pump	A2	1.500	41.35	Per total rated hp	Min	1	1.000	79.24	0.00	0.00	79.24
	Device Fee Sub-Totals =								**$174,166.90**	**$0.00**	**$0.00**	
	Device Fee Total =											**$174,166.90**

Permit Fee

Fee Based on Devices **$174,166.90**

Fee Statement Grand Total = $174,166

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.

February 15, 2023

Certified Mail
Return Receipt Requested 9207 8902 2008 6301 0113 68

Brian Smith
ExxonMobil Upstream Company
12000 Calle Real, Trailer A-2
Goleta, CA 93117

FID: 01482, 03170, 08009, 08018, 08019
Permit: 5651-R7, 8092-R10, 9100-R7, 9101-R7, 9102-R7
SSID: 01482

Re: ExxonMobil Santa Ynez Unit Reissuance of Final Combined Part 70 0perating Permits and District Permits to Operate 9100-R7 for Platform Hondo, 9101-R7 for Platform Harmony, 9102-R7 for Platform Heritage, 8092-R10 for POPCO, and 5651-R7 for the Las Flores Canyon Oil and Gas Plant

Dear Brian Smith:

Enclosed are the final Part 70 Permit Renewals / Reevaluations as noted above for the Santa Ynez Unit Stationary Source. Please note that these permits are combined District Permits to Operate (PTO) and Part 70 Operating Permits. Carefully review the enclosed documents to ensure that they accurately describe your facilities and that the conditions are acceptable to you. Note that your permitted emission limits may, in the future, be used to determine emission fees.

You should become familiar with all District rules pertaining to your facility. These permits do not relieve you of any requirements to obtain authority or permits from other governmental agencies.

This permit requires you to:

- Pay a **fee** of $174,166 for PT-70/PTO 8092-R10, which is due immediately and is considered late after 30 calendar days from the date stamped on the permit. Pursuant to District Rule 210.IV.B, no appeal shall be heard unless all fees have been paid. See the attached invoice for more information.

- Follow the conditions listed on your permit. Pay careful attention to the recordkeeping and reporting requirements.

- Ensure that a copy of the enclosed permit is posted or kept readily available near the permitted equipment.

- Promptly report changes in ownership, operator, or your mailing address to the District.

If you are not satisfied with the conditions of this permit, **you have thirty (30) calendar days from the date of this permit issuance notice to appeal this permit to the Air Pollution Control District Hearing Board** (ref: California Health and Safety Code, §42302.1). Any contact, discussions, or meetings with District staff regarding the terms of this permit during or after permit issuance do not constitute an appeal under Rule 209 or the California H&SC and will not stop or alter the 30-day appeal period. Only a formal application to the Hearing Board can initiate an appeal. You may contact the Clerk of the Hearing Board for specific information concerning appeal initiation and procedures.

Please include the facility identification (FID) and permit numbers as shown at the top of this letter on all correspondence regarding this permit. If you have any questions, please contact Agnieszka Letts of my staff at (805) 979-8317.

Sincerely,

David Harris, Division Manager
Engineering Division

Attachments: Combined District Permits to Operate (PTO) and Part 70 Operating Permit No.s 5651-R7, 8092-R10, 9100-R7, 9101-R7, and 9102-R7

cc: ExxonMobil Project Files
Engr Chron File
Agnieszka Letts (Cover letter only)
Patrice Surmeier - patrice.a.surmeier@exxonmobil.com
William Sarraf (Cover letter only)

\\sbcapcd.org\shares\groups\engr\wp\oil&gas\major sources\ssid 01482 exxon - syu project\syu 2023 reevaluation\final documents\2023 syu reeval - final letter - 2-14-2023.docx

air pollution control district
SANTA BARBARA COUNTY

260 N. San Antonio Rd, Suite A
Santa Barbara, CA 93110-1315

Invoice: P7R 08092 - R10
Date: 02/15/2023
Terms: Net 30 Days

500000/6600/3282

INVOICE

BILL TO:	FACILITY:
Steve Shively ExxonMobil Production Company (102142) 12000 Calle Real, Trailer A-2 Goleta, CA 93117	POPCO 03170 12000 Calle Real, Trailer A-2 Goleta

Permit: Part 70 Permit Renewal / Reevaluation (PT-70/Reeval) No. 08092 - R10

Fee Type: Permit Evaluation Fee (see the Fee Statement in your permit for a breakdown of the fees)

Amount Due: $ 174,166

REMIT PAYMENTS TO THE ABOVE ADDRESS
Please indicate the invoice number P7R 08092 - R10
on your remittance.

IF YOU HAVE ANY QUESTIONS REGARDING YOUR INVOICE PLEASE CONTACT
OUR ADMINISTRATION DIVISION AT (805) 979-8050

The District charges $25 for returned checks. Other penalties/fees may be incurred as a result of returned checks and late payment (see District Rule 210). Failure to pay this Invoice may result in the cancellation or suspension of your permit. Please notify the District regarding any changes to the above information